BANK REGULATION IMPLICATIONS FOR MANAGING ACCOUNTING QUALITY RISK: A BASEL AND IFRS PERSPECTIVE

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DECLARATION

I certify that this work has not been accepted in substance for any degree, and is not concurrently being submitted for any degree other than that of the degree of Doctor of Philosophy being studied at the University of Greenwich. I also declare that this work is the result of my own investigations except where otherwise identified by references and that I have not plagiarised the work of others.

Signed by:

Student: ____________________

Date: 30 Nov 2012

Supervisor: ____________________

Date: 3 Dec 2012

To my parents

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While acknowledging all who contributed to my research and thesis in so many ways, any errors and omissions that may remain in this thesis are mine alone.

GLOSSARY

This section presents some of the main symbols, terms and abbreviations applied in this thesis.

*	The super-scripted number is at the 95% confidence level (also termed the 95% confidence interval). This is interpreted also as being at the 0.05 significance level or being significant at 5%.
**	The super-scripted number is at the 99% confidence level (also termed the 99% confidence interval). This is interpreted also as being at the 0.01 significance level or being significant at 1%.
Accounting Quality	The characteristics of accounting information signifying qualities that include being relevant, reliable and un-biased.
Accounting Quality Risk	The absolute measure of the difference between the change in an accounting total variable and the change in the market price variable. *Accounting quality risk* is related to *accounting quality* in that a *high level of accounting quality* translates to a *low level of exposure to accounting quality risk*. Conversely, a *low level of accounting quality* translates to a *high level of exposure to accounting quality risk*.
Accounting to Market Price Relative Delta	For a firm, the measure of the difference between the change in the accounting total variable and the change in the market price variable for one unit of time. For a portfolio or a sample of firms, this is the measure of the difference between the change in the accounting total variable and the change in the market price variable for one unit of time averaged at the firm level. It provides a measure of the level of *accounting quality*, and is a direct measure of the level of exposure to *accounting quality risk*.
Accounting Total(s)	The Financial Statement totals generally reported in the Balance Sheet, Income Statement and Cash Flow Statement.

Accounting Value-at-Risk	The measure of the maximum potential change in an accounting total based variable for a specified probability over a specified time horizon. In addition, accounting Value-at-Risk is also referred to as the Accounting total Value-at-Risk, or Change in Accounting total Value-at-Risk. The accounting Value-at-Risk measures estimated in this study include the following: Total Equity Value-at-Risk using the total equity change variable, Total Assets Value-at-Risk using the total assets change variable, Total Liabilities Value-at-Risk using the total liabilities change variable and Net Income Value-at-Risk using the net income change variable.
Adjusted Market Price	The Market Price of a firm's equity share (stock) recorded at a specified time from a regulated financial exchange that has been adjusted for capital events (also termed corporate actions). See Appendix Y for a list of capital events that can potentially adjust an equity share's (a stock's) market price.
Adjusted Price	See Adjusted Market Price.
ASB	The Accounting Standards Board The accounting standards setting body for the United Kingdom.
Basel	The Basel Accord or Basel regulations. The standards applied for national and regional banking regulations. The term Basel, in a regulatory context, applies to the regulations specified as Basel I, Basel II, Basel II.5 and Basel III.
BM	Book-to-Market ratio BM may also be written as B/M.
Book Equity	Total Shareholders' Equity adjusted for taxes and preferred stock. See Fama and French 2008, page 2979.
Book Equity Value	See Book Equity.
Book Value	See Book Equity.
Capital Events	See Corporate Actions.
Close Market Price	The market price of a firm's equity share (stock) recorded at the closing time of the exchange the shares are traded on. The 'Close' signifies the end of a trading day.

Company	See Firm.
Control group	Sample of firms from the London Stock Exchange (LSE) that conduct banking related activities and did not adopt the IASB's IFRS accounting standards on 1st January 2005.
Corporate Actions	Actions or events that adjust the Market Price of a firm's equity share (stock).
d(E/S)	Relative change in Total Shareholders' Equity per Common Shares Outstanding
dA	Log change in Total Assets
dBM	Relative change in Book-to-Market Value
dE	Relative change in Total Shareholders' Equity
dI	Relative change in Net Income
Difference Component	A measure of the movement of one variable relative to the movement of another variable in unit time. Provides a measure of *valuation bias* or *information bias*. Measures the level of difference quantified by the relative delta measure (see Relative Delta).
Difference or Dispersion	The magnitude of movement of one variable in an opposite direction to another variable.
Distress and Distress Risk	See Financial Distress Risk.
dL	Log change in Total Liabilities
dln (BM)	Log change in Book-to-Market ratio
dln(E)	Log change in Total Shareholders' Equity
dln(E/S)	Log change in Total Shareholders' Equity per Common Outstanding Shares
dln(I)	Log change in Net Income
dln(MB)	Log change in Market-to-Book ratio

dM	Log change in Market Price This is the same as Market Price Return or Market Return, also termed the *Price Return* or *Return*.
dMB	Relative change in Market-to-Book ratio
dMV	Log change in Market Value
dS	Log change in Number of Common Shares Outstanding
End-of-Time Horizon Breach Count	The *binary count* of the event where a Value-at-Risk level is breached by the market price return on the actual time horizon date. The time horizon date is specified as the date that corresponds to the number of days specified by the *time horizon* counted forward from the current date.
Equity Share	One part portion of equity held by a firm, generally apportioned for a financial instrument traded on a regulated exchange.
Explicit Accounting Role	The role specified in this study that describes the effect financial accounting has within the risk management framework. This role is observed when the accounting function reports information that is accurate and without bias when compared to comparable information observed in the financial markets.
Financial Distress	See Financial Distress Risk.
Financial Distress Risk	The measure of the difference between the change in the total equity variable and the change in the market price variable. In addition, the measure of the difference between the change in accounting total variables and the change in the market price variable. Financial distress risk is also specified in literature to be an effect from a high book-to-market ratio.
Financial Reporting Quality	See Accounting Quality.
Firm	An organisation or a group that is a going concern and is established for the purpose of conducting business.
Framework	A system of measures or models applied with the aim of addressing a specified objective.

Growth Stock	A financial equity share (stock) of a firm with a low book-to-market ratio.
Historical Value-At-Risk Actual	Unless otherwise stated, the *Historical Value-At-Risk Actual* measure specifies the *market price return Value-at-Risk* measured using the historical simulation Value-at-Risk approach. This measure is calculated at the 95% confidence level, and at the 250-day time horizon using 301 historical 250-day market price returns. Historical Value-At-Risk Actual is also referred to as the *market price return Historical Value-at-Risk Actual*.
IASB	International Accounting Standards Board
IFRS	International Financial Reporting Standards The reporting standards that are applied as a part of the IASB accounting standards framework.
Implicit Accounting Role	The effect financial accounting has within the risk management framework when the accounting function reports information that exhibits a different level when compared to comparable information observed in the financial markets.
In-Time Horizon Breach Count	The number of times a Value-at-Risk level is breached by the market price return within a specified time horizon.
Key Accounting Totals	The Balance Sheet measures: Total Shareholders' Equity, Total Assets, Total Liabilities, and the Income Statement measure: Net Income.
Legacy System	A *dated* mainframe accounting system. This term may also apply to any system that is recognised to require re-engineering or significant upgrading as part of a normal or special course of events.
LHS	Left-Hand Side
ln	Natural logarithm to the base e
Log Return	See Market Price Return.
log_e	See *ln*.

M	Market price variable. Has the same definition as *P*. Applied when the change in the market price variable *dM* is used (where *dM* is also termed the market price return).
Market Price	The price of one equity share (stock) for a firm that is traded on a regulated financial exchange and is observed or recorded at a specified time.
Market Price Return	The change in market price defined relative to some initial market price (JPMorgan and Reuter 1996).
Market Price Return Value-at-Risk	See Market Price Value-at-Risk.
Market Price Value-at-Risk	Value-at-Risk (see Value-at-Risk) calculated by using the market price return variable, also referred to as the *market price return Value-at-Risk* and also as the *Historical Value-at-Risk Actual.*
Market Return	See Market Price Return.
Measure	A mathematical rule applied to quantify a specified level.
Model	A single measure or a system of measures based on a specified measurement rule.
Obs.	Average number of possible *Observations*, rounded to the nearest whole number.
Obs N	Average number of possible *Observations* that represent the number of firms in the sample, rounded to the nearest whole number.
Obs T	Average number of possible *Observations* that represent the number of time periods observed, rounded to the nearest whole number.
Open Market Price	The market price of a firm's equity share (stock) recorded at the opening time of the exchange the shares are traded on. 'Open' signifies the start of a trading day.
P	See Market Price.
Primary sample	Sample comprising the five banks listed in the London Stock Exchange (LSE) banking sector.
R^2	Coefficient of determination

Regulatory Relative Delta	A model proposed to monitor and specify adjustment levels to the Basel minimum regulatory capital level.
Relative Delta	The measure of the difference between the change in one variable and the change in another variable. Applied in this study to represent the measure of the difference between the change in an accounting total variable and the change in the market price variable. Provides a measure of the level of *accounting quality*, and is a direct measure of the level of exposure to *accounting quality risk*. The *relative delta* measure may also be referred to by the terms *delta relative*, *delta difference* or *difference delta*.
Return	See Market Price Return.
RHS	Right-Hand Side
SD	Standard Deviation
SE	Standard Error
Secondary sample	Sample of firms from the London Stock Exchange (LSE) that conduct banking related activities and adopted the IASB's IFRS accounting standards on 1st January 2005 and for the years thereafter.
Share	See Equity Share.
SSE	Error Sum of Squares
SST	Total Sum of Squares
Stock	One equity share.
TA	Total Assets amount.
TBM	Total Book-to-Market ratio amount.
TE	Total Shareholders' Equity amount.
TI	Total Net Income amount. In a general sense, Net Income may also be referred to as earnings.
TL	Total Liabilities amount.
TMB	Total *Market*-to-*Book* ratio amount.
TMV	Total Market Value amount.

Total Equity	Total Shareholders' Equity measured by applying the prevailing accounting standards.
Total Equity Book	See Book Equity.
Total variable	The variable that represents a *total* value recorded on a specified date. This variable does not represent a change variable such as those calculated using the relative or log change forms.
TS	Total number of Shares outstanding.
UK GAAP	The United Kingdom Generally Accepted Accounting Practice
V	Value-at-Risk variable or Historical Value-at-Risk Actual variable.
V95	Historical Value-at-Risk Actual variable at the 95% confidence level.
Value-at-Risk	The measure of the maximum potential change in value of a financial item or instrument for a specified probability over a specified time horizon.
Value Relevance	A measure of the level of accuracy that a firm's accounting information reflects in its value, when compared to an observable valuation from a financial market based measure. For a firm an example of a financial market based measure with a high level of observability would be its equity share price observed on a regulated financial market.
Value Stock	A financial equity share (stock) of a firm with a high book-to-market ratio.
VaR	See Value-at-Risk.
VaR 001	Value-at-Risk at the 99.9% confidence level, that is, at the 0.001 significance level.
VaR 01	Value-at-Risk at the 99% confidence level, that is, at the 0.01 significance level.
VaR 05	Value-at-Risk at the 95% confidence level, that is, at the 0.05 significance level.
VOL	Volume of trade, specified by the number of a firm's shares traded on a regulated financial exchange during a specified time period, generally 1 trading day.

ABSTRACT

This thesis examines whether accounting quality, measured as the difference between accounting and market price change, had an impact on the five primary UK banks that adopted IASB's IFRS accounting standards in 2005.

The findings reveal that the changes in accounting standards resulted in the banks experiencing decreased levels of accounting quality and increased levels of exposure to financial distress risk in the period 2005 to 2008, compared to the pre-adoption period of 1992 to 2004. These findings are corroborated when examining a secondary sample of banking related firms that also adopted the same standards in 2005. A control group that did not adopt these standards exhibited an opposite trend, recording a comparative increase in accounting quality from 2005 to 2008. For all firms tested, the 1-day market price Value-at-Risk (VaR) levels increased year-on-year from 2005 to 2009, with VaR breaches during March and May 2006. These firms, for the 2005 to 2009 period, also displayed increased levels of financial market volatility. Importantly, examining the banks' Basel capital requirements, it is implied that their levels increased after 2005. These findings, in general, contribute to extending literature that focuses on the accounting standards change.

One of the findings from this examination is that contrary to the European Commission's 2002 (EC 2002) and IASB's (IASB 2009) expectation to strengthen the efficient functioning of the European and global financial markets, in the UK the banking sector's investor uncertainty increased significantly during 2005 to 2009.

Another finding relates to the measurements applied in this research. Changes in accounting quality and the Basel minimum capital requirement are examined by applying two measures systemised as the *relative delta* and the *regulatory relative delta* respectively. Both function by quantifying differences between accounting totals and market price. It is discovered that these measures, *accounting VaR*, and the technology framework, as introduced in this study, have potential benefits and regulatory implications. These are aimed at facilitating the mitigation of risks that impact on accounting quality.

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Chapter 1 Introduction

The role financial accounting plays in risk management may be contended as being intricate in nature, in the sense that accounting may find itself playing two roles. The first role, by definition, is the generally accepted explicit role where accounting methods, specified by accounting standards, are applied to report information that can help investors manage potential exposure to financial risk. The accounting methods classified under this category would include the approaches: fair value accounting that includes *hedge accounting*, *risk accounting* and *market value accounting*; deferral accounting; and, accrual accounting (Ongkrutaraksa 1999). The American Bankers Association (ABA) President and CEO (from 2005 to 2010) Edward Yingling expresses this explicit role to be analogous to the metaphor that accounting policy is accurately *measuring the temperature of a flame* (Leone 2008). In this metaphorical context, the flame's *temperature* is considered in this study to be analogous to a *firm's value*.

The second role accounting plays is a more subtle implicit role and is intrinsic to the first role. This is where the accounting policy applied to help facilitate economic decision making that aim to manage and mitigate financial risk, may inadvertently report *biased* information. This *biased information*, its level specified in this study as a measure of exposure to *accounting quality risk*, could potentially have the effect to introduce *financial risk* that is exogenous to the normal functioning of the financial system. Expressed by Yingling this implicit accounting role would be analogous to the metaphor that accounting policy is *adding fuel to a fire, and thus increasing the temperature of the flame that it's measuring*[1] (Leone 2008). This implicit accounting role, on the contrary, may be considered analogous to the metaphor that the accounting policy is *reducing fuel to a fire, and thus decreasing the temperature of the flame that it's measuring*. This implicit accounting role, due to the difficulty in measuring its effects (IASB1 2008), may be contended as being overlooked within the contemporary

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[1] Reported by Leone (2008), Yingling's statement with regards to *adding fuel to a fire*, contextually refers to outside influences adding to or *distorting* the temperature of a flame from its true level. That is, for example, the accounting standards applied may overstate or understate a valuation for a firm when compared to its *true value*. Yingling's statement may also be interpreted as referring to the market valuation of a firm, such as its market price, becoming exposed to increased levels of volatility than would otherwise be experienced if another accounting approach was applied.

firmwide risk management and the regulatory risk measurement frameworks, including the *Basel risk management framework* (Basel 2011).

This research is concerned with the interrelated nature of both the explicit and the implicit accounting roles. However, this study aims to determine accounting policy performance from the basis of accounting's explicit role. If deviations from this normal explicit function are exhibited, even during volatile market conditions, then this study considers such a period of observed deviation as evidence of accounting's implicit role.

As its focus, this study takes the before and after effects arising from the important 2005 accounting standards change on the five major banks registered with the London Stock Exchange's (LSE's) United Kingdom (UK) banking sector[2]. The 2005 accounting change witnessed UK banks and other firms throughout Europe adopt the International Accounting Standards Board (IASB) framework's internationally focused accounting standards. The IASB's accounting standards are entitled the International Financial Reporting Standards (IFRS)[3]. The 2005 accounting change[4] has become the focus of much recent debate as one of the most significant financial accounting changes in modern history (Armstrong, Barth, Jagolinzer, and Riedl 2010).

This study examines how well the function of accounting played its explicit role after the 2005 accounting change when compared with its function before the change. The role this change played in reducing financial risk is examined by approaches that include comparing the levels of market price return Value-at-Risk and accounting Value-at-Risk for before and after the accounting change. In the process of its

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[2] This study categorises banks to be in the UK banking sector if they are listed in the London Stock Exchange (LSE) *Banks* Industry Sector. As at January 2012 there are five UK banks listed in the LSE's Banks sector. The five banks are presented in Table 3.3 and are grouped and referred in this study also by the terms: *banks*, *UK banks*, *banks in the UK banking sector* and the *Primary sample*. LSE information sourced from: http://www.londonstockexchange.com [accessed 15th May 2012].

[3] This study makes reference to the IASB framework's accounting standards also as the IASB accounting standards and the IFRS accounting standards.

[4] The 2005 accounting standards referred to in this study are based on the 2005 financial statements published by the UK banks listed in the LSE (HSBC 2006, Barclays 2006, RBS 2006, Lloyds 2006, Standard Chartered 2006). In addition, the IFRS official accounting standards pronouncements issued on the 1st of January 2008 and 2009 (IASB 2008, 2009) are also referenced. Other than changes to implementation dates for some IFRS accounting standards, the referenced pronouncements maintain a faithful representation of the IFRS accounting standards applied from 2005 to 2009. Any changes to the IFRS pronouncements after 2005 and during 2009 are not considered significant to the findings reported in this study.

investigation, this study develops a measurement system for the currently un-recognised effects from the implicit role that accounting may have played within the firmwide and regulatory risk management frameworks. This measurement system is developed for the firmwide risk management framework by extending the Fama and French (2008) time dependent treatment of the book-to-market ratio. This system is developed with the aim to report the *difference* between accounting totals and market price change variables. In addition, it is developed to report levels of exposure to financial distress risk and to provide a direct measure of the levels of exposure to accounting quality risk. The measurement system developed in this study, for reasons of brevity, is termed the *relative delta*. The details of which will be discussed in the later sections. The measurement at the regulatory level extends this relative delta measure to produce the *regulatory relative delta*. The regulatory relative delta measure is developed with the objective to extend the current Basel III (Basel 2011) bank regulatory framework to adjust its minimum capital requirement to effects that may arise from accounting's implicit role. In addition, this study addresses the limitations of the current technology framework to implement such a measurement system.

This study's methodological approach is guided by the hypothesis based deductive methodology, termed the hypothetico-deductive methodology, and the falsification theory[5] (Popper 1992). Based on a research question, this study specifies a null hypothesis and applies its methodological approach to establish evidence to verify or falsify its null hypothesis[6]. The research question this study asks and the null hypothesis this study tests are both introduced in Sections 1.2 and 1.3 respectively. To test the null hypothesis, material and statistical significance is examined for market price and accounting variables for banks in the UK banking sector for before and after the 2005 accounting change, within the time range 1992 to 2009. Furthermore, the Gross Domestic Product variables and general market variables are tested to deduce general economic and market conditions during the same time range. In order to test the selected variables for material and statistical significance, this study applies a number of

[5] Hypothesis based deduction combined with the falsification theory is a scientific method that was first formally prescribed by Professor Sir Karl Raimund Popper (Popper 1992).

[6] The methodological approach this study applies is guided by the falsification theory that aims to build evidence to falsify a set hypothesis. This study also discusses aspects of building evidence to verify or *corroborate* its null hypothesis. Although, this study discusses both aspects of verifying and falsifying the null hypothesis, the tests conducted and the conclusions arrived at are guided by the level of evidence that falsifies the null hypothesis. This approach is consistent with the falsification theory (or the falsification methodological approach) prescribed by Popper (1992).

quantitative analytical methods. These methods include descriptive statistics, correlation analysis, cross-sectional and time series regression, and relative percentage change analysis. The variables tested include market price return, Value-at-Risk (VaR), total shareholders' equity, total assets, total liabilities, net income, the developed relative delta and regulatory relative delta measures.

1.1 Background

Under European Community (EC) regulations, the five large banking institutions registered in LSE's UK banking sector in 2005 observed a change in accounting standards. Before the change, banks applied the accounting standards accepted under the UK GAAP[7] (United Kingdom Generally Accepted Accounting Practice). The accounting standards accepted under the UK GAAP are the standards issued by the Accounting Standard Board (ASB). The accounting standards applied by these banks after 2005, and for the subsequent years, were the IASB accounting standards.

The purpose of the 2005 accounting change was to help improve and strengthen the efficient functioning of European capital markets (EC 2002, IASB 2009). With this aim, firms in the UK and throughout Europe changed from regionally developed sets of accounting standards accepted under the local GAAP (Generally Accepted Accounting Practice), to the IASB's IFRS accounting standards. The major problem that has arisen regarding this accounting change is that, on the one hand the EC regulations endorsed the accounting change in 2005 to improve capital market functioning, and on the other hand, Platikanova and Nobes (2006), Paananen and Lin (2009) and Morais and Curto (2008) reveal that contrary to the European Community and IASB expectations, samples of firms in Europe that adopted these new standards in 2005, soon after exhibited increased levels of market price volatility. In addition, their findings reveal that the adopting firms examined exhibit evidence of decreased accounting data value relevance resulting in lower accounting quality. Section 2.9 presents the approach applied in this study to characterise accounting quality[8] and quantify value relevance.

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[7] The term GAAP may also be referred to as Generally Accepted Accounting Principles and Generally Accepted Accounting Policies.

[8] In order to maintain continuity with current literature, this thesis makes reference to the term *accounting quality*. However, the level of *accounting quality* may be translated as a firm's level of exposure to *accounting quality risk*. Where, *high accounting quality* translates to a *low level of exposure to accounting quality risk*. Conversely, *low accounting quality* translates to a *high level of exposure to accounting quality risk*.

With the aim to examine the levels of volatility exhibited by the UK banks during and after the 2005 accounting change, Figure 1.1 plots the stock market price returns from 2004 to 2009 for the banks in the UK banking sector. Figure 1.1 generally shows that the level of market price return volatility increases and Value-at-Risk levels become breached during March and May 2006 and during March 2007. Figure 1.1 also exhibits increasing volatility levels and significant Value-at-Risk breaches near the start of July 2008 and then continuing into the first half of 2009.

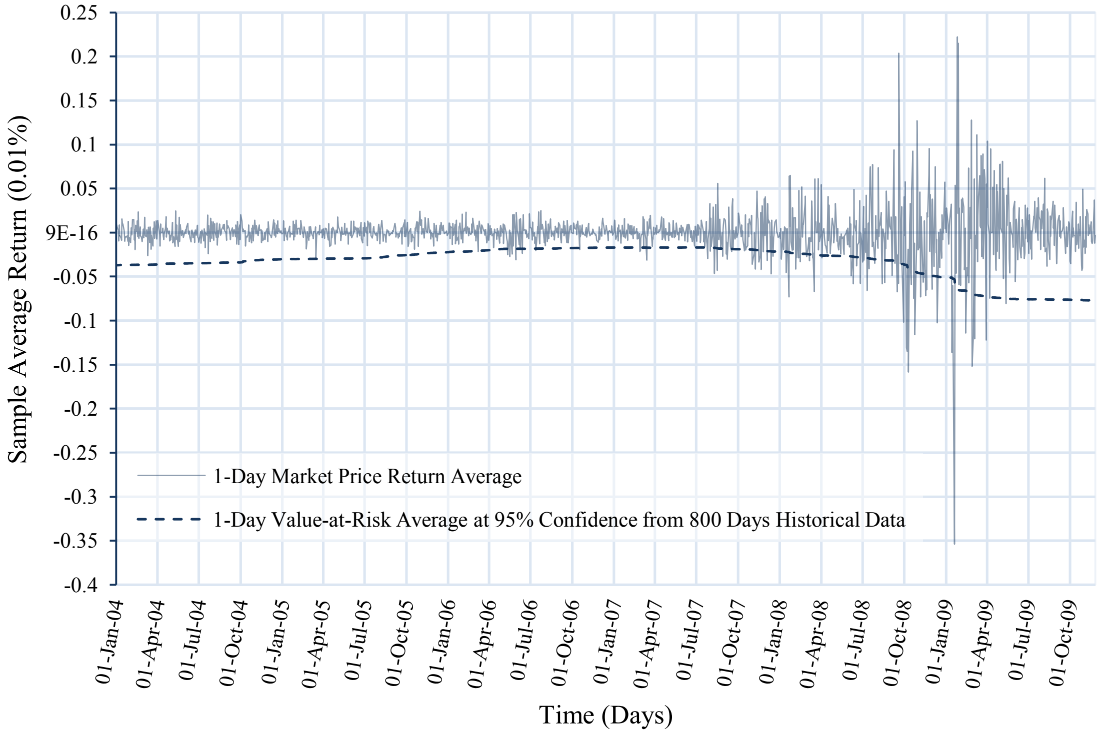

Figure 1.1 Plots of 1-Day Market Price Return and 1-Day Value-at-Risk for UK Banks from 2004 to 2009

Plot of the 1-day market price returns average for the banks in the LSE's UK banking sector (solid line). Plot of 1-day Value-at-Risk at the 95% confidence level (dashed line), from January 2004 to November 2009, using Monte Carlo Simulation Value-at-Risk modelled from 800 1-day historical market price returns with 1 million and one simulations.

Figures 1.2 to 1.5 provide, for the same LSE registered banks, charts with average Value-at-Risk plots for selected time horizons with corresponding market price returns. They also show that the banks, for the 2005 to 2009 time range, experienced market price return volatility. In addition, the plots show that there was volatility before 2005. However, these plots indicate that volatility levels were more significant after 2005 when compared to before. Examining Figures 1.1 to 1.5, purely on the basis to inform the firmwide risk management and banking regulatory frameworks, it would be difficult to argue against such a significantly gradual increase in volatility levels after March 2006 from being subject to further investigation.

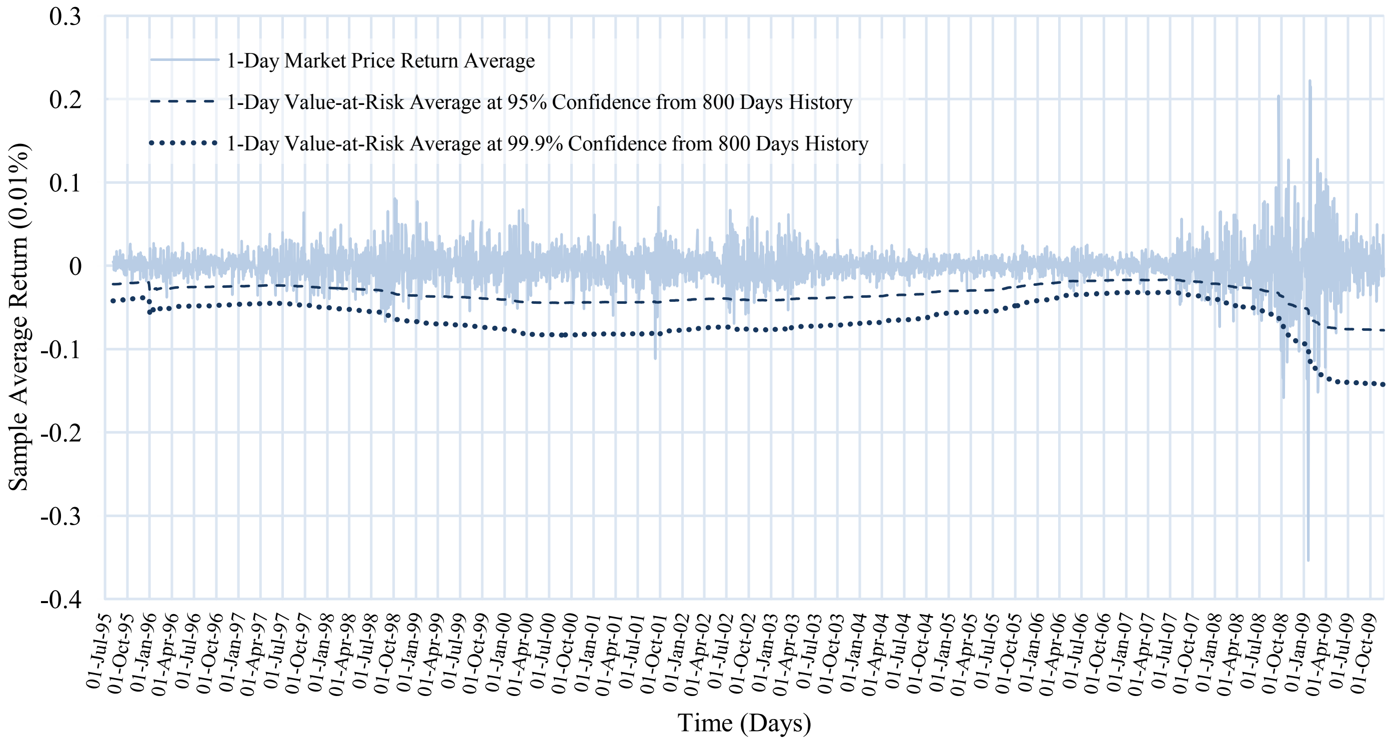

Figure 1.2 Plots of 1-Day Market Price Return and 1-Day Value-at-Risk for UK Banks from 1995 to 2009

Plot of the 1-day market price returns average for the banks in the LSE's UK banking sector (solid line). Plot of 1-day Value-at-Risk at the 95% confidence level (dashed line) and at the 99.9% confidence level (dotted line), from July 1995 to November 2009, using Monte Carlo Simulation Value-at-Risk modelled from 800 1-day historical market price returns with 1 million and one simulations.

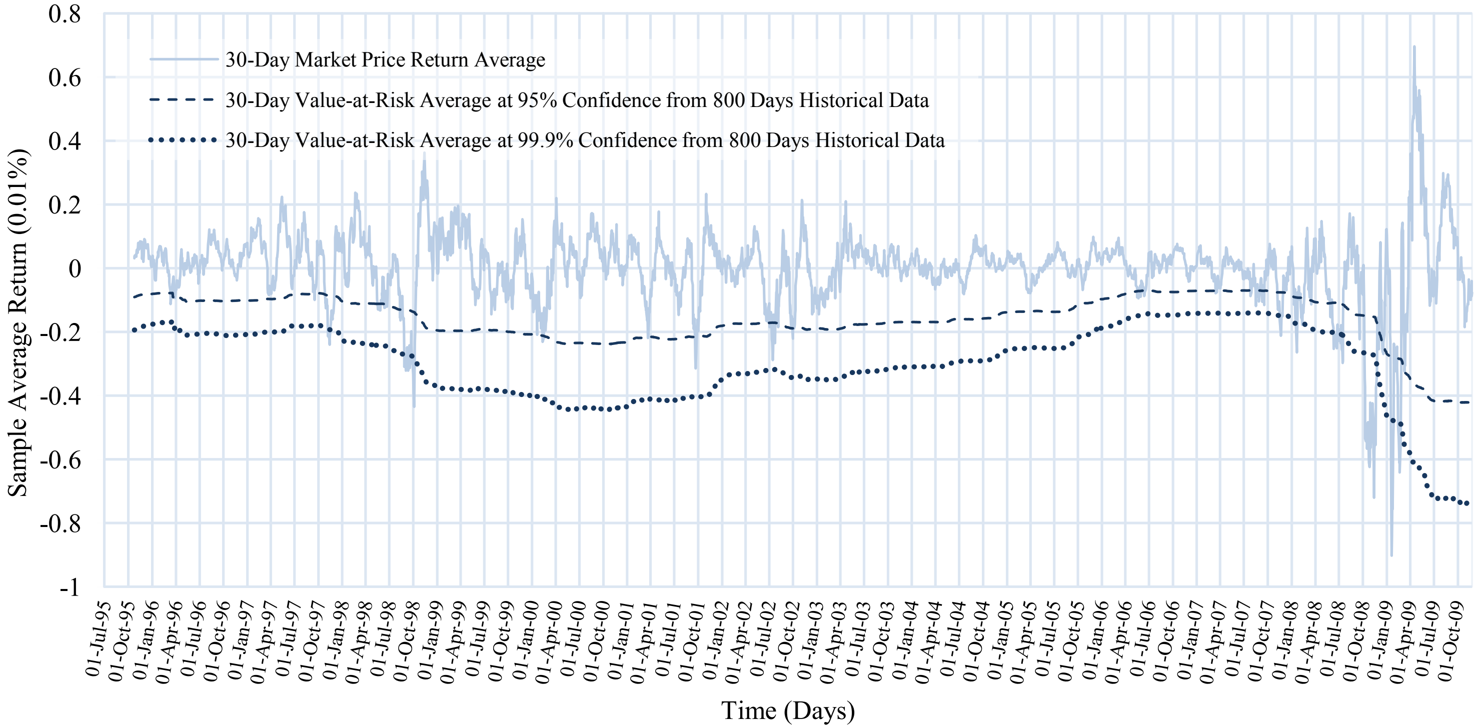

Figure 1.3 Plots of 30-Day Market Price Return and 30-Day Value-at-Risk for UK Banks from 1995 to 2009

Plot of the 30-day market price returns average for the banks in the LSE's UK banking sector (solid line). Plot of 30-day Value-at-Risk at the 95% confidence level (dashed line) and at the 99.9% confidence level (dotted line), from October 1995 to November 2009, using a Monte Carlo Simulation Value-at-Risk modelled from 800 30-day historical market price returns with 1 million and one simulations.

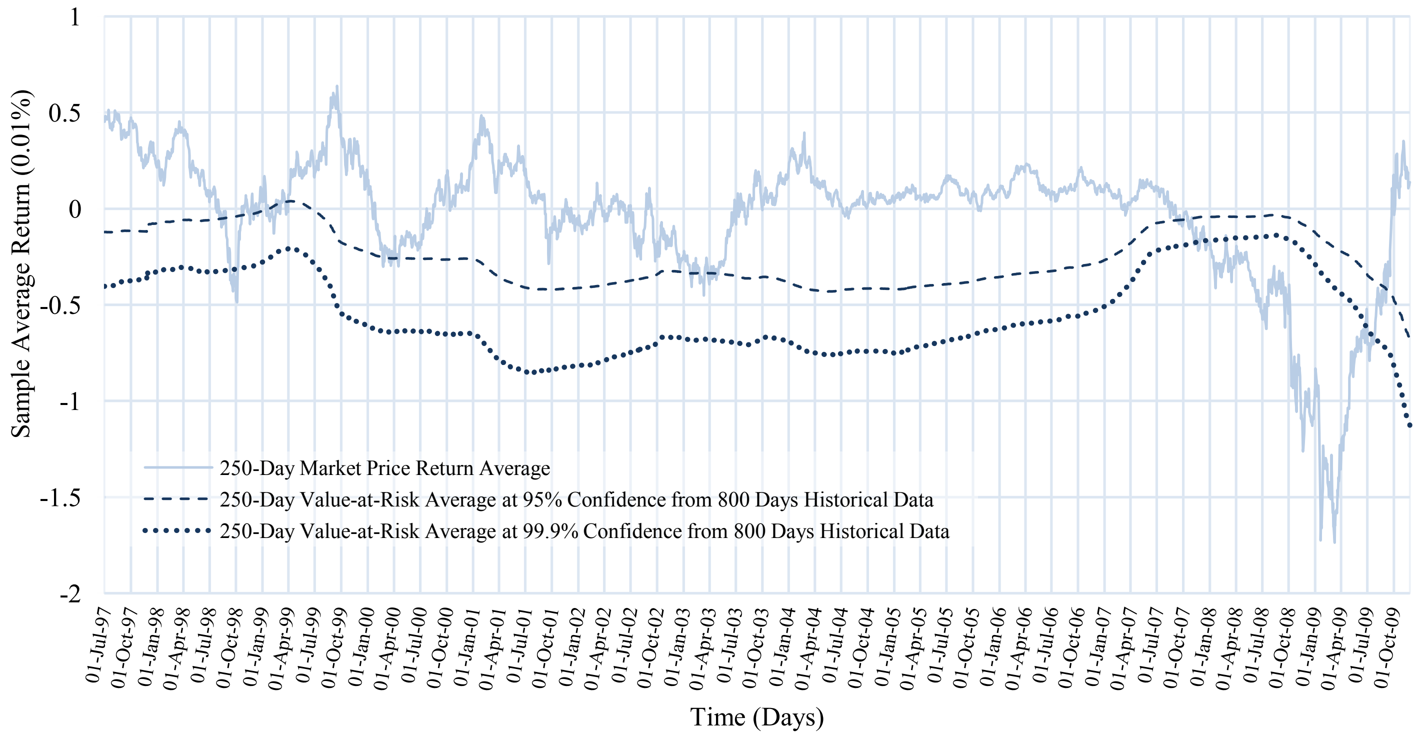

Figure 1.4 Plots of 250-Day Market Price Return and 250-Day Value-at-Risk for UK Banks from 1997 to 2009

Plot of the 250-day market price returns average for the banks in the LSE's UK banking sector (solid line). Plot of 250-day Value-at-Risk at the 95% confidence level (dashed line) and at the 99.9% confidence level (dotted line), from July 1997 to November 2009, using a Monte Carlo Simulation Value-at-Risk modelled from 800 250-day historical market price returns with 1 million and one simulations.

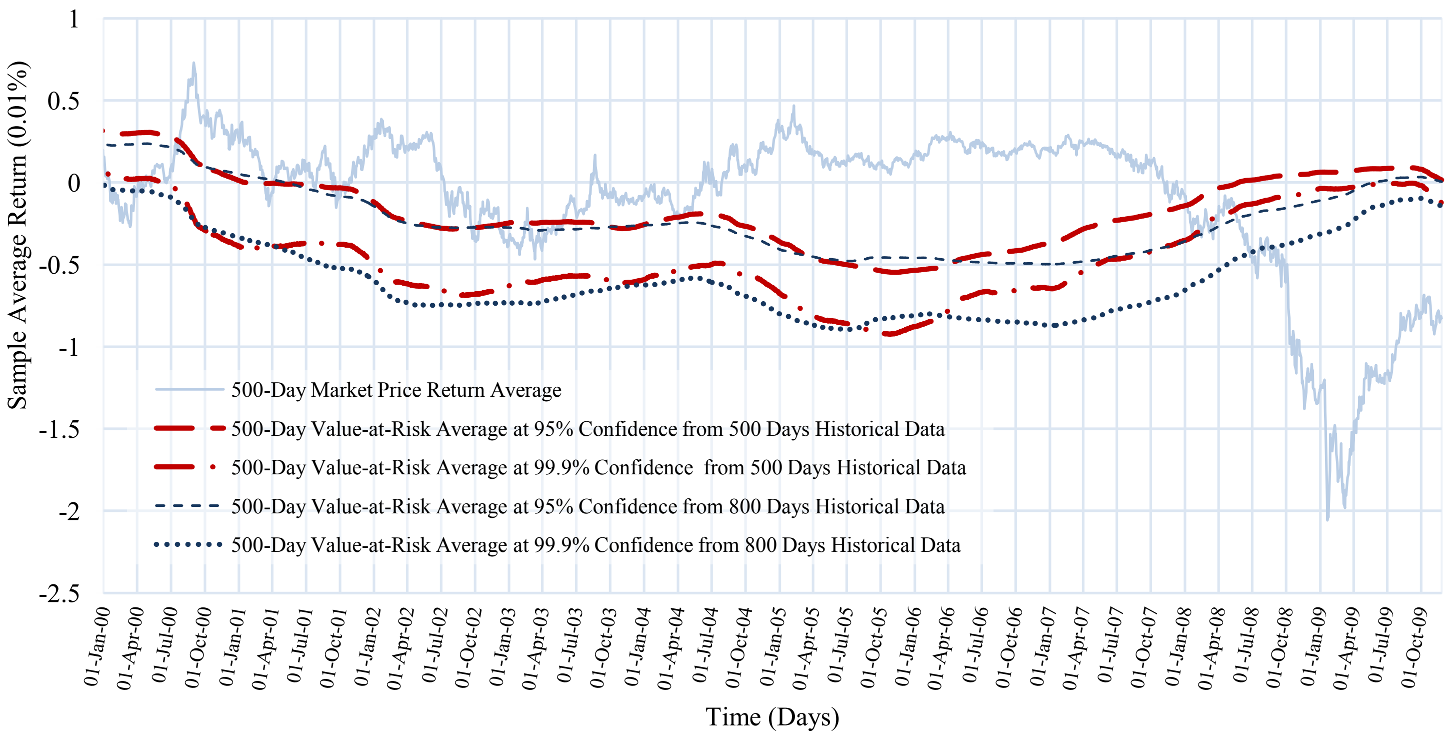

Figure 1.5 Plots of 500-Day Market Price Return and 500-Day Value-at-Risk for UK Banks from 2000 to 2009

Plot of the 500-day market price returns average for the banks in the LSE's UK banking sector (solid line). Plot of 500-day Value-at-Risk at the 95% confidence level (long dashed line), at the 99.9% confidence level (dot-dash line), at the 95% confidence level (dashed line) and at the 99.9% confidence level (dotted line), from January 2000 to November 2009, using a Monte Carlo Simulation Value-at-Risk modelled from 500 500-day and 800 500-day historical market price returns with 1 million and one simulations.

1.2 Research Problem

Observing Figures 1.1 to 1.5, as stated earlier, it is evident that significant levels of volatility are exhibited after the 2005 accounting change. This study investigates the problem of these increased levels of volatility, with the important aspect that such levels being contrary to the previously stated EC (2002) and IASB (2009) expectations. Specifically this study expects, at a minimum, market prices to follow the *semi-strong form* of the efficient market model (Fama 1965, 1970). That is to say, this study expects stock market price information to reflect accurately published accounting information. Within the context of risk management, this view is consistent with financial accounting deduced to having played the explicit accounting role.

It is noted that the levels of volatility shown in Figure 1.1 after July 2008 has infamously been attributed to the financial market conditions during September 2008, pertaining to the *visible* and well publicised *Chapter 11* filing by Lehman Brothers Holdings. The wider debate that has taken place recently has focused on the *invisible* cause of the volatility, and that the 2008 volatility is as a consequence to a complex sequence of cause and effect reactions arising from mortgage based derivative product trading and sales activity. These reactions resulting in individual bank and insurer book positions in these *collateralised* derivative products becoming exposed to uncertainty, and subsequently caused the capital markets to react to these exposures in the form of market price volatility.

Although, concerns had also been aired and evidence exhibited from European firms, that the application of the new accounting standards in 2005 would create volatility in the financial markets, it is difficult to decipher the specific role accounting took in the observed UK bank volatility shown in Figure 1.1. As stated previously, the general view this study takes is that accounting played the normally assumed explicit role and reported the observed volatility. Importantly, accounting's explicit role is expected to report the increase in volatility levels exhibited during 2008. It is from this view that the study examines deviations from this explicit role, and the level of these deviations quantifying the level of accounting's implicit role. This study deduces that if the level of *deviation* is significant, that is, if the level of the implicit role is significant, then the level of investor uncertainty would increase with the resulting financial market volatility.

From this basis, several explanations may be considered for the cause of the significant levels of volatility exhibited after 2005 in Figures 1.1 to 1.5. The first explanation, especially for before the second half of 2008, is that it is due to *normal* capital market activity and has no connection with the 2005 accounting change. The second explanation is that the accounting change provided a more transparent view of the bank's accounting figures with subsequent investor reactions creating the observed volatility. The first and second explanations are as a consequence of the explicit role of accounting with no implicit role being evident. The third explanation is that the accounting process applied after 2005 presented information that when compared to other available information is found to be *unexpected* or *biased*. This explanation is consistent with the implicit role of accounting with an insignificant level of influence from the explicit role. The fourth explanation is that an interrelated combination of the three above explanations has taken effect at differing levels.

As stated previously, this study approaches the investigation for the observed volatility from the basis of the accounting change. The previously stated EC (2002) and IASB (2009) expectations for the new accounting standards to exhibit a purely explicit role and *report only the temperature of the flame*, is first investigated by deducing if the observed volatility is purely as a consequence of normal capital market activity. Maintaining the remit for the accounting function as a purely explicit role, this study aims to deduce how effectively the accounting data reflected the market price variations. It is expected that closer the accounting data reports the observed market price changes, the more relevant and reliable would be the accounting data and therefore the higher the accounting quality than otherwise.

Aligned with the EC (2002) and IASB (2009) expectations, this study expects that after the 2005 accounting change there will be an increase in value relevance. It is expected that even during periods of increased levels of financial market price volatility that the new accounting standards remit will be evident by it exhibiting a purely explicit role; reporting results that reflect stock market prices even during volatile periods. Ideally, it is expected for the banks to show an increase in the level of value relevance, and thus higher *accounting quality*, after the 2005 accounting change when compared to before.

It is important to note that this study specifies and performs tests (see Chapter 3), and examines its results (see Chapter 4) and concludes its findings (see Chapter 5) based on evidence produced using the time variable. Specifically, the results are produced on a yearly basis and also based on three time periods. The three time periods are: 1992 to 2004 that produces results for before the 2005 IASB accounting change, and 1992 to 2007 and 1992 to 2008 that produces results for after the accounting change (see Chapter 3, Section 3.7.7). The latter two time periods examine the years 2007 and 2008 that exhibit increasing levels of market price volatility (see Figure 1.1).

This analysis approach, based on yearly and time range periods, provides a control for *time* by using the *time* variable, and thus effectively also provides a control for periods of observed market price volatility. As stated earlier in this section, during increased levels of market price volatility, it is expected that accounting information will exhibit an explicit role and reflect this increase in volatility (EC 2002, IASB 2009). Therefore, the results presented in this study that examine accounting quality, expects at a minimum, accounting quality levels to be similar after the 2005 accounting change compared to before. This expectation is maintained in this study even during periods of increased levels of financial market volatility as indicated from 2007 to 2009 in Figure 1.1.

To progress with this investigation, at this juncture it is imperative that the general methodological measurement approach applied in this study to measure accounting quality, and thus provide for a firm a measure of its level of exposure to accounting quality risk, is carefully introduced.

The general premise that this study applies in its investigation is that the accounting totals: total shareholders' equity, total assets, total liabilities and net income, provide information as to a measure of a firm's value from the financial statement's perspective. This study considers the accounting totals to provide a measure of the metaphorical *temperature of the flame*, where, as stated previously the *flame* is considered analogous to the *firm's value*. The general expectation is that the accounting standards applied by a firm in the preparation of its financial statements, and principally from an examination of the accounting totals, would provide an investor with a measure of the firm's value that is *accurate* and free from *bias*. In addition, the measure of the *change in an accounting total* for a given time period, termed in this study as the *accounting delta*, provides time relative information to quantify the accounting related growth of the firm's value over time. This study applies this *accounting delta* measure as its *accounting valuation* for the banks. However, this does not cover the full extent of the proposed premise.

In applying such an approach, a methodological question arises that asks: how is it possible to determine if the *accounting delta* reports a firm's value that is accurate and free from bias? Extending the Fama and French (2008) treatment of the book-to-market ratio, this question is addressed by introducing a second valuation for the same firm reported from the financial market's perspective. This valuation being simply the firm's stock market share price, termed the *market price*. This study considers the market price to be metaphorically analogous to the measure of the *true temperature of the flame*. In order to scale a firm's market price to its accounting delta, the change in market price is measured for the same time period applied to evaluate the accounting delta. The change in market price is termed the *market price delta* or the *market price return* measure or simply as the *market delta*.

Now, measuring for a firm, the change of one of its accounting totals, evaluated by the *accounting delta*, and comparing that change with the change in the market price, evaluated by the *market price delta*, in theory would provide investors with a measure of the firm's information bias, or more accurately its *valuation bias*[9]. The *valuation bias* is specified as the difference between the accounting valuation (*accounting delta*) and the financial market valuation (*market price delta*). This *valuation bias* is termed in this study for brevity as the *difference* or the *difference component*[10] (see Sections 3.2.3 and 3.2.5 that detail the measurement of the *difference component*). Thus, the greater the level of *difference* between the accounting delta and the market price delta, the greater the firm's accounting and market price *valuation bias*. Conversely, the lower this level of *difference*, the lower the firm's *valuation bias*.

Directing focus on the *delta* measures, this study terms the *difference* between the accounting delta and the market price delta as the *accounting totals to market price*

[9] The term *valuation bias* applied in this study refers to *information bias* unless detailed otherwise.

[10] The term *difference* or *difference component* applied in this study represents a vector measure (measuring the magnitude and direction) calculated from the difference between one variable moving in one direction and another variable moving in another direction.

relative delta or, as the *accounting to market price relative delta*. This level of *difference*, measured by the *difference component*, now simply translates to the level reported by the previously introduced *relative delta measure*.

Based on this approach, specifying the level of *difference* to be a measure of value relevance and thus *accounting quality*, it would be reasonable to expect the level of *difference* to be lower for higher quality value relevant accounting data than otherwise. Applying this same reasoning to determine accounting quality for the accounting change, it would be reasonable to expect that the level of *difference* for the adopting banks is the same or less (tending to zero) after 2005 when compared to the *difference* before. In a metaphorical sense, it is expected that the accounting totals would provide a more accurate measure of the *flame's temperature* after the 2005 change when compared to before. Even during volatile market behaviour, such an expectation would be close to the ideal sought by the EC regulations and the IASB accounting framework. On this basis, this study directs its research question to ask:

Does accounting quality improve for UK banks that adopted the IFRS accounting standards in 2005? That is, does the difference between the change in accounting totals and the change in market price decrease for UK banks that adopted the IFRS accounting standards in 2005 when compared to before the adoption?

1.3 Overview of the Research Methodology

In order to achieve this study's aims and objectives in accordance with the research question, the following null hypothesis is tested:

Accounting quality in UK banks was not affected by the adoption of the IFRS accounting standards in 2005. For the UK banks that adopted the new accounting standards in 2005, there is no significant difference between the change in accounting totals and the change in market price after 2005 when compared to before.

To test the null hypothesis this study applies the earlier declared hypothesis based deductive methodology, combined with the falsification theory (Popper 1992).

Within this methodological framework, the null hypothesis is developed into four *detailed null hypotheses*. The *detailed null hypotheses* test the *difference between the change in accounting totals and the change in market price* by applying the relative delta measure for the accounting totals: total shareholders' equity, total assets, total liabilities and net income with the market price (see Section 3.3.2). The aim being to gather evidence from the four *detailed null hypotheses* to provide strength to either verify or falsify the null hypothesis.

To test the *detailed null hypotheses* the sample of the five main banks listed in the LSE bank sector, termed the *Primary sample*, is surveyed and data collected from 1992 to 2009. Market price data is collected on a daily basis, and accounting total information is collected on a yearly basis.

With the objective to increase the Primary sample a second sample, termed the *Secondary sample*, is selected and surveyed. The Secondary sample consisted of 28 banking related financial services firms listed in the LSE that also changed to the IASB accounting standards in 2005. After quality assurance and data refining, the number of firms tested in the Secondary sample comprised 11 firms. The tests that are applied to the Primary sample are also applied to the Secondary sample, and also to a sample that consists of both the primary and the secondary sample firms, termed the *Primary and Secondary sample*.

As a control for the 2005 accounting change, 20 banking related financial services firms listed in the LSE, termed the *Control group*, are selected and surveyed. The important contrast between the *Primary sample firms* and the *Secondary sample firms* and the *Control group firms* is that the Control group firms did not adopt the new accounting standards in 2005. After quality assurance and data refining the number of firms tested in the Control group consisted of 12 firms. With the objective to determine evidence of materially and statistically significant reactions before and after the 2005 accounting change, the tests applied to the Primary sample firms and the Secondary sample firms are applied to the Control group.

To support this research's null hypothesis, it is expected that the tests applied to the Primary sample and the Secondary sample firms would produce results that exhibit similar levels for the *difference component* after the 2005 accounting change compared to before. In addition, the samples are expected to exhibit similar, or ideally lower, *differences* compared to the Control group after the 2005 accounting change.

Guided by this general analysis of results that is based on sample reactions for before and after the 2005 accounting change, and the sample reactions compared to the control group, this study proceeds as follows.

For the Primary sample, the Secondary sample, the Primary and Secondary sample and the Control group this study gathers evidence based on the market price returns and Value-at-Risk reactions for before and after 2005. First, for the samples and the control group[11] market price return and distribution characteristics are analysed together with the variance-covariance Value-at-Risk levels. Then, the Value-at-Risk levels are measured by applying the three primary VaR models: variance-covariance, historical and Monte Carlo simulation. From these measurements, the historical Value-at-Risk model is tested and the Historical Value-at-Risk Actual measure defined. Unless otherwise specified, for the remainder of the tests, the Historical Value-at-Risk Actual that is calculated using a *zero-day* time horizon is applied to represent this study's measure of *market price Value-at-Risk*.

To determine the market price return and Value-at-Risk reactions of the samples and the control group to economic conditions, the Gross Domestic Product (GDP) indicator is selected and its levels are analysed using time series regression. To determine reactions to general market conditions selected stock market indices, selected short-term interest rates, selected treasury Government bond rates and selected foreign exchange rates are tested with the samples and the control group market price returns and Value-at-Risk, again using time series regression.

After this series of tests, the study proceeds by introducing the accounting totals. The accounting totals are tested to determine levels of material change before and after 2005 compared to both the market price levels and Value-at-Risk levels. In addition, statistical significance is evaluated using correlation analysis. Then the change in

[11] The term 'samples' is used in this study to reference the three samples: the Primary sample, the Secondary sample and the Primary and Secondary sample. The terms 'samples and control group', 'the samples and the control group', 'samples' and 'control group' are at times contextually applied in this study primarily as technical terms.

accounting totals (accounting *delta*) is tested with the change in market price (market price *delta*) and Value-at-Risk to determine material and statistical significance, where statistical significance is again evaluated using correlation analysis.

The accounting delta and market price delta are then analysed using cross-sectional and time series regressions to test for statistically significant reactions for before and after the 2005 change. The study then proceeds to test and compare the levels of *difference* produced from the accounting to market price relative delta measure for before and after 2005. The object of this test is to determine the level of material significance using the levels of the *difference component*. The relative delta is also analysed for each bank in the Primary sample to determine the individual bank's accounting to market price reactions for before and after the accounting change. Importantly, this latter test is performed with the objective to provide direct evidence to strengthen or weaken the detailed null hypotheses.

The relative delta measures are then tested with Value-at-Risk using time series and cross-sectional regressions to determine the statistical significance for the detailed null hypotheses. Time series regressions are also used to determine each individual bank's accounting to market price relative delta reactions to Value-at-Risk. Given the nature of the relative delta measure, it would be expected that to verify a single detailed null hypothesis, a statistically significant reaction between the corresponding relative delta measure and Value-at-Risk after the 2005 accounting change would not be evident.
The *relative delta measure* and the *market price Value-at-Risk* are evaluated to provide an estimate for the *accounting Value-at-Risk* levels. The study then examines Value-at-Risk levels for specified time periods by comparing the *accounting Value-at-Risk* estimates with the *market price Value-at-Risk*. The expectation would be that both the accounting Value-at-Risk and market price Value-at-Risk would report similar levels for before the 2005 change when compared to after the change. The accounting Value-at-Risk and market price Value-at-Risk levels are also analysed at the individual bank level. This analysis is performed to determine if the Value-at-Risk remain at equivalent levels for the banks before and after the accounting change.

Finally, the *regulatory relative delta* is evaluated for each bank. The *regulatory relative delta* is computed based on a series of threshold levels to determine the level of adjustment applied to the Basel (2011) 8% minimum regulatory capital requirement[12]. The adjusted levels are then analysed for before and after 2005 to determine whether the minimum capital has adjusted up or down. If improved accounting quality is to be evident after 2005 then this study expects that the adjusted minimum capital requirement levels for the banks to be less after 2005 compared to before.

1.4 Thesis Organisation

This thesis, in Chapter 2, provides a literature review that introduces its motivations and previous research conducted in the area of this study. The background to the 2005 accounting change is introduced with its motivations and aims. The studies that have tested the accounting change before the adoption event and its effects during and after this event are introduced. Literature surrounding risk management is presented from the point of view of developing the characteristics of the relative delta measure with reference to the Fama and French (2008) time dependent treatment of the book-to-market ratio. The financial statement accounting totals measured in this thesis are introduced. The relationships between accounting quality, value relevance, the relative delta measure and other key measures applied in this study are then formally introduced. Chapter 2 then proceeds to introduce the Basel risk management framework from the perspective of risk weighted assets and its application of the Value-at-Risk risk measurement approach. The Basel framework is referenced as a prelude to introducing the *relative delta* measure in a regulatory capital context, referred to as the *regulatory relative delta measurement framework*. The variance-covariance, historical and Monte Carlo simulation Value-at-Risk approaches that are applied in this study are then discussed in detail. The connection between Value-at-Risk and stress testing, and backtesting are introduced. The chapter then proceeds to discuss the technology requirements necessary to implement the relative delta measure and the regulatory relative delta measure as well as the accounting Value-at-Risk measure.

Guided by the hypothetico-deductive falsification methodological approach, Chapter 3 details the research methodology applied in this study. Chapter 3 proceeds by detailing and examining the research question. The null hypothesis tested in this study is

[12] From 1992 to 2009, the maximum time range applied for analysis in this study, the total minimum capital requirement under the Basel I and Basel II regulatory frameworks was at 8% (Basel 1998, Basel 2006). This 8% minimum total capital requirement remains in effect for the Basel III framework from 2013 until 2019 (Basel 2011).

specified. With the aim to provide a framework to test the null hypothesis the set of *detailed null hypotheses* referred to earlier in this chapter are also specified. Then the sample selection criteria are detailed, and the banks and firms selected for the Primary sample, the Secondary sample and the Control group are presented. The data collection and time range criteria are then specified. Chapter 3 then proceeds to detail the quantitative and analytical methods applied in this study to test the null hypothesis.

Chapter 4 presents the analysis and results for the samples and the control group. This chapter generally presents relative percentage changes based on the analysis and results for before and after the 2005 accounting change. The first part of Chapter 4 presents analysis and summary results based on detailed results for the market price return, Value-at-Risk and the relative delta measure. In addition, an analysis of summary results for tests based on GDP and general market conditions is presented. The second part of the chapter presents analysis and detailed results based on the *change in accounting totals*, *change in market price* and the *relative delta*. Analysis and detailed results for the banks in the Primary sample are presented based on the regulatory relative delta measure. Chapter 4 concludes by proposing a bank technology framework to enable the measurement of the *relative delta*, *regulatory relative delta* and *accounting Value-at-Risk*.

Chapter 5 presents this study's conclusion from the basis of a series of conclusive statements that test the level of verifiability or falsifiability of the null hypothesis. In addition, the development and application of the relative delta and regulatory relative delta measures are noted as an extension to the Fama and French (2008) time dependent treatment of the book-to-market ratio. The Fama and French (2008) baseline regression test and its historical inference to this study are also presented. Thereafter, concluding discussions are presented regarding the technology framework proposed in this study to inform the financial system. Chapter 5 then presents implications that result from this thesis. Possible limitations to this thesis are then discussed. This chapter then concludes by presenting an axiom based on the findings from this research.

Chapter 6 proposes future work to extend this research, and future work that may be considered in this study's research area.

Chapter 7 provides the references for this research.

1.5 Thesis Contributions

This thesis proposes a number of distinct contributions to knowledge by extending the literature surrounding the 2005 accounting change, and extending banking regulatory policy. This research also proposes recommendations to extend firmwide risk management policy and financial accounting policy. In addition, recommendations are proposed to extend the banking technology framework.

Current research addresses the effects of the 2005 IASB accounting standards adoption event for European firms. This thesis extends this current research by focusing on the UK banking sector.

This study introduces a specification for an accounting Value-at-Risk measurement in Section 3.9.4, Appendix H and Appendix I. In Appendix K, it is proposed that this measure together with the market price Value-at-Risk measure contribute to the current regulatory and firmwide risk management practice. This study proposes that the measure of the accounting Value-at-Risk, when compared to the market price Value-at-Risk, provides a well tested framework to inform the risk management practice of *bias* between information from the accounting function and information sourced from the financial markets.

This study extends the Fama and French (2008) time dependent treatment of the book-to-market ratio by developing the *accounting to market price relative delta* measure. The relative delta measure is introduced in this chapter and specified in Section 2.7 and Appendix C and developed in Section 3.9.2, Appendix B and Appendix E. The relative delta measure is proposed in this study to measure for a firm or a portfolio of firms its level of accounting data value relevance, and thus its level of accounting quality. The relative delta measure is proposed to also measure for a firm or a portfolio its level of exposure to financial distress risk arising from the change in total shareholders' equity and the change in market price for a specified time period. This study then extends this measurement to address *financial distress risk* arising from the relationship between the change in market price and the change in the accounting totals: total assets, total liabilities and net income. In effect, this study proposes a system of relative delta measures that monitor and determine the level of exposure to financial distress risk for a firm or a portfolio of firms. Importantly, it is proposed that the relative delta measure is applied to provide information to direct investigation to equity, assets, liabilities or net income items to mitigate financial distress risk and accounting quality risk.

This study proposes to contribute to regulatory policy and to firmwide risk management practices by recommending the implementation of the system of relative delta measures at the regulatory and firm level. In keeping with the characteristics of the system of relative deltas, the purpose of implementing such a system would be to inform regulators and risk controllers, the level of a firm's exposure to financial distress risk, as well as accounting quality risk. In doing so, it would provide information to direct action to mitigate such risks. The regulatory relative delta, that is introduced and specified in Section 3.9.6, Appendix K and Appendix L, is also proposed in this study to contribute to the regulatory policy, specifically to the Basel regulatory framework. The regulatory relative delta is proposed to provide a mechanism to monitor changes to the minimum regulatory capital level. Section 3.9.6 shows that the *regulatory relative delta* extends the *relative delta* by specifying a special implementation of the system of *relative delta* measures.

The relative delta and regulatory relative delta measures are proposed in this study to inform the regulatory and firmwide risk management levels. However, it is evident that the measures may also be proposed to make a contribution to accounting policy, in that the measures are monitored by accounting standards authorities to determine how the financial markets react to the interpretation and application of adopted financial accounting standards.

This study proposes to contribute to the regulatory and banking technology framework. Section 4.11 and Figure 4.1 presents a proposed technology architecture to measure the accounting to market price relative delta, regulatory relative delta and the accounting Value-at-Risk. The technology framework is specified to enable the updating of accounting information on a real-time or close to real time basis. Such an architecture would provide accounting information at a frequency that is comparable to the *currently available* real-time market price updates.

This study proposes to also contribute to the regression analysis approach by introducing in Appendix M.5.2 a further measurement to assess the accuracy of the coefficient of determination R^2. The coefficient R^2 for a regression model measures how well the independent variable explains the dependent variable. This research determines that for a regression model to be accurate, the *independent variable* and the *residue variable* must be randomly distributed. Utilising the Pearson product-moment correlation coefficient, this research proposes and measures the correlation between the independent variable and the residue variable to evaluate the relationship's randomness. If the correlation coefficient is approximately between 0.5 and -0.5 then it is concluded that the R^2 measure is a valid measure for the regression model's strength. If the correlation coefficient is significantly above or below zero (greater than 0.5 or less than -0.5) the independent variable's and the residue variable's relationship may not be random, and therefore further study of the regression relationship may be considered. This research attempts to implement, with limited scope, this proposed correlation measure to determine the accuracy of the reported R^2 coefficient.

In addition, a contribution to the risk management practice is proposed by introducing a new algorithm and smoothing formula to calculate the standard normal inverse - cumulative distribution function (CDF). The Monte Carlo simulation Value-at-Risk measure is dependent on an algorithm to generate a *random* stochastic variable. This stochastic variable is primarily based on a random number between 0 (zero) and 1 and modelled using the standard normal inverse CDF. Recent work has determined that there is no closed form solution for the standard normal inverse CDF. Detailed in Appendix N.6.2 and N.6.3, this research specifies and develops, for the Monte Carlo simulation Value-at-Risk model, a new algorithm and smoothing formula to calculate the standard normal inverse CDF. This standard normal inverse CDF is developed to generate a stochastic variable with mean zero and standard deviation of 1.0.

1.6 Summary

This chapter has introduced the explicit and implicit roles that *accounting* plays in the general context of risk management. This chapter also highlights the difficulty in recognising and quantifying accounting's implicit role, this role being identified as creating the problems of reduced accounting quality and market price volatility. The 2005 IASB financial accounting standards adoption by the UK banks is introduced as the event this study examines. Such an examination is introduced to determine the level of the explicit role that accounting played after the accounting change compared to before. This study examines deviation from this explicit role to be evidence of accounting's implicit role. In addition, this study deduces evidence to determine if this implicit role shows any relationship to risks that are exogenous to those *normally* faced by the banks examined. The principle measurements applied in this study are then named. The relative delta measure is introduced from its development by extending the Fama and French (2008) time dependent treatment of the book-to-market ratio. The accounting Value-at-Risk and regulatory relative delta measures are also introduced together with an introduction to the methodological approach this study applies.

This chapter has introduced the background to the research problem. Literature that revealed for European firms a reduction in accounting quality after adopting the new accounting standards in 2005 are also introduced. Attention is drawn to this reduction as evidence for the implicit role that accounting plays. Charts are also presented that show for the banks' market price returns, materially significant levels of volatility and Value-at-Risk breaches after the 2005 accounting change. The research problem is formally introduced, in that the requirements from the EC and the IASB for the 2005 accounting change are observed to be falling short of expectations. From the context of this problem, the research question is introduced. Then the null hypothesis and a more detailed overview of the methodology applied to address the research question are presented. This chapter provides a summary of the thesis organisation and presents an overview of the contributions that this research expects to make to knowledge. The areas this research expects to contribute to include the following frameworks: regulatory and firmwide risk management, accounting standards, and regulatory and banking technology. In addition, this study intends to contribute to the regression analysis approach.

Chapter 2 Literature Review

2.1 Chapter Introduction

This chapter presents the background and a review of literature that addresses this research. First, an overview of relevant background literature is presented. Then a background and review of literature examining the change in accounting standards that took place in 2005 from the UK GAAP's ASB accounting standards to the IASB's IFRS accounting standards is provided. Thereafter, this chapter provides a review of literature for measurement of market risk, followed by an examination of the book-to-market ratio and then formally introduces the *relative delta measure*. The relational characteristics of accounting quality, value relevance, the relative delta measure and other key measures applied in this study are then formally introduced. The literature pertaining to the Basel regulatory framework and the Value-at-Risk measure is then reviewed. This chapter concludes by reviewing the potential effect of the Value-at-Risk and the *relative delta measure* on the current banking and regulatory technology framework.

2.2 Research Background

The purpose of accounting as accepted by the accounting profession, Beaver, Kettler and Scholes (1970) observe, is to facilitate investor decision making. The IASB states that the principal purpose of *the accounting framework* is to present information that is most useful for economic decision making (IASB 2011). It could be contended that with the power to affect the actions of economic agents, the rules of accounting that govern reporting of financial statements must be unbiased and neutral to both financial markets and its agents. If neutrality is not evident, it may be maintained that, economic agents, financial markets, financial instruments, and ultimately governments and regions, may become exposed to unnecessary risks.

Exposure to risks are also compounded by the fact that financial markets are extremely dynamic, in that new markets open, new financial instrument products are designed and created, and new clients begin dealing, trading and borrowing (Banks 2002, Merton 1995, Dosi and Moretto 2003, Wang, Wen and Yang 2010, Culp 2010). With improvements in computer systems and telecommunication technology, advances in finance theory, deregulation and globalisation, this dynamism will continue to accelerate (Banks 2002, Merton 1995, Merton and Bodie 1996[13]). Firms creating, innovating or using new instruments or employing new risk and financing techniques are likely to remain active in new structures (Banks 2002). Determined by Merton and Bodie (1996), a fundamental part of the infrastructure that will require significant change to accommodate this future financial innovation is the financial accounting system.

Aimed at improving the financial system, the IASB was formed in 1973 (IASB 2009, Alfredson, Leo, Picker, Pacter, Radford and Wise 2007). The IASB is aware of the increase in the number and complexity of existing and new financial instrument products traded in the financial markets (IASB1 2008). The IASB also acknowledges that issues exist within the financial system to recognise and measure some complex financial instruments, resulting in accounting standards that are unable to report effectively financial instruments (IASB1 2008). Asserted by Merton and Bodie (1996), an inability for a financial accounting system to report financial instruments has the potential to affect significantly the financial markets, the risk management system and the banking regulatory system.

Merton and Bodie (1996) stated that one of the key public-policy issues facing the global financial system and the international regulatory and supervisory architecture is the requirement to recognise and measure all financial instruments on the balance sheet. The Chartered Financial Analysts (CFA) Institute also maintained that any standard on accounting for derivative financial instruments and hedging activities, should apply to all derivative instruments, and that these derivatives should have a method to be recognised on the balance sheet (CFA 1997).

Merton and Bodie assert that banks and other financial institutions are increasingly having large and varied exposures to financial instruments that are '*off-the balance sheet*' (Merton and Bodie 1996, p 19). They note that although off-balance sheet contracts like interest-rate swaps and futures contracts have no initial value, they can have an immediate and significant impact on the risk exposure of the various assets and

[13] The referenced paper is based on Chapters 1 and 8 of '*The Global Financial System: A Functional Perspective*' by Dwight B. Crane, Zvi Bodie, Kenneth A. Froot, Scott P. Mason, Robert C. Merton, Andre F. Perold, Erik Sirri and Peter Tufano (1995).

liabilities that are on the balance sheet. They determine that firms may use off-balance sheet contractual arrangements such as derivative financial instruments, to protect information from outsiders. At times for some firms, protecting information may be a primary motive, but the more frequent and widespread reason that these '*zero-value*' contractuals are off-balance sheet is that the accounting framework lacks a system to disclose them (Merton and Bodie 1996, p 19).

In addition to Merton and Bodies' (1996) work, off-balance sheet accounting has been the focus of much attention and is referenced by works that include Guan and Chen, W (1998), Monson (2001), O'Haver (2003), Barlas, Madison, Randall and Verschoor (2003), Humphreys (2004), Freire and Figueiredo (2005), Coffee (2005), Cunningham (2005), Chen, Y (2006), Corner (2006), Langley (2006), Mountain (2008), and Lander and Auger (2008).

An article based on the prepared remarks by Randall Kroszner, the Federal Reserve Board governor (from 2006 to 2009) addressing the Global Association of Risk Management Professionals (SI 2008), affirmed the importance of the work on off-balance sheet reporting. Kroszner stated that a firm's true risk exposure requires examining financial instrument risks that are reported on the accounting balance sheet, but also instruments that are reported off-balance sheet. Kroszner determines that off-balance sheet accounting of risk exposures are sometimes more difficult to identify and often not so easy to quantify. As stated by Merton and Bodie (1996), major changes in accounting structure and methodology are required to address such financial instrument accounting inadequacies. In particular, Merton and Bodie declare, financial accounting needs fundamental revisions and requires a specialised new branch called 'risk accounting' (Merton and Bodie 1996, page 19).

As stated earlier, during the financial reporting periods, prior to and including the year ending 31st of December 2004, UK firms prepared and presented financial statements in accordance with the accounting standards accepted under the UK GAAP. Beginning 1st of January 2005, UK firms adopted and reported financial statements in accordance with the IASB framework's IFRS accounting standards (IASB 2009). UK firms under mandatory European Union Regulations adopted the IASB framework's accounting standards for subsequent reporting periods (EC 2002, IASB 2009, Elliot, B and Elliot, J 2008).

On the 1st of January 2005, firms within the banking and finance industries applied four key IFRS accounting standards principally aimed at financial instrument reporting in financial statements. These standards were applied as part of the transitional provisions under the IASB's IFRS accounting standard titled *First-time Adoption of International Financial Reporting Standards*, referred to as IFRS 1 (IASB 2009). The four key accounting standards applied are the following:

1) International Financial Reporting Standard 4: *Insurance Contracts*, referred to as IFRS 4.

2) International Financial Reporting Standard 7: Financial Instruments: *Disclosures*, referred to as IFRS 7.

3) International Accounting Standard 32: *Financial Instruments: Presentation*, referred to as IAS 32.

4) International Accounting Standard 39: *Financial Instruments: Recognition and Measurement*, referred to as IAS 39[14].

Reported by Walton (2004) prior to the IASB accounting standards adoption event in 2005, dissenting views from European adopters existed. The primary basis of opposition, Walton (2004) and Armstrong et al. (2010) observed, was concern that addressed the requirements for reporting financial instrument under the IASB's IAS 39 standard. The CFA Institute, in recognition of financial instrument accounting issues, strongly supported the IASB's 2008 (IASB1 2008) discussion paper entitled *Reducing Complexity in Reporting Financial Instruments* (Wild and Poole 2008).

During the IASB accounting standards adoption in 2005, studies conducted by Platikanova and Nobes (2006), Paananen and Lin (2009) and Morais and Curto (2008) corroborated the concerns reported by Walton (2004), IASB1 (2008) and Wild and

[14] In November 2009 and October 2010 portions of the IAS 39 accounting standard were replaced by the International Financial Reporting Standard 9: *Financial Instruments*, referred to as IFRS 9. It is the intent of the IASB to replace ultimately the IAS 39 standard in its entirety with the IFRS 9 standard (IASB 2011).

Poole (2008). In that, they observed a decrease in the value relevance of accounting information after the adoption of the IASB accounting standards in 2005.

Examination by Walton (2004) prior to the IASB accounting standards adoption in 2005, determined that one primary difference between the IASB accounting standards and the previous standards was the recognition and measurement of derivative financial instruments at *fair value*. Preceding reporting standards maintained a more static accounting model for derivative accounting whilst the IASB accounting standards advocate a more dynamic recognition of derivative instruments based on fair value accounting (Walton 2004).

The fair value accounting method based on *market value*, or more accurately *market price*, has its supporters (IASB 2009, Walton and Aerts 2006, Leone 2008), as well as those who felt that fair value does not necessarily represent an un-biased view (Walton and Aerts 2006, Cheney 2008, Leone 2008). The latter concern may be highlighted by the supposition that prices quoted on financial markets may fluctuate rapidly on a day to day basis, and to utilise market based valuation in the accounting system would cause 'gratuitous instability', instead of 'reflecting long term economic value' (Walton and Aerts 2006, p 476). Cheney (2008) also states that fair value accounting used for reporting some financial instruments, has given rise to a global controversy in that the fair value method may be causing volatility in securities and credit markets. Trade groups representing the international banking community, as reported by Leone (2008), had also expressed concerns regarding using only the fair value method of accounting, preferring a mixed-attribute model of reporting. The mixed-attribute accounting model, applies the fair value method for financial instruments held for trading purposes, and historical cost calculations for assets and liabilities held-to-maturity, or based around long-term trading (Leone 2008).

However, reported in the same article by Leone (2008) a poll by the CFA Institute found that 74% of investment professionals thought fair value requirements for reporting financial instruments improved general market integrity. Meanwhile, 79% of investors polled found the fair value method improved transparency, and contributed to the investor understanding of the reporting institution's risk profile.

The IASB stipulates financial instruments are to be valued using the fair value method under the *fair value option* criteria, and also that financial instruments used for hedging activity are to be treated under the practice of hedge accounting (IASB 2009). However, as reported by Walton and Aerts (2006), Cheney (2008) and Leone (2008), such attempts at implementing the fair value and the hedge accounting methods have been met with critical opposition. In that, the fair value treatment being attributed to increases in financial instrument price volatility levels.

From the risk management perspective, it may be contended that firmwide risk management systems and approaches are not tuned to specifically deal with financial risks attributed to effects that arise from the application of, and changes in, accounting standards. The book-to-market effect specified by Fama and French (1992, 2008), Peterkort and Nielsen (2005) and Bodie, Kane and Marcus (2002) and the book-to-market delta effect detailed by Fama and French (2008) and developed in this study as the relative delta measure, have provided evidence to be an effective measure of a firm's exposure to financial distress risk. However, the book-to-market effect assigned to emanate from the level of difference attributed to the accounting measure - book equity (or, as applied in this study, *total equity*), and the market measure - stock market price, has not received attention and thus does not feature prominently in the contemporary risk management framework. Contemporary risk management systems are tuned to be more reactive to market risks arising from stock market price risks, interest rate risks and foreign exchange risks (JPMorgan Chase and Reuters 1996). The assertion for risk management systems to also monitor and manage financial distress risk may be strengthened by examining evidence reported by Platikanova and Nobes (2006) and Paananen and Lin (2009) that strongly suggest stock market price volatility may be reactive to financial distress risk.

The regulatory framework is however better aligned to monitor and manage risks arising from the accounting and market relationship. The Basel (2011) regulatory framework is currently aimed at being highly reactive to credit risks and market risks as well as operational risks. The Basel regulatory framework centers on risk weights that are applied to *balance sheet* assets. The risk weights act the same way as risk premiums and adjust asset values based on the asset instrument category. Although the Basel regulatory framework has a stronger relation to accounting information than firmwide risk management systems, it does not adjust for potential risks arising from the accounting information itself.

Contrary to the expectations of the processes and frameworks implemented by accounting and regulatory bodies (EC 2002, IASB 2009), the studies by Platikanova and Nobes (2006), Paananen and Lin (2009), and Morais and Curto (2008) highlight that a deficiency in accounting information arose in the financial system during the IASB accounting standards adoption event in 2005. A deficiency observed to be maintained for the subsequent years (Paananen and Lin 2009).

This study strengthens its justification to test its null hypothesis presented in Section 3.3.1, with the view to determine if the financial system deficiencies declared by Merton and Bodie (1996), the CFA Institute (1997), Walton and Aerts (2006), Cheney (2008) and Leone (2008), and the financial system deficiencies observed by Platikanova and Nobes (2006), Paananen and Lin (2009), and Morais and Curto (2008) are evident for the UK banks after the 2005 accounting change when compared to before.

The following sections provide a background and a further review of literature that examine the change in accounting standards that took place in 2005 from the UK GAAP's ASB accounting standards to the IASB's IFRS accounting standards. This chapter then provides a review of literature for measurement of market risk, followed by an examination of the book-to-market ratio. The development of the relative delta measure and the relational characteristics of accounting quality to measures applied in this study are then formally introduced. The literature pertaining to the Value-at-Risk measure is then reviewed. Thereafter literature for the Basel regulatory framework is reviewed and the application of the relative delta measure to the framework's minimum capital requirement is developed. The chapter concludes by reviewing the potential impact of the relative delta measure on the current banking and regulatory technology framework.

2.3 Background to the 2005 Accounting Change

In January 2005, the major banking firms registered with the LSE observed a change in accounting standards that governed the preparation and presentation of consolidated financial statements (IASB 2009). This change was applicable to banking firms and other organisations registered with the European Community's regulated capital markets, under the 2002 European Commission regulation entitled 'Regulation (EC) No. 1606/2002 of The European Parliament and of The Council of 19 July 2002 on the Application of International Accounting Standards' (EC 2002).

The 2002 European Commission regulations (EC 2002) ruled that firms listed in regulated capital markets within the European Community and governed by the regional laws change from current applied accounting standards to the IASB's IFRS[15] accounting standards, at the latest by 2005. That is, firms had to prepare financial statements for the 2005 fiscal year in accordance with the IASB accounting rules.

The aim of the 2002 European commission regulation concentrated on improving two innately related areas:

1) Make improvements to the efficient functioning of regulated financial capital markets at the European Community member state regional level.

2) As a result of improvements to the efficient functioning of regulated financial capital markets at the regional level, improve economic performance at the European Community level.

The objectives of the European Commission's 2002 regulations were to be met by implementing a legal framework that included employing a more rule based set of accounting standards, which would differ from regional accounting standards based on best practices. Compared to regional accounting standards, the new standards were aimed at enhancing the current levels of intra-firm transparency and inter-firm comparability of accounting information.

The new standards would be recognised to have enhanced transparency if they reported information that is relevant, reliable and understandable (IASB 2011). The IASB (2011) specifies information to have the quality of relevance where information reported is free

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[15] The EC (2002) regulations pronounced that the International Accounting Standards Board (IASB) is the new name assigned to the International Accounting Standards Committee (IASC), and the International Financial Reporting Standards (IFRS) is the new name assigned to the International Accounting Standards (IAS). Both name changes taking effect from 1st April 2001.

from bias, free from material error, and based on transactions that have already taken place. The quality of reliability is characterised by information that is reported on future transactions that have a high likelihood of occurring. The quality of understandability is characterised by information that can be interpreted easily by decision makers with reasonable business knowledge. However, the IASB (2011) asserts that complex information that is relevant and has the potential to assist decision making should not be excluded from the financial statement.

The aims of the new accounting standards were also to present information that would enhance the ability of accounting figures to be comparable through time, and between firms. These aims were to be met by the objective of having a single set of accounting standards to be applied by all regulated firms within the European Community, with the potential for the standards to be applied at the global level.

The European Commission asserted that by applying the IASB accounting regulatory framework and the adoption of the IASB IFRS accounting standards at the Europe level in 2005 and at an international level thereafter, the aims of the 2002 regulation for enhanced transparency and comparability of financial statements would be met (EC 2002, IASB 2009).

Armstrong et al. (2010), Ramanna and Sletten (2009), Beuselinck, Joos, Khurana and Van der Meulen (2010), Horton, Serafeim and Serafeim (2013) and the earlier referenced studies by Platikanova and Nobes (2006), Paananen and Lin (2009) and Morais and Curto (2008) have examined the 2005 accounting change from differing perspectives.

The study by Armstrong et al. (2010) tested the reaction of firms listed in European stock markets to events that took place prior to, but was related to the 2005 accounting change. The study found evidence that firms' stock market reactions to these *accounting change related events* corroborated investor sentiments. In that, the accounting change would bring about higher quality of information, and thus a decrease in information asymmetry. These benefits were attributed to the expectation of enhanced information transparency. This finding adds strength to the surveyed investors' high level of expectation for the new standards reported by Leone (2008). Armstrong et al. (2010) also found positive sentiments attributed to expected benefits from enhanced information comparability between firms. However, contrary to expectations, the study found evidence that firms domiciled in code-law based countries showed market reactions that evidenced a more resistant view to the accounting change than did firms domiciled in common-law based countries.

Ramanna and Sletten (2009) analysed the sentiment to the accounting change in non-European countries from 2002 to 2007. The study finds evidence that the larger economies are resistant to give up standards-setting authority to a single international body, such as the IASB. The study also found that the benefits gained from the accounting change would first increase and then decrease the levels of influence from domestic governing institutions. The study also states that countries are more likely to make the accounting change if trade partners and geographically regional countries adopt the IASB accounting standards.

Beuselinck et al. (2010) measured information quality for European firms from 2003 to 2007 by examining analyst earnings forecasts for firms that adopted the IASB accounting standards. The study finds a reduction in earnings forecast errors especially after 2006. Further, the study finds the largest improvement in forecasts was exhibited by analysts that examined firms in more than one country. Horton et al. (2013) also measured information quality, however, for firms in 46 countries[16] from 2001 to 2007. The study, same as the Beuselinck et al.'s (2010) examination, measured information quality from analyst earnings forecasts for IASB accounting standards adopters. The study finds a reduction of earnings forecast errors and suggests a greater level of forecast accuracy for mandatory IASB accounting standards adopting firms when compared to voluntary adopters. The findings from both Beuselinck et al (2010) and Horton et al. (2013) suggest an increase in forecasted earnings accuracy for firms that adopted the IASB accounting standards. However, Beuselinck et al. (2010) find that consensus amongst analysts for a firm's forecasted earnings remained unchanged irrespective of the accounting standard the firm applied. Horton et al. (2013) report that earnings consensus declined for firms that mandatorily adopted the IASB accounting standards.

[16] Hong Kong is included in Horton et al. (2013) sample of 46 countries. However, they note that Hong Kong is a Special Administrative Region (SAR) of the People's Republic of China.

The studies conducted by Platikanova and Nobes (2006), Paananen and Lin (2009) and Morais and Curto (2008) concentrated on the reaction of firms listed in European stock markets. The study conducted by Platikanova and Nobes (2006) concentrated on reactions at the firm level during the accounting change, while the studies from Paananen and Lin (2009) and Morais and Curto (2008) concentrated on market reactions before and after the 2005 accounting change.

The study by Platikanova and Nobes (2006) found evidence that firms listed in European stock markets exhibited a decrease in value relevance and an increase in information asymmetry during 2005, the year of the accounting change. They report that during 2005, firms in the UK experienced an exceptional increase in stock market price volatility levels compared to years 2003 and 2004, the increase in volatility levels they attributed to information asymmetry. The study by Paananen and Lin (2009), when concentrating on firms listed in the German stock market, found evidence of a decrease in value relevance during and also after the 2005 change. The study by Morais and Curto (2008) that concentrated on firms listed in the Portuguese stock market, also found evidence of a decrease in value relevance after the 2005 accounting change.

Based on the evidence produced from studies that analysed firms in the European stock markets, it is difficult to determine if the European Commission's objectives have been met during the 2005 IASB accounting standards implementation phase. The principal objectives of the Commission being to enhance accounting information transparency and comparability.

It may be contended that there was little doubt regarding the high level of expectation for the 2005 accounting standards to meet the set objectives. This is reflected by Armstrong et al. (2010) who consider the 2005 accounting change to be one of the most significant accounting changes in recent years. The significance attached to the 2005 *event* may remain for some years, with considerable research and debate directed at the planned transparency and comparability aims for the accounting standards' convergence on a global level.

As referred to earlier, the importance attached to the 2005 accounting change is further heightened by reports of dissenting views that existed prior to the change (Walton 2004), with concerns reaching the highest government levels (Armstrong et al. 2010).

Walton (2004) reported that opposition to the new standards came primarily from European advisors and technical expert groups. Serious concerns were also noted from European banks. The primary basis of opposition, Armstrong et al. (2010) and Walton (2004) observed, addressed the requirements for reporting financial instruments under the IASB's IAS 39 standard. As detailed by Walton (2004), the IAS 39 accounting standard, entitled '*International Accounting Standard 39: Financial Instruments: Recognition and Measurement*' (IASB 2009 pp. 1983 - 2080) was criticised for lacking the required qualities to provide a true and fair view of financial instruments. It was claimed that this standard did not represent accurately the effects of hedging strategies used by banks.

Subsequent to the 2005 accounting change, and in view of evolving issues, the IASB published the earlier referenced discussion paper entitled, '*Reducing Complexity in Reporting Financial Instruments*' (IASB1 2008). The aim of the discussion paper signalled IASB's attempt to start taking steps to gain further understanding of issues with financial instrument accounting. The IASB discussion paper, according to Wild and Poole (2008), is in response to the widely held view that the IASB accounting standard's requirements for reporting financial instruments favoured the fair value method of accounting as a long-term solution, and the standards were difficult to understand, interpret and apply. As referred to earlier, the Chartered Financial Analyst (CFA) Institute, in recognition of financial instrument accounting issues, strongly supported IASB's 2008 discussion paper (Wild and Poole 2008).

From this discussion, it is evident that the expected benefits from adopting the IASB's IFRS accounting standards would be improved transparency and comparability resulting in greater financial market stability and higher levels of accounting quality (EC 2002, IASB 2009, Leone 2008). The concern, however, is that firms that adopt the IASB accounting standards would experience increased levels of stock market price fluctuations and thus experience higher levels of exposure to stock market price volatility than otherwise (Walton and Aerts 2006, Walton 2004, Cheney 2008, IASB1 2008, Wild and Poole 2008, Leone 2008). The empirical examination of these theories by Platikanova and Nobes (2006), Paananen and Lin (2009) and Morais and Curto (2008) suggest that European firms that adopted the IASB accounting standards in 2005 experienced increased levels of exposure to stock market price volatility and a deterioration in accounting quality after the adoption compared to before. From the basis of this discussion, this study expects the link between the IASB's IFRS accounting standards adoption and improved transparency, and also improved comparability, to be evidenced by higher levels of accounting quality than otherwise (EC 2002, IASB 2009 and Leone 2008). As discussed earlier, accounting quality is examined in this study by applying the relative delta measure that is developed from the time dependent treatment of the book-to-market ratio (Fama and French 2008). The development of the relative delta measure is discussed in the following sections and its methodological approach is presented in Chapter 3, Section 3.9.2.

To reiterate, given the evidence from the reviewed literature for European firms' stock market reactions before and after the accounting standards change, together with the dissenting views reported from European banking firms. Such evidence would add strength to the expectation that the UK banking sector may be an important area to research during the 2005 accounting change. This study aims to extend the research conducted in this area by effectively testing its null hypothesis. That is, principally analysing the effects between accounting totals and the market price before and after the 2005 accounting change for UK banks in the time range 1992 to 2009.

As stated earlier, this research aims to adapt the Fama and French (2008) time dependent treatment of the book-to-market ratio to develop the *relative delta measure*. As introduced, the relative delta measure is aimed at addressing this study's null hypothesis by measuring, for a given time period, how key accounting totals changed relative to the change in market price.

From the Fama and French (1992) and Peterkort and Nielsen (2005) evidence for the book-to-market ratio's risk measurement properties, and from the Fama and French (2008) evidence, the level of difference evaluated using the relative delta would also provide for a firm its level of exposure to financial distress risk. This study measures a bank's level of exposure to financial distress risk by using both the book-to-market ratio, and the relative delta. This study also compares both measures to the Value-at-Risk measure. The Value-at-Risk measurement model is endorsed by the IASB (2012) and by the Basel III accord (Basel 2011) as an accepted approach to measuring *financial risk* within a firm's risk management process. This study extensively applies the Value-at-Risk measure to the market price variable in order to determine the level of stock market price risk for the UK banking sector. This study also applies the Value-at-Risk measure to the accounting total variable by developing an *accounting Value-at-Risk*. This study develops the accounting Value-at-Risk by first developing the relative delta measure and then applying the relative delta to the market price return Value-at-Risk (see Appendix H).

Having a measure for Value-at-Risk based on both the accounting total variables and the market price variable would enable extending the null hypothesis test by examining, for the UK banks, the difference in the level of accounting Value-at-Risk to the market price Value-at-Risk[17] before and after the 2005 accounting change. To support the null hypothesis it would be expected that both the accounting and market price Value-at-Risk would exhibit similar levels for before and after the 2005 change.

The derivation for a measure of Value-at-Risk for a key accounting total would involve an additional step of scaling or adjusting the market price return Value-at-Risk with the accounting total and market price relative delta (see equation (3.44)).

The relative delta measure is presented in Sections 2.7 and 3.9.2, and the accounting Value-at-Risk measure is presented in Section 3.9.4. The following sections examine literature that relates to the development of these measures.

2.4 Risk Measurement

A logical approach to the development of the relative delta measure and then the accounting Value-at-Risk would be to examine literature based on the measurement of risk from a market perspective. This part of the literature review begins by examining work that specified the standard deviation measure to be a fundamental measure of risk. From the development of the standard deviation, a brief introduction to the well-known capital asset pricing model is provided followed by a review of the book-to-market ratio. This study considers the book-to-market ratio to be an important measure in the development of the relative delta measure. It is then expected to review the Value-at-Risk measure with the objective to providing a detailed examination of the literature surrounding its development and use. A review of the Value-at-Risk measure is also

[17] This study refers to the *market price Value-at-Risk* also as the *market price return Value-at-Risk* and also as the *Historical Value-at-Risk Actual.*

presented by detailing literature that contributed to the development of the Monte Carlo simulation Value-at-Risk model.

2.5 Standard Deviation, CAPM, and the Book-to-Market Ratio

It may be contended that Bernoulli was the first to specify the association between the standard deviation measure and its application in quantifying the risk of financial loss during a financial transaction between two parties. His 1738 work entitled the *Specimen Theoriae Novae de Mensura Sortis*'[18] (Bernoulli 1738) proposed that a measure of *financial risk* of loss during a transaction for an observed price variable should be a measure of both its average and its deviation from its average. The latter is the specification for the contemporary statistical standard deviation measure. According to Bernoulli the measure of potential loss from a financial transaction, measured using the standard deviation measure, may also provide a measure of its gain. Markowitz (1952), in his work on modern portfolio theory extended the use of the standard deviation measure by specifying it as a direct measure of financial risk. He proposed that the standard deviation, also termed the standard error or volatility, for a given portfolio of instruments could be reduced to an optimal minimum, thus reducing its risk, while at the same time increasing the level of its financial gain, that is, its return[19]. This increase in returns efficiency he proposed is possible by diversifying the risk to return profile of the instruments contained in the portfolio. Markowitz termed this theory the E-V rule or the Expected returns to Variance of returns rule, where either the variance or its square root, the standard deviation, may be used as the measure of risk.

2.5.1 The Capital Asset Pricing Model

Markowitz's theoretical development of the E-V rule has had a profound influence on the way modern financial markets approach the measurement of financial risk and return. The most noted development from the E-V rule is the capital assets pricing model, more popularly known by the acronym CAPM (Jensen, Black and Scholes 1972). The development of the Capital Asset Pricing Model has been influenced by the

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[18] This study makes reference to Bernoulli's 1738 work based on the translation from Latin to English under the title 'Exposition of a New Theory on the Measurement of Risk' from the Journal Econometrica published by the Econometric Society in 1953.

[19] Details for financial return, from the perspective of market price return, are presented in Section 3.9.2 and Appendix M.7.

work of Sharpe (1964), Treynor (1962, French, C 2003), Lintner (1965) and Mossin (1966).

Specified by Jensen et al. (1972) the capital asset pricing model comprises a straight-line model such as the linear regression model. The equation consists of a dependent variable represented by the expected returns for a selected financial instrument. The independent variable theoretically may consist of adjusted expected returns from all available stocks traded in the financial market. Characteristically the independent variable is selected as an adjusted market portfolio (Jensen et al. 1972). The stock market portfolio is adjusted by a risk free rate. The risk free rate is represented by the interest rate or yield from an interest rate instrument such as a Government bond that has a similar maturity as the holding period for the model's dependent variable instrument. The slope from the implemented straight-line equation provides a measure of the selected financial instrument's risk premium and expected return. The slope is termed the *beta*, and symbolized by the Greek letter β. The intercept from the regression equation represents the risk free interest rate.

2.5.2 Book-to-Market Ratio

Using variables that are not entirely familiar to the Asset Pricing Models, but with the same objective, the literature examination of the book-to-market ratio[20] (BM) has centered on how well it can measure a firm's risk and return (Fama and French 1992). The book-to-market ratio has been extensively treated in the work of Banz (1981), Bhandari (1988), and Fama and French (1992, 1993, 2008). For a firm's *book*-to-*marke*t ratio measure, the literature specifies *book* to be the firm's *book value* measured using *book equity* that is based on the accounting measure *total shareholders' equity*, and *market* as a firm's *market value*[21]. Where, the *market value* is calculated by multiplying the number of the firm's shares traded or outstanding in the market by the current market price of those shares.

The attention given to the book-to-market ratio is justifiable as it combines the accounting measure of a firm's value, the book value, to its financial market's measure

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[20] This study refers to the book-to-market ratio interchangeably also as BM.

[21] Market Value is also referred to as Market Capitalisation by Fama and French (2008).

of value, the market value. Attention further grew for the BM when Fama and French (1992, 1993) evaluated that the BM measure provided a more accurate measure of portfolio returns for a single time period than the capital asset pricing models beta measure. Fama and French (1992, 1993, 2008) termed stocks with high BM as value stocks, and stocks with low BM as growth stocks. Empirically they evaluated that the measure of a stock's BM is a direct reflection of its level of financial risk. They evaluated that value stocks with a high BM would be in *financial distress* and exhibit lower earnings, that is a lower net income accounting total, and thus exhibit a greater level of financial distress risk when compared to low BM growth stocks.

Studies conducted by Fama and French (1992, 2008), Rosenberg, Reid, and Lanstein (1985), Lakonishok, Shleifer, and Vishny (1994) found evidence that the *high-risk* high BM value stocks had higher average returns compared to low BM growth stocks. The increase in returns may be explained as the expected investor compensation for carrying *high-risk* high BM value stocks. Even though Fama and French (1992, 1993) evaluated the BM to be a better measure for a firm's expected return compared to the CAPM beta, Vuolteenaho (2002) and Fama and French (2008) recognised that the BM is a *noisy* measure of expected returns for portfolios of stocks.

2.6 Book Delta to Market Delta

Fama and French (2008) and Vuolteenaho (2002) attribute the *noisy* behaviour exhibited by a portfolio's average BM measure, when used to estimate expected returns, was as a result of investors reacting to expected cash flows. They determine that this investor expectation is due to the expected dividend payments from the portfolio's individual stocks.

Fama and French (2006) tested an array of variables, including accounting variables based on financial statement accounting totals, in an attempt to mitigate the observed BM noise and thus improve the BM estimates of average cross-sectional stock returns. However, they reported limited success.

Fama and French (2008) tested the time dependent progress, i.e. the *delta*, of the individual BM component variables, to determine whether it would improve predictions for cross-sectional returns. The Fama and French (2008) development of the BM and *book delta* to *market delta* measure takes the following decomposition:

$$BM_t = BM_{t-k} + [dB_{t-k,t} - dM_{t-k,t}] \tag{2.1}$$

Where BM_t is the *log* [22] of the BM at time t and is expressed as, BM_{t-k}: the log of the BM at time $t - k$ plus the difference between $dB_{t-k,t}$: the change or *delta* in the log of book equity from time $t - k$ to t, and $dM_{t-k,t}$: the change or *delta* in the log market price for the same time period $t - k$ to t. In addition, this study refers to dB as the *book delta* and dM as the *market delta*.

Fama and French (2008) found evidence that examining the BM components, *book delta* to *market delta*, presented in equation (2.1) did improve estimates of expected returns.

The term *book delta* to *market delta* is applied in this study to describe the component expressed inside the square brackets in equation (2.1). It is also the addition of this component to the contemporary book-to-market ratio that this study terms *the time dependent treatment of the book-to-market ratio*, and is referred to in Section 1.2 to introduce the development of the relative delta measure. Defining this component for a single time unit specifies the following expression (see also Appendix A):

$$[dB_{t-1,t} - dM_{t-1,t}]$$

This measurement component is applied in Section 2.7 to develop the relative delta measure (see also Appendix A to Appendix D). The relative delta measure is then specified in Sections 2.9.2 and 2.9.3 as a measure of accounting quality and thus as a measure of the level of exposure to accounting quality risk.

[22] The term log is used to specify the natural logarithm to the base e and may also be denoted as $ln(X)$, where (X) is the termed being logged.

2.7 Book Delta to Market Delta and the Relative Delta Measure

The evidence found by Fama and French (2008) that the change in book equity, referred to in this study also as the *book delta*, and the change in market price, referred to in this study also as the *market price delta*, provides an enhanced measure of expected cross-sectional stock returns and provides the foundation for this study's development of the relative *delta measure*. The development of the relative delta measure is presented in Appendix B. The specification for the relative delta measure is presented in Appendix C.

This study extends the Fama and French (2008) time dependent treatment of the book-to-market measure exhibited in equation (2.1) in four distinct ways:

1) The book-to-market ratio form specified in equation (2.1) is a measure of the scalar book value to market value. The relative delta extends this form by focusing on the delta component. That is:

$$\delta_{t-1,t} = [dE_{t-1,t} - dM_{t-1,t}] \qquad (2.2)$$

Where for time $t-1$ to t: $\delta_{t-1,t}$ is specified as the *total equity to market price relative delta*, $dE_{t-1,t}$ is the log change in *total equity* and $dM_{t-1,t}$ is the log change in market price. The relative delta measure shown in equation (2.2) measures at time t the *difference component* for time $t-1$ to t. Therefore, the *difference component* is specified in this equation as the measure of the difference between the log change in the accounting totals measure, total equity, and the log change in market price.

2) Fama and French (2008) calculate *book equity* primarily by applying the following data items from the data provider Compustat: total assets minus liabilities, plus deferred taxes and investment tax credit, minus liquidating, redemption or carrying value of preferred stock[23]. To analyse the full effect of the financial statement's accounting totals, this study replaces book equity with the total shareholder's equity (*total equity*) financial statement accounting total item. In effect, maintaining the total assets minus

[23] Specified in Fama and French (2008, p 2979).

liabilities measurement component from the Fama and French (2008) book equity measure.

3) The Fama and French (2008) approach to the book equity component, in equation (2.2), is calculated principally by the *change in the book equity per share* measure. Although, this study does perform tests applying the *total equity per share* measure, the relative delta measure extends the Fama and French (2008) measure by specifying the *change in total equity*, in comparison to the Fama and French (2008) *change in book equity*. To assist the development of the relative delta measure, the latter accounting standards terminology, i.e. *total equity*, is applied in this study in place of *book equity*. Details of the Fama and French approach and this study's approach to equation (2.2) are presented in Section 3.2.3.

4) The relative delta measure extends the Fama and French (2008) book equity treatment by examining total equity, and the additional accounting totals: total assets, total liabilities and net income.

The following section reviews the balance sheet and income statement accounting totals examined in this study.

2.8 Accounting Totals

Discussed earlier, Fama and French (2008) found evidence that constructing a measure using the difference between the change in book equity and that of the change in market price provides explanatory power for expected returns and thus also a measure of perceived financial distress risk. This study extends the essence of this measure by specifying a system of measures that quantifies the levels of difference based on the accounting equation. This system of measures is collectively termed the *accounting to market price relative delta measure*.

2.8.1 Accounting Equation

The accounting equation takes the general form:

$$\textit{Total Shareholders' Equity} = \textit{Total Assets} - \textit{Total Liabilities} \qquad (2.3)$$

The term *Total Shareholders' Equity*, in equation (2.3), is the accounting measure applied in this study in the same way as the Fama and French (2008) book equity measure. Total shareholders' equity, total assets and total liabilities are reported in the principal financial statement generally termed the balance sheet. Another key measure is net income and is reported in the key financial statement generally termed the income statement.

Before and after the accounting change, for each of the key financial statement totals: total shareholders' equity, total assets, total liabilities and net income, this study measures their material change as well as their change relative to the change in market price. The latter measurement is the referred *relative delta measure*. These are the principal measures this study applies to test its null hypothesis.

From the basis of definitions presented by the IASB (2011), the following sections present the key financial statement totals applied in this study and referred to as the accounting totals.

2.8.2 Total Shareholders' Equity

From the accounting equation, the balance sheet reports the total shareholders' equity to be the difference between the measurement of asset items and the measurement of liability items. The IASB (2011) specifies the *total shareholders' equity amount* as a balance sheet element that is the residual interest in assets after the deduction of all liabilities.

The IASB (2011) sub classifies the total shareholders' equity amount to include an equity reserve item termed retained earnings. The retained earnings figure includes amounts that have been credited from tax liabilities and amounts reserved under regulatory ordinance and legal ordinance. The amount reserved under regulatory ordinance is a key measure in the Basel (2011) regulatory standards where it forms a part of what is termed the *regulatory capital*. The Basel standards specify that the measure of regulatory capital together with, what are termed *risk weighted assets*, provide a basis to measure a firm's capital adequacy, that is, the level of capital available to meet the likelihood of financial loss. Within the Basel framework, a firm's capital adequacy is measured by the Basel capital requirement formula. The level of capital adequacy reported by this formula ultimately provides a measure of a firm's credit risk. The Basel capital requirement formula is presented in Section 2.10.

2.8.3 Total Assets

The balance sheet reports total assets to be the amount recorded for the sum total of all active past transactions that represent an inflow of economic benefit to a firm. The IASB (2011) specifies assets as a balance sheet element, and a single *asset amount* to be an item that results in an inflow of resources that embody economic benefit from the item to the firm.

IASB (2011) specifies that for a transaction to be recognised as an asset amount on the balance sheet, the transaction will have a high probability of future economic benefit to flow from the item to the firm, and the item's cost or value can be reliably measured. The asset would be recognised on the balance sheet until it is determined that future economic benefit from the item is improbable.

2.8.4 Total Liabilities

Total liabilities are reported on the balance sheet when a firm's sum total of active past transactions represents the present obligations that must be satisfied. The IASB (2011) specifies liabilities as a balance sheet element, and a single *liability amount* to be an item that satisfies a present obligation with the result of an outflow of resources that embody economic benefit to the item from the firm.

The IASB (2011) specifies that for a transaction to be recognised as a liability amount on the balance sheet, the transaction will have a high probability of future economic benefit to flow to the item from the firm.

2.8.5 Net Income

Net Income is reported in the income statement and relates to the financial performance or the profitability of a firm during the past tax or fiscal year. That is, the monetary amount that has flowed into the firm during the financial year. Generally, the net income figure is represented by the residual monetary amount of revenue after the deduction of all expenses. The IASB (2011) specifies net income as an income element, and a single *net income amount* as an item that represents an increase in the economic benefit to a firm.[24]

Net Income in this study is considered as the amount remaining at the financial year-end after deducting income tax expenses and other expenses. In the banking template for the financial accounting income statement, the net income amount used in this research is generally referred to as the *profit that is attributed to a firm's shareholders*.

The reviewed accounting totals together with the market price are the principal variables applied in this study to determine accounting quality and thus its null hypothesis. This study quantifies accounting quality by measuring the difference between the key financial statement accounting totals and the market price before and after the 2005 accounting change. To measure this difference (or value relevance), this study adopts a system of *relative delta measures* developed by extending the Fama and French (2008) measure for the change in book equity to the change in market price (see Sections 3.2.4 and 3.2.5). This system of measures includes the previously introduced *Total Equity to Market Price Relative Delta*, and extends the measurement principle to include the other key financial statement accounting totals. The system of relative delta measures used in this study are the: *Total Equity to Market Price Relative Delta*, *Total Assets to Market Price Relative Delta*, *Total Liabilities to Market Price Relative Delta* and *Net Income to Market Price Relative Delta*. The next section formally introduces and reviews *accounting quality* and its relation to *value relevance*, *relative delta* and other key measures referenced in this study.

2.9 Accounting Quality

Accounting quality is determined by Barth, Landsman and Lang (2008), Morais and Curto (2008), Paananen and Lin (2009) and Liu, C, Yao, Hu and Liu, L (2011) to be a function of value relevance, and earnings quality. Where, earnings quality is specified by the level of earnings management and loss recognition. They determine that an

[24] The financial statement reports the net income amounts based on the amount of capital that has been earned by a firm from the beginning of a fiscal year to the end of that fiscal year. That is, the capital attributed to the 12 months that comprises the fiscal year. The fiscal year is also referred to as the tax year. From 2002 to 2008 this research studies the effect of the individual yearly net income amounts for the sample firms and control group based on the last 6 months prior to the end of the fiscal year. For the purpose of reference, Appendix R.1.2 presents for the primary sample a material analysis of both the 6 month and 12 month net income amounts.

improvement in accounting quality is attributed to an increase in value relevance, decrease in earnings management, or a reduction in the time taken for losses to be recognised. Although the general approach in determining improved accounting quality shows evidence that it relies upon quantifying both value relevance and earnings quality, Platikanova and Nobes (2006) specifies this improved quality to be predominantly a function of an increase in value relevance.

This section details the associative relationship between accounting quality and the *measures*: value relevance, relative delta, the explicit and implicit roles of accounting, financial distress risk, and the level of *information bias* between accounting and market price data elements.

2.9.1 Accounting Quality and Value Relevance

The determination of accounting quality by measuring value relevance is specified by Amir, Harris and Venuti (1993), Barth et al. (2008), Morais and Curto (2008), Paananen and Lin (2009) and Liu, C et al. (2011) to be a function of the relationship between the accounting total net income and market price, and book equity and market price. They prescribe that the stronger the positive relationship for both the accounting measures net income and book equity to that of market price the higher the value relevance and therefore the greater the quality of the reported accounting data.

Platikanova and Nobes (2006) specify accounting quality by also utilising market price levels. However, they do so in order to determine the absence of volatility from the market price's bid-ask spread for a specified time period. If volatility is absent then it is concluded that publicly available accounting data is value relevant and exhibit a high level of accounting quality than if volatility had been present.

2.9.2 Accounting Quality, Value Relevance and the Relative Delta Measure

The relative delta measure is introduced in Section 1.1 and specified in Section 2.7 and Appendix C and is applied in this study as a measure of the difference between accounting and market price change variables. The relative delta measure, based on its origins to improve estimates of stock returns and measure financial distress risk (Fama and French 1992, 2008, Peterkort and Nielsen 2005, Bodie et al. 2002) is founded on the same principles as the measure of value relevance and thus the determination of the level of accounting quality detailed by Amir et al. (1993), Barth et al. (2008), Morais and Curto (2008), Paananen and Lin (2009) and Liu, C et al. (2011). That is, the relative delta measure and the value relevance measurement approaches detailed in the referenced literature are fundamentally based on the level of the relationship between accounting and market price variables.

The use of the relative delta to test this study's null hypothesis by evaluating the level of value relevance, and therefore quantifying the level of accounting quality, is specified in Section 3.3.1. In Section 1.1, Section 2.7 and Appendix C the relative delta measure is defined such that the closer its evaluation to zero, due to a smaller difference between the accounting and market price change variables, the greater is the value relevance and thus the greater the accounting quality of the tested accounting data. The converse is true when the relative delta measures a greater difference between the change variables. This higher level of relative delta indicates a lower level of value relevance and thus characterises a lower level of accounting quality.

2.9.3 Relationship Between Accounting Quality, Accounting Quality Risk, Value Relevance, Difference Component, Relative Delta Measure, Explicit and Implicit Roles of Accounting, Financial Distress Risk and Information Bias

As stated, the relative delta measure is generally specified as the difference between the change in accounting totals and the change in market price (see Section 2.7 and Appendix C). In Sections 1.2 and 3.2.3 to 3.2.5, the relative delta by quantifying the difference between these change variables is detailed to be the direct measure of the *difference component*. The relative delta measure in Section 1.1 and Section 2.9.2 has also been detailed to reflect value relevance and thus accounting quality. It must also be asserted that the relative delta measure, and thus the measures of value relevance and accounting quality, is also related to the role accounting plays in helping to mitigate financial risk. Introduced in Section 1.1, the closer the relative delta evaluates to zero, the greater the explicit role that accounting takes within the context of financial risk management. This effect indicates a high level of value relevance and thus a high level of accounting quality, and also indicates a low level of exposure to accounting quality risk.

On the contrary, as elucidated in Section 1.1, the higher the level of the relative delta measure as a consequence of a greater difference between the accounting and market price change variables, the lower the level of accounting's explicit role and the greater its implicit role. Specified in Section 1.1, Section 3.2.2 and Appendix C.2 this effect is also a measure of *financial distress risk*. In that, the higher the level of the relative delta measure, that is the higher the level of the *difference component*, the greater is the level of exposure to financial distress risk. In addition, this effect is also a reflection of an increase in *information bias* between the accounting and market price data elements. This general effect indicates a lower level of value relevance and thus a lower level of accounting quality, and also indicates a higher level of exposure to accounting quality risk, than would otherwise be determined.

2.10 Basel Risk Management Framework and Risk Measurement

The measure of a firm's *accounting quality*, *relative delta*, *financial distress risk* and *information bias*, although measured and treated the same in this study, are not currently prescribed measures of risk within the Basel III bank regulatory framework. The Basel I (Basel 1998), Basel II (Basel 2004, 2006), Basel II.5 (Basel 2009) and Basel III (Basel 2010, 2011) regulatory frameworks, stipulate that pre-specified risk weights must be applied to categories of currently held assets recognised, measured and reported in a firm's balance sheet as well as items that are off-balance sheet (Basel 2011). The level of the weighting applied is dependent on the class of the recognised assets, with a 0 (zero) risk weight applied to the *price level* or value of assets such as cash, and higher risk weights applied to the price of derivative financial instruments such as, swaps, futures, forwards and options. Higher risk weights are also applied to complex securitisations such as structured investment vehicles and products such as credit default swaps.

The prices applied to a firm's assets and items recognised on and off its balance sheet, that include complex financial instruments such as derivatives, are based on valuation methods and models. The valuation methods and models are regulated by national financial supervisory bodies such as the Prudential Regulation Authority (PRA) and the Financial Conduct Authority (FCA)[25] for the UK and the Securities and Exchange

[25] The UK financial supervisory and regulatory bodies: the Prudential Regulation Authority (PRA) and the Financial Conduct Authority (FCA), were formed on 1st April 2013 as successors to the Financial Services Authority (FSA).

Commission (SEC) for the United States of America (USA). The valuation methods, primarily the fair value method, used after the 2005 accounting change, although under the supervision of domestic financial regulatory bodies, were specified by the IASB accounting standards setting authority. Reviewed in Section 2.2, the fair value approach to valuation has come under much scrutiny, and as stated, is the topic of a discussion paper produced by the IASB (IASB1 2008). It is apparent that the value of a firm's assets, and also its equity and liabilities elements, recognised in the Basle regulatory framework is governed by the valuation approach applied by the firm, irrespective of concerns regarding that approach. Based on this reasoning it may be contended that a requirement to indicate, or even adjust, the valuation of a firm's assets to levels of financial distress risk and information bias captured by the relative delta would be aligned at a minimum to supervisory and regulatory requirements. This study examines this valuation adjustment from the perspective of the Basel capital requirement formula.

2.10.1 The Basel Capital Requirement Formula

The Basel capital requirement formula that represents a firm's capital adequacy is specified by formula (2.4). The Basel regulatory framework specifies that regional regulatory bodies and central banks should stipulate to financial firms, under their supervision, to measure and report asset prices for both on and off balance sheet instruments. Presented in equation (2.4), for a firm, the measure of asset prices for on and off balance sheet instruments specifies the *risk weighted assets* (RWA) denominator component of the Basel capital requirement formula.

The Basel capital requirement formula takes the following form:

$$Capital\ Requirement = \frac{Total\ Regulatory\ Capital}{RWA} \qquad (2.4)$$

Where the capital requirement formula in equation (2.4) represents for a firm its level of capital adequacy, and is calculated using the ratio of the firm's total regulatory capital to its risk weighted assets (RWA).

The *total regulatory capital* component in equation (2.4) comprises the measure for a firm's assets that are free from any *measurable risk*, and include reserves and disclosed and *non-disclosed* collateral (Basel 2011). As a base line, the Basel capital requirement formula stipulates that a firm should have 8% or greater of non-risk regulatory capital to 100% of risk weighted assets. Thus, firms with capital requirement levels measuring 8% or greater are classified as having adequate capital to cover losses resulting from risky assets. That is, a firm would have a level of *total regulatory capital* that is the same or greater than the 8% threshold when compared to 100% of the firm's *risk weighted assets*. Firms with a capital requirement level less than 8% are alerted to be at risk and thus would incur penalties until their capital base is raised to and above the 8% minimum.[26]

From the Basel capital requirement formula it would be seen that the less the level of risk perceived by a firm's assets, computed for the *risk weighted assets* component, the less the level of *total regulatory capital* that would be needed to meet or exceed the 8% capital requirement. The pre-set risk weights applied to asset classes to compute the *risk weighted assets* component under the Basel capital formula are seen as restrictive by some firms and seen to disfavour financial instruments issued by low credit risk firms (Gup 2004). This was the requirement specified in the *original* Basel I Accord that would enforce the application of the same pre-set risk weight for the same category of instrument from a low credit risk firm compared to a high credit risk firm. This *one-size-fits all* characteristic of the initial Basel regulations was designed to provide a simple framework that all firms could apply, irrespective of the level of sophistication of their internal risk management framework. For firms with more sophisticated risk management frameworks the Basel II and III regulations allow application of internal risk weights to compute the capital requirement's *risk weighted assets* component. The computation and subsequent application of internal risk weights is conditional upon the applying firm providing extensive documentation on its risk measurement and management policies, processes and methods to its regional regulatory bodies.

The most popular risk measurement method endorsed by the Basel (2011) regulations to compute internal risk weights is the *Value-at-Risk* measure. Application of the Value-at-

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[26] The Basel III regulations specify 8% of risk weighted assets to be the 'Minimum Total Capital' requirement (Basel 2011, p 69). To increase capital levels from this 8%, the Basel III regulations specify a 'Capital conservation buffer' (Basel 2011, p 54) and a discretionary 'Countercyclical buffer' (Basel 2011, p 57). These two financial buffers, in effect, raise the *minimum regulatory capital requirement* from 8% to 8.625% on the 1st of January 2016 and steadily increases year-on-year to 10.5% on the 1st of January 2019 (Basel 2011).

Risk risk measurement approach is also permitted by the IASB (2012) to provide *sensitivity analysis* for a firm's exposure to market risks during the financial year.[27]

2.10.2 Basel Risk Management Framework and Value-at-Risk

The Value-at-Risk measure was primarily developed to measure the risk for all assets held by a firm, thus providing a measure of the firm's total financial risk exposure. However, the Value-at-Risk measure has become better known for its ability to provide a measure for market risk. That is, the ability to provide measures for a firm's stock market price risk, interest rate risk and currency risk. Previously it was stated that the Basel regulatory framework does not provide a risk adjustment such as the relative *delta measure*, to account for the difference between the changes in a firm's reported key financial accounting totals and the change in its stock market price. From the perspective of the Basel capital requirement it was alluded to earlier that such a risk adjustment, and thus the resulting capital requirement adjustment, could be contended to be in keeping with the essence of the Basel framework. In Appendix J, this risk adjustment based on the relative delta is related to the Value-at-Risk measurement approach. Further, in Section 3.9.6 and Appendix K, this study proposes the extending of the current Basel capital requirement policy to include such a risk adjustment. This study introduces, also in Section 3.9.6, an application of the accounting total to market price relative delta measure. It is proposed that this introduced measure adjusts the Basel capital requirement formula to take account of significant differences between a firm's accounting based value and its market based value.

The reference to the Value-at-Risk measure within the Basel regulatory and the IASB accounting frameworks should alone warrant its detailed review. In addition, the application and associative relationship between Value-at-Risk and the relative delta measure detailed in this study, adds strength to a review of its origins and its methods of implementation. Given this prominence, the Value-at-Risk measure is reviewed in the following sections and detailed in Appendix N.

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[27] The IASB specify market risk to be: interest rate risk, currency risk and *other price risk*. The IASB specify *other price risk* to be the risk that a financial instrument may become exposed to, as a result of, for example, changes in stock market prices or commodity prices, that is, risks other than interest rate risk or currency risk.

2.11 The Value-at-Risk Measure

As stated earlier, the Value-at-Risk measure was primarily developed to measure the risk for all assets held by a firm, thus providing for a firm its total financial risk exposure. From these beginnings, Value-at-Risk has become better known for the ability to measure market risk. That is, the ability to estimate for a firm its level of exposure to stock market price risk, interest rate risk and currency risk.

The Value-at-Risk measure is specified by JPMorgan Chase & Co.[28], the firm attributed to the contemporary Value-at-Risk definition, by the following (JPMorgan Chase and Reuters 1996):

> *The measure of the maximum potential change in value of a financial instrument for a specified probability over a specified time horizon*

Tracing the origins of the Value-at-Risk measure, Dowd (2003) reports that during the late 1970s and 1980s, methods and models were being developed internally by firms to measure the levels of risk attributed to derivatives and other financial instruments. The objective of these methods and models was to provide an aggregate measure of the risks faced by the whole institution, termed firmwide risk[29]. To emerge from this quest for a measure of firmwide risk during the 1980s was the Value-at-Risk measure. Morgan Stanley Capital International (MSCI), the acquirer in 2010 of RiskMetrics - a firm branched from JPMorgan Chase & Co., credits the origin of the Value-at-Risk measure to banks from the USA during the 1980s (MSCI 1999).

MSCI states that the stimulus for the development of the Value-at-Risk measure was as a response to the developing derivative markets. MSCI claimed that traditional measures such as duration analysis were inadequate to managing a firm's risks attributed to derivative financial instruments. In addition, the move by banks and other financial institutions to revalue derivative instruments from prices in observable

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[28] JPMorgan Chase & Co. was formed in the year 2000 when Chase Manhattan Corporation merged with J.P. Morgan & Co.. The contemporary Value-at-Risk measure was developed in the 1980s by J.P. Morgan & Co. prior to the merger with Chase Manhattan Corporation. However, for completeness, this study makes reference to JPMorgan Chase & Co. when referring to either firm prior to the merger.

[29] Morgan Stanley Capital International (MSCI 1999) and Dowd (2003) use the term 'firmwide risk' to refer to an entire firm's risk exposure.

markets, a process known as marking-to-market (or mark-to-market), proved well suited to the Value-at-Risk model. This suitability has proved to stimulate further the adoption of the Value-at-Risk approach (MSCI 1999).

It was at the request of the JPMorgan Chase & Co. chairman (1980 to 1986) Sir Dennis Weatherstone during the 1980s that the contemporary structure for the Value-at-Risk measure emerged. Dowd (2003) reports that Sir Weatherstone requested his staff to provide him with a daily one page document reporting the risk and potential losses for the firm's whole trading portfolio over the following 24 hours. To meet this request the JPMorgan Chase & Co. staff developed a system based on the Value-at-Risk model. This model was used to measure the risk faced by the bank's individual trading positions and to provide also an aggregated single measure to represent the entire bank's total risk exposure or its firmwide risk. This report became famously known as the 4:15 report because it was presented after the close of trading at 4:15 pm each day.

As suggested earlier, the Value-at-Risk measure, together with the relative delta measure, is central to fulfilling the objectives of this research. This study applies Value-at-Risk primarily to determine for the banking firms their stock market price Value-at-Risk. This study also applies the Value-at-Risk measurement approach to test further its null hypothesis and in so doing also tests the *relative delta* measure in a firmwide risk and regulatory capital context.

2.12 Value-at-Risk Models

The general Value-at-Risk model is considered for application in estimating the risk of future losses for a single financial instrument as well as portfolios of financial instruments. Dowd (2003) specifies the Value-at-Risk approach applied for a single financial instrument to consist of the following procedure:

1) A number of possible future prices are estimated or generated for a financial instrument for a predetermined length of time that a firm expects to hold that instrument. This predetermined length of time is termed the time horizon or the holding period for the instrument.

2) From the number of possible future prices estimated or generated, the financial instrument's corresponding possible future price *return*s are computed.

3) From these possible future returns, a *distribution* for the financial instrument's price returns is constructed.

4) For the desired confidence level, usually at the 95% or 99% level, that is the 0.05 or 0.01 level of probability significance respectively, the instrument's price returns distribution is examined and the return corresponding to the desired confidence level is read.

The return that is read from this distribution is the measure for the financial instrument's Value-at-Risk for the given level of confidence and given time horizon. For example, if a financial instrument's Value-at-Risk were to be specified at the 95% confidence level (0.05 significance level) for a 250-day time horizon, then moving from the highest to the lowest returns on the constructed distribution, the 5th percentile return would be the specified measure for the instrument's Value-at-Risk. Thus, this measure would be interpreted by a practitioner to represent, at a 95% level of confidence, that the financial instrument's return would not go below the return represented by this Value-at-Risk level over the next 250 days.

Hull (2009) specifies that a firm could measure Value-at-Risk with time horizons that are less than a day. JPMorgan Chase and Reuters (1996) specify a firm would typically measure Value-at-Risk with a 1-day time horizon. The Basel regulations (Basel 2011) specify that a firm should measure Value-at-Risk for a time horizon determined by the margin or holding characteristics of the traded instrument.

This study presents Value-at-Risk results for the 1-day, 250-day and 500-day time horizons. In addition, a *0-day time horizon* Value-at-Risk, termed the *Historical Value-at-Risk Actual*, is specified. The Value-at-Risk confidence level used in this study is the 95% level, that is, at the 0.05 significance level. However, a comparison of confidence levels based on the 95%, 99% and 99.9% levels is provided.

Inspecting the earlier stated step 1) in this section, when a financial instrument's future price returns are estimated or generated using *historical price movements*, MSCI (1999) specifies that 2 years, approximately 500 business days, of past price movements should be used. Basel (2011) regulations specify that 3 years, approximately 800 business days, of past price movements should be used. This study estimates and generates price returns based on both 500 and 800 days historical price movements.

Detailed by JPMorgan Chase and Reuters (1996), Dowd (2003), and Hull (2009) there are three principal Value-at-Risk models a firm could apply. These models being:

1) The variance-covariance model
2) The historical simulation model[30]
3) The Monte Carlo simulation model

To measure a financial instrument's Value-at-Risk, the variance-covariance model measures Value-at-Risk based on a primary statistical measure for the instrument's price. This primary statistical measure is the standard deviation. The historical simulation model measures Value-at-Risk based on the instrument's actual historical price information. The Monte Carlo simulation model measures Value-at-Risk based on a *price* or *returns model* that is applied to simulate the financial instrument's possible future price movements. This study applies all three Value-at-Risk models. Sections 2.12.1 to 2.12.3, presented next, provides details for each of these principal VaR model *constructions* at the 95% and 99% confidence levels. In addition, each models advantages and disadvantages are considered.

2.12.1 Variance-Covariance Model

The Value-at-Risk measure for a financial instrument computed with the variance-covariance model, detailed by JPMorgan Chase and Reuters (1996) and Dowd (2003) involves a process based on the standard deviation statistical measure. A normal probability distribution, specified by the distribution's statistical mean and standard deviation, is assumed for the financial instrument's future price movements. This study applies standard deviation estimates based on historical returns. These returns are computed using the required time horizon applied to past market prices.

[30] The historical simulation model applied to measure Value-at-Risk is also referred to as the historical Value-at-Risk model.

Once the standard deviation from the market price returns distribution has been estimated, it is simply scaled by the probability that represents the desired confidence level. For a 95% confidence level (that represents the 0.05 probability level, this being the same as the 0.05 significance level), the standard deviation is multiplied by -1.65. For a 99% confidence level (that represents the 0.01probability level, this being the same as the 0.01 significance level), this standard deviation is multiplied by -2.33. For a normal distribution, these values: -1.65 and -2.33, are measures of the *number of standard deviations from the statistical mean* that represent probabilities 0.05 and 0.01 respectively. Thus, multiplying the standard deviation by -1.65 and -2.33 would provide a measure for the instrument's 5th and 1st percentile returns respectively. For the specified time horizon, these market price returns at the 5th and 1st percentiles represent the instrument's variance-covariance Value-at-Risk measure at the 95% and 99% confidence levels respectively. Details of the variance-covariance Value-at-Risk approach applied in this study are detailed in Appendix N.3.

MSCI (1999) and Dowd (2003) detail the advantages in applying the variance-covariance Value-at-Risk model. These advantages include the model's intuitive nature and its ability to measure the change in an instrument's Value-at-Risk incrementally. The limitation is that the model assumes a financial instrument's market price returns to be normally distributed. Such an assumption ignores the presence of significant skewness in the returns distribution that may result in potentially misleading results. This model is stated to be unsuitable when applied to measure Value-at-Risk for option derivative instruments and other instruments with non-linear payment profiles. In addition, this model is not suited when modelling extreme events, such as event scenarios applied in stress testing.

2.12.2 Historical Simulation Model

The Value-at-Risk measure for a financial instrument computed with the historical simulation model, detailed by JPMorgan Chase and Reuters (1996) and Dowd (2003), involves a process based on the financial instrument's actual historical market price return *distribution*. This model considers that future price movements would be similar to those that have occurred in the past. This Value-at-Risk model is specified by calculating a number of historical market price returns for a given *time horizon*. For example, if a firm would like to hold a financial instrument for 250 days, represented by a Value-at-Risk time horizon of 250 days, then a number of the instrument's past prices that are 250 days apart are applied on a *rolling basis* to compute the instrument's historical returns. From these historical returns, the model constructs a distribution. This distribution is effectively the returns arranged, or *sorted*, from the highest to the lowest level.

From this distribution, the sorted return that represents the desired confidence level would be read. For a 95% confidence level, that represents the 0.05 probability level, the actual market price return at the 5th percentile would be read from the distribution. For a 99% confidence level, that represents the 0.01 probability level, the actual return at the 1st percentile would be read. For example, if a firm applies the historical simulation Value-at-Risk model by constructing a distribution based on 101 historical market price return observations, then this 5th percentile would be the 96th level when moving along the distribution from the highest to the lowest sorted returns. Then, the 1st percentile would be the 100th lowest level. This example of the historical Value-at-Risk model computes 101 returns to account for the 0th percentile observation, represented by the 101st (lowermost) level. For the specified time horizon, the financial instrument's market price returns read at the 5th and the 1st percentiles represent the instrument's historical simulation Value-at-Risk measure at the 95% and 99% confidence levels respectively.

The previous example applied 101 historical market price return observations to construct a distribution. However, as referred to earlier and in Appendix N, MSCI (1999) specifies approximately 500 days of returns to construct the distribution. The Basel (2011) specification applies approximately 800 days. To test its null hypothesis, this study applies both the MSCI 500 days, and the Basel 800 days historical market price return observations to construct the distribution. Details of the historical simulation Value-at-Risk approach are presented in Appendix N.4.

MSCI (1999) and Dowd (2003) detail the attractions for applying the historical simulation Value-at-Risk model. These include the model's intuitive nature, ease of use when interpreting its results, ease of implementation, not dependent on the *normal distribution* and has the ability to handle all financial instrument positions including derivative positions. The limitations for this model include the unavailability of historical data for some instruments, its distribution is fully dependent on historical datasets, it has problems with *too short* or *too long* time horizon estimation periods, and it is unable to model future changes in instrument structures.

2.12.3 Monte Carlo Simulation Model

The Value-at-Risk measure for a financial instrument computed with the Monte Carlo simulation model is detailed by JPMorgan and Reuters (1996), Dowd (2003), and Hull (2009). This model applies a future market price return distribution that is constructed using a simulation model. This simulation process considers that a probability distribution for future price movements can be generated by simulating *near-random* stochastic market prices or market price returns.

Metropolis and Ulam (1949) named this simulation process the *Monte Carlo method*. The origin of the Monte Carlo method traces to a particle motion detailed by Brown (1828). Brown examined the movement of pollen particles through the air and determined that the path taken by a particle was as a consequence of its interactions with rapidly moving smaller particles. This *particle path motion* reported by Hull (2009) is famously known as the Brownian motion.

Metropolis and Ulam (1949) found that they were unable to model the path behaviour of some atomic particles using classical mathematical techniques. They propositioned that a simulation method based on the Brownian motion would provide a particle path model that overcame any classical mathematical limitations. To model a particle's motion Metropolis and Ulam proposed an iterative simulation process. This process specified a stochastic model that applied a random probability level between 0 and 1 to a *well-defined* mathematical model. They proposed that the process is repeated, using incremental time steps for a desired time horizon, to produce a single possible particle path or branch. They then proposed that this process should be repeated many times to produce a finite branching graph that represents the simulated particle paths. They concluded that if it were possible for the process to be repeated near or to infinity then the resulting space of branches represented a probability distribution that converges to a statistical mean representing the particle's true value. This would be similar to saying that if a fair coin is tossed an infinite number of times then the chance for the coin landing head side up would converge to a statistical mean value of 0.5.

Applying the same Monte Carlo simulation principle to the path that a financial instrument's price is expected to take during a specified time horizon, would result in a similar finite branching graph. Such a graph would provide a simulated distribution for the instrument's possible prices that may be arranged, or *sorted*, from the highest to the lowest price, or its highest to lowest calculated price returns.

Applying a nearly identical process to the historical Value-at-Risk model, the sorted price return that represents the desired confidence level would be read. For a 95% confidence level, that represents the 0.05 probability level, the simulated price return representing the 5th percentile would be read from the distribution. For a 99% confidence level, that represents the 0.01 probability level, the simulated return at the 1st percentile would be read. For example, if a firm applies the Monte Carlo simulation Value-at-Risk model by constructing a distribution based on 101 simulated price returns, then the 5th percentile return would be the 96th level when moving along the distribution from the highest to the lowest sorted return. Then, the 1st percentile return would simply be the 100th lowest level. This model simulates 101 returns to account for the 0th percentile observation, represented by the 101st (lowermost) level. For the specified time horizon, the financial instrument's returns read at the 5th and 1st percentiles represent the instrument's Monte Carlo simulation Value-at-Risk measure at the 95% and the 99% confidence levels respectively.

The previous example applied 101 simulated price returns to construct a distribution. To test its null hypothesis, this study applies approximately 1 million simulated price returns for the distribution. Details for this Monte Carlo simulation Value-at-Risk approach are presented in Appendix N.5.

MSCI (1999) and Dowd (2003) detail the attractions for applying the Monte Carlo simulation Value-at-Risk model. These include the model's power and flexibility to measure virtually any financial position, it has the ability to measure exotic options and complex positions, and it is not dependent on the *normal distribution*. The limitations for this model are that it is not intuitive, it is difficult to explain, implementation requires computer processing time, implementation is currently costly, and it's results are dependent on the applied mathematical model and stochastic process.

2.12.4 Stress Testing

Hull (2009) specifies stress testing to be a process where a financial instrument or portfolios of financial instruments are evaluated to determine the size of potential losses in response to scenarios based on extreme conditions. These include conditions such as extreme financial market movements. The Value-at-Risk measure is adapted for stress testing by supplying the model with the parameters specified from events that have already taken place. These parameters may also be specified by management based on global economic uncertainties. In addition to the parameters supplied, during stress testing the Value-at-Risk model would be taken beyond its normal probability significance levels.

According to Dowd (2003), the advantages in applying this stress test process include the ability to handle any specific scenario, ability to model extreme events, ability to model what-if scenarios, provide assistance with the risk management function, and the process works well with the Monte Carlo simulation model. According to Dowd (2003) and Abbink (2011) the disadvantages with this process are that it is reliant on how accurately scenarios are specified, and implementation may be complex and difficult.

2.12.5 Backtesting

Backtesting applied to a model, or a *system* used for decision making, is a process that monitors the validity of the model, or system, by comparing its predicted results with actual results. Hull (2009) states that backtesting is a process that involves comparing a financial instrument's predicted Value-at-Risk with its actual market price movements once the prediction period has passed. For a Value-at-Risk model, the backtesting process provides a measure of its accuracy, and also provides a framework to calibrate a particular model. This study applies backtesting to produce the yearly results presented in Table P.2. Details of the backtesting approach applied in this study are presented in Appendix N.7.

2.13 Contemporary Technology Framework

Stated by Banks (2002) and Merton (1995), financial instruments continue to grow in both numbers and complexity of structures. It may be debated that a need to maintain an understanding of complex financial instruments is a critical requirement to develop and implement adaptable and effective accounting, risk, regulatory and technology processes and frameworks, and the corresponding technology interfaces and platforms.

Concentrating on risk management technologies, they have been criticised to be not fully developed (CFA 1997). This lack of risk management systems development has resulted in firms having a restrictive firmwide risk management and disclosing framework. Although noted to exhibit improvement, on the whole, there is criticism regarding technology. In that, technology systems being introduced to manage accounting, risk management and regulatory frameworks need radical re-engineering to accommodate new financial instruments and structures (Merton and Bodie 1996, IASB 2009). A major aspect of this re-engineering would be to recognise effectively and measure risks associated with these instruments and structures. As alluded to in the following paragraphs, these findings are further strengthened during the course of this study's investigations.

To build evidence to either verify or falsify the null hypothesis, this study has developed the relative delta measure by extending the time dependent book-to-market measure specified by Fama and French (2008). The accounting totals and market price based relative delta measure, introduced in Section 2.7 and specified in Section 3.2.4 and Appendix C, has been applied in this study to effectively provide estimates for the difference between the Value-at-Risk calculated from the change in accounting total variables and the Value-at-Risk calculated from the market price return variable (see Section 3.9.5). The accounting and market price based relative delta measure, in the context of its relation to the Value-at-Risk measure, has also been applied to estimate how its varying levels affect the Basel Regulatory capital requirement (see Section 3.9.6).

Following on from this, it may be contended, that by observing the book-to-market ratio's accounting and market components, and their relation to the level of financial distress risk, the accounting discipline has a role in risk management. In addition, within the context of risk management as prescribed by the Basel (2011) regulatory framework, the capital requirement formula that is utilised to manage risk is founded primarily on approaches applied to calculate accounting totals. This study itself emphasises the role of accounting within a risk management context by the development of the relative delta measure. The relative delta measure, built on accounting and market price variables, as stated, is developed to test its null hypothesis. This study also proposes that the relative delta measure, applied to measure a firm's exposure to financial distress risk, incorporates and informs at the firmwide level, and also at the national and international regulatory risk management levels. It is evident, based on the discussion thus far, that the relative measurement of accounting total variables to the market price variable would alone provide a beneficial measure of financial distress risk within both the regulatory and firmwide risk management frameworks.

To implement such a regulatory and risk management framework requires a resolution to a timing limitation. This limitation arises from the disparity between the measurement frequency of accounting variables to that of market price variables. Market prices are reported virtually on a real-time basis; however, audited accounting totals are reported on a yearly basis. Ideally, to allow the accurate and timely capture of accounting information and market price information, both variables would require updating and measuring at the same frequency. To measure *relative Value-at-Risk levels* or relative delta levels it would be ideal to have a measurement frequency that is *real-time* or as close to real-time as possible.

The current accounting and risk management technology frameworks reflect this timing issue. Although risk management systems have come under criticism (CFA 1997); Jorion (2009) reports that risk management systems have advanced to such a level that they can generally be updated on a *real-time* basis with current market price and modelled price information. With accounting systems, once items are posted, prices for those items are difficult to update on a real-time basis. This is mainly due to the underlying legacy mainframe accounting systems. Banks (2002) evaluates that in general, technology processes implemented in the mid 1990s are rigid and focused only on what needed to be done at the time with little alternative for product change.

From the perspective of process components, a schematic overview of a current characteristic technology framework applied in a bank is presented in Figure 2.1.

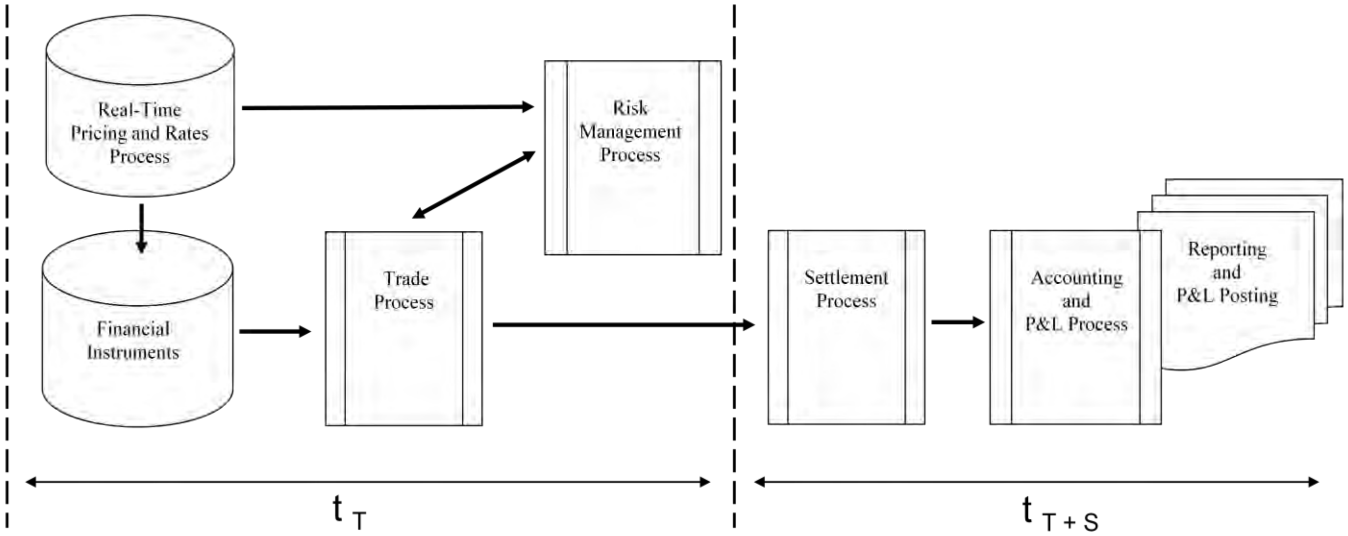
Figure 2.1 details that, at time $t = T$, denoted by t_T (Transaction/Trade time), financial instruments are updated on a real-time basis with current prices. The priced financial instruments are available to the trade process and the risk management process at time

t_T. If an instrument is traded at time t_T, the transaction is registered at the trade process at time t_T, and the transacted item's price and other details are passed to the settlement process. The settlement process would then generally check the transacted instrument's transaction details, and register its traded price and details at the trade time, T. The settlement of the transacted instrument may be instantaneous or it may take several days, incurring a delay of time S, denoted by t_S (Settlement time). Once the transaction details pass the settlement process the instrument's price and details are posted to and recognised at a quality control process or accounting process at time $t = T$ plus S, denoted by t_{T+S}. Once transaction details are posted to the accounting process, it is difficult for the current accounting systems to attach additional price changes for the transacted instrument or item. Thus, the price applied to the item within the accounting system generally remains at the price level attached after settlement at the time T plus S.

Presented in Section 4.11 and shown in Figure 4.1, this study proposes a technology framework for a bank that principally applies a *real-time* pricing process to the accounting process. Such a technology framework is proposed to allow the measurement of both the accounting total variables and the market price variables on a *real-time* or close to real-time basis.

Figure 2.1 Bank Technology Framework Overview

Current banking technology framework for financial instrument and financial item: pricing, trading, risk management, and accounting.



2.14 Summary

This chapter has presented a review of the Fama and French (2008) time dependent book-to-market ratio treatment, and provided this study's specifications for its extension that is termed the relative delta measure. This chapter discusses recent accounting standard developments focusing on the IASB accounting standards, and discusses literature that subjects the 2005 IASB's IFRS accounting standards implementation. The IASB accounting standards are reviewed to lay a foundation to extend current literature. It is proposed to extend current literature by testing UK listed banks' accounting quality reactions before and after the 2005 IFRS accounting implementation. These accounting quality reactions specified as being generally quantified by the proposed relative delta measure. The important relationships between accounting quality, accounting quality risk, value relevance, the relative delta measure and other key measures applied in this study have been formally introduced. The contemporary risk measurement methods, and the Value-at-Risk approach and its models are reviewed together with stress testing and backtesting approaches. The Basel regulatory framework is reviewed from the context of its minimum capital requirement. The Basel regulatory framework's relation to Value-at-Risk is introduced in order to lay the foundation to apply the relative delta measure to gauge and adjust for financial distress risk at the regulatory level. This chapter also presents an overview regarding technology considerations to implement what this study proposes as the accounting Value-at-Risk[31], and the proposed relative delta measure and its application at the regulatory level.

[31] This study proposes the measurement of the *change in accounting totals Value-at-Risk* that applies the key accounting total *change variables* and is termed the *accounting totals Value-at-Risk*. This same term also refers to the *accounting totals Value-at-Risk* that applies the *total variable* in place of the *change variable*.

Chapter 3 Research Methodology

3.1 Chapter Introduction

This chapter introduces the methodology applied in this research that is guided by the hypothesis based deductive methodology, termed the hypothetico-deductive methodology, combined with the falsification theory (Popper 1992).

The methodological approach first details the research question that this study examines. The research question, presented in Section 3.2, is then framed as a null hypothesis. This null hypothesis is presented in Section 3.3.1. The null hypothesis is then examined by gathering evidence from the tests presented in summary in Section 3.8 and presented in detail in Section 3.9 and Appendix M to Appendix R. The results from these tests are then assessed to determine if they provide evidence to confirm the expectations of conclusive statements presented in Chapter 5. The evidence from these tested statements is then assessed to deduce whether they *add strength to verify* the null hypothesis or if they *add strength to falsify* or weaken the null hypothesis.

One of the primary measures used to test the null hypothesis is the *relative delta measure*. Sections 2.7 and 3.2.4 details the development of the relative delta measurement system from the extension of the Fama and French (2008) treatment of the book-to-market ratio. This extension maintains the relative delta to be a measure of financial distress risk. In Section 2.9, this measure is presented also to reflect levels of accounting quality and information bias. Specified in Section 3.9.6 and Appendix K, the relative delta is applied to determine the role the accounting standards played in the context of the Basel risk management framework.

To test deductively the null hypothesis this chapter specifies the quantitative analytical measures applied in this study. These measures include the Value-at-Risk measure, descriptive statistics, percentage changes, material significance of *difference* - calculated by applying the introduced *relative delta measure*, and material significance of changes to the Basel regulatory capital requirement - calculated by applying the introduced *regulatory relative delta measure*. This study principally applies the ordinary-least-squares time series and cross-sectional regression analysis approaches and the Pearson correlation measure to determine levels of statistical significance for selected tests applied to its null hypothesis.

This chapter specifies the sample survey selection criteria and the time series ranges applied in this study, and the selected firms for survey are presented. The criteria for the selection of a control group are specified and the control group firms are also presented. This chapter also presents the information and data collection methods used in this study.

To deduce the effects of general economic and market conditions during the 2005 accounting change, the tests applied to the UK Gross Domestic Product figures, general market variables and market and accounting variables are presented in this chapter. These tests are conducted in addition to those aimed directly at testing the null hypothesis.

3.2 Research Question

The research question pertaining to this study is:

Does accounting quality improve for UK banks that adopted the IFRS accounting standards in 2005? That is, does the difference between the change in accounting totals and the change in market price decrease for UK banks that adopted the IFRS accounting standards in 2005 when compared to before the adoption?

Refining the research question further to address each of the key financial statement accounting variables, the research question poses the following *supplementary questions*:

For the UK banks, from before to after 2005, what was the change in the level of difference between:

1) The change in the total equity variable and the change in the market price variable?

2) The change in the total assets variable and the change in the market price variable?

3) The change in the total liabilities variable and the change in the market price variable?

4) The change in the net income variable and the change in the market price variable?

3.2.1 Research Question Examination

In a general sense, the research question asks - for the UK banks that changed accounting standards in 2005, what was the level of difference between the change in key financial statement accounting variables and the change in the market price variable before and after the accounting change? Importantly, the question asks - were the before and after 2005 levels of *difference* between the change variables significant?

As stated, the motivation for this study's research question is to determine the effects of the 2005 accounting change on the accounting and market price variable relationship. The general approach this study applies to quantify this relationship between accounting values and the market price value is attributed to the book-to-market ratio effect detailed by Fama and French (1992, 2008), Peterkort and Nielsen (2005) and Bodie et al. (2002). They detail that the book-to-market ratio effect determines that firms with a high book-to-market ratio exhibit a high level of exposure to financial distress risk, and firms with a low book-to-market ratio exhibit a lower level of financial distress risk. If this effect were related to the measure of difference between the change in key accounting total variables and the change in the market price variable then such an effect would provide an analysis of a bank's level of exposure to financial distress risk. Moving full circle, if the financial distress risk effect were considered to be directly proportional to the level of difference between the accounting and market price change variables for the UK banks, it would be possible to determine the levels of financial distress risk exposure the banks experienced before and after the 2005 accounting change. Aligning to the research question, and from the relationships presented in Section 2.9, this measure of the level of difference between the change variables would also translate to the level of accounting quality experienced by the banks before and after the 2005 change.

It must be noted that although this study applies the interpretation from Fama and French (1992, 2008), Peterkort and Nielsen (2005) and Bodie et al. (2002) that high book-to-market value firms exhibit exposures to financial distress risk, Dichev (1998), Griffin and Lemmon (2002), and Zaretsky and Zumwalt (2008) find that low book-to-market value firms exhibit exposures to distress risk. As stated, this study primarily applies the former interpretation of financial distress risk. However, both approaches support this study's definition of accounting quality, where measures of both high and low levels of book-to-market value translate to a decrease in the level of accounting quality, and thus also translate to an increase in the level of exposure to accounting quality risk. This relationship between accounting quality, the book-to-market ratio and financial distress risk is quantified by the difference component and the relative delta measure (see Appendix C, Table C.1 to Table C.3 and Appendix D, Table D.1). The relationship between accounting quality, financial distress risk, the difference component and the relative delta measure is presented in Section 2.9.3. In addition, Section 2.9.3 presents the relationship between the relative delta measure and the difference component, and their relationship to the measure of information bias (IASB 2011) between the accounting and market price data elements.

Having introduced this general measurement approach, a testable null hypothesis that addresses the research question must determine the level of difference between the change variables, and the significance attached to this level of difference for before and after the accounting standards adoption. To measure and thus examine this level of difference this study extends the Fama and French (2008) structure for the time dependent treatment of the book-to-market ratio. This extension is discussed in Section 2.7, and gradually developed from Sections 3.2.2 to 3.2.5 that starts from the book-to-market ratio's measure of financial distress risk and then onto its relation to the *difference component*. This *difference component*, strengthened by its relationship to the relative delta and importantly to the measure of accounting quality (see Section 2.9.3), is specified in Sections 3.2.4 and 3.2.5. In these sections the *difference component* is specified in relation to the relative delta measure, prior to the relative delta's extensive application in testing this study's null hypothesis specified in Section 3.3.1.

3.2.2 The Fama and French Book-to-Market Ratio and Financial Distress Risk

From the Fama and French (1992, 2008) findings, it is evidenced that a firm's book-to-market ratio provides a measure of its future returns and its future level of exposure to financial distress risk. Fama and French (2008) also provide evidence that a firm's evolution of the book-to-market ratio contains information that improves predictions for expected returns and thus also improves predictions for a firm's level of exposure to financial distress risk (see Chapter 1, Sections 2.1, 2.3, 3.2.1, Appendix A, Appendix B and Appendix C).

As alluded to earlier, to examine this study's research question and permit the direct analysis of its null hypothesis, this research develops the *relative delta measure* by extending the Fama and French time dependant treatment for the book-to-market ratio (Fama and French 2008).

The relative delta measure develops the *book-to-market effect* detailed by Fama and French (1992, 2008), Peterkort and Nielsen (2005) and Bodie et al. (2002). The book-to-market effect relies on the book-to-market ratio to equate to *one* when there is no inherent perception of financial distress related risk, and above or below *one* when a perception of financial distress risk is present or *increasingly not* present respectively. For a firm's financial stock instrument, the level by which the book-to-market measure is above or below *one*, respectively determines whether the financial instrument is undervalued or overvalued (Fama and French 1992, 2008, Peterkort and Nielsen 2005). Aligned to the components of the book-to-market ratio, this study specifies the book value component to be the measure of change in an *accounting total variable* for a specified time period, and the market price component to be the measure of the change in the *market price variable* for the same specified time period (Fama and French 2008). Adapted from Fama and French (2008) this study determines the following relationships:

$$dAC_{t-1,t} = ln\left(\frac{AC_t}{AC_{t-1}}\right) \tag{3.1}$$

$$dM_{t-1,t} = ln\left(\frac{P_t}{P_{t-1}}\right) \tag{3.2}$$

Where:

$dAC_{t-1,t}$ = change in the accounting variable between period *t* and *t – 1*

$dM_{t-1,t}$ = change in the market price variable between the period *t* and *t – 1*

ln= natural logarithm to the base e

AC_t = measure of the accounting variable at time *t*

AC_{t-1} = measure of the accounting variable at time *t – 1*

P_t = measure of the market price variable at time *t*
P_{t-1} = measure of the market price variable at time *t – 1*
t = time index

Equations (3.1) and (3.2) are then combined to provide a relative measure of the change in the accounting variable for a given time period to the change in the market price variable for the same time period. Combining equation (3.1) and (3.2) defines:

$$\delta_{t-1,t} = dAC_{t-1,t} - dM_{t-1,t} \tag{3.3}$$

Where:
$\delta_{t-1,t}$ = relative delta: change in the accounting variable for a unit change in the market price variable between the period *t* and *t – 1*
$dAC_{t-1,t}$ = change in the accounting variable between the period *t* and *t – 1*
$dM_{t-1,t}$ = change in the market price variable between the period *t* and *t – 1*
t = time index

It is possible to apply now the definition of the book value to market value relationship specified by Fama and French (1992, 2008), Peterkort and Nielsen (2005) and Bodie et al. (2002), to that of the relative delta measure specified in equation (3.3). It is so that if there is no perception of financial distress related risk for a firm's financial stock instrument, then the relative delta measure specified in equation (3.3) must equate to zero (= 0). If financial distress related risk is present then equation (3.3) may be evaluated as a measure for a firm's level of exposure to financial distress risk. In addition, given the relationships presented in Section 2.9.3 and 3.2.1 (see also Appendix D, Table D.1) the level of financial distress risk measured using the relative delta measure in equation (3.3) also translates to a measure of a firm's accounting quality.

3.2.3 The Fama and French Book-to-Market Ratio and the Difference Component

The relation between the book-to-market effect and the relative delta measure applied in this study to test its null hypothesis has been discussed in Section 3.2.2. In addition, Section 3.2.2 and Appendix C, and Table C.1, have introduced the relation between the book-to-market effect, financial distress risk and the relative delta measure.

As a prelude and foundation for Section 3.2.4, this section presents the details for the development of the relative delta measure from the Fama and French (2008) specification for the time *change* component from the book-to-market ratio. This section also presents the specification for the application of the relative delta measure as a quantitative analytical method to measure the difference between the change in the key accounting total variables and the change in the market price variable.

Fama and French (2008) develop the *change* of the book-to-market ratio (BM) by applying the following relationship:

$$BM_t = BM_{t-k} + \left[dB_{t-k,t} - dM_{t-k,t}\right] \tag{3.4}$$

Where:
BM_t = natural log of book-to-market ratio at time t
BM_{t-k} = natural log of book-to-market ratio at time $t - k$
B = book equity per share measure for a firm
M = market price for 1 share of the firm's stock
$dB_{t-k,t}$= natural log change in book equity value from time $t - k$ to time t
$dM_{t-k,t}$= natural log change in market price from time $t - k$ to time t
t = time index
k = chronological time interval

The term $\left[dB_{t-k,t} - dM_{t-k,t}\right]$ is the component that measures the *change*, or the *difference*, of the book-to-market ratio. This *change component*, or *difference component*, of the book-to-market ratio Fama and French (2008) specify as the *difference* between the change in book equity, dB, and the change in market price, dM, for the time period $t - k$ to t.

Specifying this *difference component* from equation (3.4) gives the following equation:

$$\delta BM_{t-k,t} = dB_{t-k,t} - dM_{t-k,t} \tag{3.5}$$

Where:
$\delta BM_{t-k,t}$ = difference between the change in the book equity value and the change in the market price from time $t - k$ to time t
$dB_{t-k,t}$= natural log change in book equity value from time $t - k$ to time t

$dM_{t-k,t}$= natural log change in market price from time $t - k$ to time t
t = time index
k = chronological time interval

Fama and French (2008) specify the construction of the BM_t ratio in equation (3.4) using approaches: i) the book equity value per total market value, presented in equation (3.6); and ii) the book equity value per share per unit stock price, presented in equation (3.7):

$$BM_t = \frac{B_t}{(S_t \times M_t)} \tag{3.6}$$

Where:
BM_t = book-to-market ratio at time t specified using *book equity to market value*
$(S_t \times M_t)$ = market value[32] at time t
S = total number of a firm's issued shares outstanding in the stock market
B= book equity value
M= stock market price of 1 share for the firm's stock
S_t = total number of the firm's issued shares outstanding in the stock market at time t
B_t= book equity value at time t
M_t= stock market price of 1 share for the firm's stock at time t
t = time index

$$BM_t = \frac{B_t}{S_t} \times \frac{1}{M_t} \tag{3.7}$$

Where:
BM_t = book-to-market ratio at time t specified using *book equity per share to stock market price*
$\frac{B_t}{S_t}$ = book equity per share
S = total number of a firm's issued shares outstanding in the stock market
B= book equity value
M= stock market price for 1 share of the firm's stock
S_t = total number of the firm's issued shares outstanding in the stock market at time t

[32] Fama and French (2008) refer to *market value* as *market capitalisation* or *market cap.*

B_t= book equity value at time t

M_t= stock market price of 1 share for the firm's stock at time t

t = time index

Rewriting equation (3.4), using the book-to-market specification presented in equation (3.6) that examines the book-to-market ratio using the *market* value variable, gives:

$$BM_t = BM_{t-k} + \left[dB_{t-k,t} - d(S \times M)_{t-k,t}\right] \quad (3.8)$$

Where:

BM_t = natural log book-to-market ratio at time t

BM_{t-k} = natural log book-to-market ratio at time $t-k$

S = total number of a firm's issued shares outstanding in the stock market

B= book equity value

M= stock market price for 1 share of the firm's stock

$dB_{t-k,t}$= natural log change in book equity value from time $t-k$ to time t

$d(S \times M)_{t-k,t}$ = natural log change in market value from time $t-k$ to time t

t = time index

k = chronological time interval

Rewriting equation (3.8) in natural log form and expanding for time periods t and $t-k$, gives:

$$ln\left(\frac{B_t}{M_t}\right) = ln\left(\frac{B_{t-k}}{M_{t-k}}\right) + \left[ln\left(\frac{B_t}{B_{t-k}}\right) - ln\left(\frac{\{S \times M\}_t}{\{S \times M\}_{t-k}}\right)\right] \quad (3.9)$$

Where:

$ln\left(\frac{B_t}{M_t}\right)$ = natural log book-to-market ratio at time t

$ln\left(\frac{B_{t-k}}{M_{t-k}}\right)$ = natural log book-to-market ratio at time $t-k$

$ln\left(\frac{B_t}{B_{t-k}}\right)$ = natural log change in book equity value from time $t-k$ to time t

$ln\left(\frac{\{S \times M\}_t}{\{S \times M\}_{t-k}}\right)$ = natural log change market value from time $t-k$ to time t

ln = natural logarithm to the base e

k = chronological time interval

t = time index

Specifying the *difference component* from equation (3.5) using equation (3.9) gives:

$$\delta BM_{t-k,t} = ln\left(\frac{B_t}{B_{t-k}}\right) - ln\left(\frac{\{S \times M\}_t}{\{S \times M\}_{t-k}}\right) \tag{3.10}$$

Where:

$\delta BM_{t-k,t}$ = difference between the change in the book equity value and the change in the market price from time $t-k$ to time t. The other parameter definitions are the same as equation (3.9).

Rewriting equation (3.4), using the book-to-market ratio specification presented in equation (3.7) to examine now the book-to-market ratio approach that uses the *equity per share* variable, gives:

$$BM_t = BM_{t-k} + \left[d(B/S)_{t-k,t} - dM_{t-k,t}\right] \tag{3.11}$$

Where:

BM_t = natural log book-to-market ratio at time t

BM_{t-k} = natural log book-to-market ratio at time $t-k$

S = total number of a firm's issued shares outstanding in the stock market

B= book equity value

M= stock market price for 1 share of the firm's stock

$dM_{t-k,t}$= natural log change in market price (market price return) from time $t-k$ to time t

$d(B/S)_{t-k,t}$ = natural log change in equity per share from time $t-k$ to time t

t = time index

k = chronological time interval

Rewriting equation (3.11) in natural log form and expanding for time period $t-k$ to t, gives:

$$ln\left(\frac{B_t}{M_t}\right) = ln\left(\frac{B_{t-k}}{M_{t-k}}\right) + \left[ln\left(\frac{\{B/S\}_t}{\{B/S\}_{t-k}}\right) - ln\left(\frac{M_t}{M_{t-k}}\right)\right] \tag{3.12}$$

Where:

$ln\left(\frac{B_t}{M_t}\right)$ = natural log book-to-market ratio at time t

$ln\left(\frac{B_{t-k}}{M_{t-k}}\right)$ = natural log book-to-market ratio at time $t-k$

$ln\left(\frac{\{B/S\}_t}{\{B/S\}_{t-k}}\right)$ = natural log change in book equity per share from time $t-k$ to time t

$ln\left(\frac{M_t}{M_{t-k}}\right)$ = natural log change in market price from time $t-k$ to time t

Specifying the *difference component* from equation (3.5) using equation (3.12) gives:

$$\delta BM_{t-k,t} = ln\left(\frac{\{B/S\}_t}{\{B/S\}_{t-k}}\right) - ln\left(\frac{M_t}{M_{t-k}}\right) \qquad (3.13)$$

Where:

$\delta BM_{t-k,t}$ = difference between the change in the book equity value and the change in the market price from time $t-k$ to time t. The other parameter definitions are the same as equation (3.12).

Specifying the book-to-market ratio's *difference component* by applying the market value based measure presented by equation (3.10) or the book equity per share measure presented by equation (3.13) generally leads to the same result (Fama and French 2008).

This study analyses the before and after 2005 book-to-market ratio effects by applying both the market value and the equity per share measurement approaches. The market value effect is analysed by determining its relationship with the market price variable (see Appendix T). The equity per share effect is analysed by applying equation (3.12) to determine the relationship between the equity per share component and the market price component (see Section 4.3.2).

The *difference* measurements specified in equation (3.10) and equation (3.13), do not react to a firm's market price adjustments from events such as share issuance or share buybacks, events that effectively change the firm's number of outstanding shares in the market. However, the relative delta difference measurement specified in Section 2.7, criterion 3, applies the change in the total equity variable that is sensitive to the changes in outstanding shares. To reflect this effect from changes in shares on the measure of difference between the change in the book equity variable and the change in the market price variable, this study extends the Fama and French (2008) specification by introducing the following relationship:

$$\delta EM_{t-k,t} = \left[dE_{t-k,t} - dM_{t-k,t}\right] \quad (3.14)$$

Where:

$\delta EM_{t-k,t}$ = difference between the change in the total equity variable to the stock market price variable from time $t-k$ to t

E = total equity representing the balance sheet measure of the total shareholders' equity for a firm

M = stock market price for 1 share of the firm's stock

$dE_{t-k,t}$ = natural log change in the total equity variable from time $t-k$ to time t

$dM_{t-k,t}$ = natural log change in the market price variable from time $t-k$ to time t

t = time index

k = chronological time interval

Rewriting equation (3.14) in natural log form gives:

$$\delta EM_{t-k,t} = \left[ln\left(\frac{E_t}{E_{t-k}}\right) - ln\left(\frac{M_t}{M_{t-k}}\right)\right] \quad (3.15)$$

Where:

$\delta EM_{t-k,t}$ = difference between the change in the total equity variable to the stock market price variable from time $t-k$ to t

E_t = total equity at time t

M_t = market price at time t

E_{t-k} = total equity at time $t-k$

M_{t-k} = market price at time $t-k$

ln = natural logarithm to the base e

t = time index

k = chronological time interval

3.2.4 The Relative Delta Measure

From the Fama and French (2008) relative change component specified in equation (3.5) and its development to the relative delta measure specified in equation (3.14), the relative delta measure for the general accounting total change to the market price change is specified by (note that equation (3.16) specifies the same relationship as equation (3.3)):

$$\delta_{t-1,t} = dAC_{t-1,t} - dM_{t-1,t} \quad (3.16)$$

Where:

$\delta_{t-1,t}$ = relative delta measure between the period t and $t-1$

$dAC_{t-1,t}$ = change in the accounting variable between the period t and $t-1$

$dM_{t-1,t}$ = change in the market price variable between the period t and $t-1$

t = time index

The relative delta measure is developed by this study to assist in addressing its research question. As stated earlier, it does so by providing a framework to test the null hypothesis specified in Section 3.3.1. That is, the relative delta measure is applied to determine the change to the levels of difference between the change in key accounting variables and the change in the market price variable, effectively measuring the *difference component*, for before and after the 2005 accounting change. The relative delta measure is expected to align in the same way to the measure for financial distress risk, as does the specification for the book-to-market ratio detailed by Fama and French (2008, 1992), Peterkort and Nielsen (2005) and Bodie et al. (2002).

3.2.5 Key Accounting Elements and the Difference Component and Relative Delta

From the general relative delta form presented in equation (3.16), this section presents the development of the individual accounting totals to market price relative delta measures. These relative delta measures are applied to test the detailed null hypotheses presented in Section 3.3.2. The evidence from these tests is applied to test the null hypothesis presented in Section 3.3.1.

The key accounting total *elements*[33] from the financial statement that are applied in this study and specified by the IASB (2012) are:

[33] The term accounting *element* is used in this study to maintain continuity with the IASB (2008, 2009, 2011, 2012) specification, and has the same general meaning as the term accounting variable.

1) Total Shareholders' Equity (*Total Equity*)
2) Total Assets
3) Total Liabilities
4) Net Income

Reproducing the form presented in equation (2.3), the elements total shareholders' equity, total assets and total liabilities are presented on the balance sheet financial statement and maintain the following generalised relationship (IASB 2012):

$$Equity\ = Assets - Liabilities \tag{3.17}$$

The net income element is presented on the income statement, and represents the change in the level of the assets and liabilities elements for the financial year and thus also provides a guide for total equity for that financial year. The net income element has a direct relation to equity other than for contributions from, and distributions to, equity participants (IASB 2012).

Applying the Fama and French (2008) notation and restating equation (3.14) (with different bracketing) specifies the following set of equations. The set of equations are applied to determine the difference between the change in the key accounting variables and the change in the market price variable and is specified as follows:

$$\delta EM_{t-k,t} = (dE_{t-k,t} - dM_{t-k,t}) \tag{3.18}$$

$$\delta AM_{t-k,t} = (dA_{t-k,t} - dM_{t-k,t}) \tag{3.19}$$

$$\delta LM_{t-k,t} = (dL_{t-k,t} - dM_{t-k,t}) \tag{3.20}$$

$$\delta IM_{t-k,t} = (dI_{t-k,t} - dM_{t-k,t}) \tag{3.21}$$

Where in equations (3.18) to (3.21):
$\delta EM_{t-k,t}$ = difference between the change in the total shareholders' equity variable and the stock market price variable from time $t-k$ to t

$\delta AM_{t-k,t}$ = difference between the change in the total assets variable and the stock market price variable from time $t-k$ to t

$\delta LM_{t-k,t}$ = difference between the change in the total liabilities variable and the stock market price variable from time $t-k$ to t

$\delta IM_{t-k,t}$ = difference between the change in the net income variable to the stock market price variable from time $t-k$ to t

E = balance sheet measure of the total shareholders' equity for a firm

A = balance sheet measure of the total assets for the firm

L = balance sheet measure of the total liabilities for the firm

I = income statement measure of net income for the firm

M = stock market price for 1 share of the firm's stock

$dE_{t-k,t}$ = natural log change in the total shareholders' equity variable from time $t-k$ to time t

$dA_{t-k,t}$ = natural log change in the total assets variable from time $t-k$ to time t

$dL_{t-k,t}$ = natural log change in the total liabilities variable from time $t-k$ to time t

$dI_{t-k,t}$ = natural log change in the total net income variable from time $t-k$ to time t

$dM_{t-k,t}$ = natural log change in the market price variable from time $t-k$ to time t

ln = natural logarithm to the base e

t = time index

k = chronological time interval

This study terms equations (3.18), (3.19), (3.20) and (3.21) as the *relative delta measures* and are developed in Appendix C to Appendix E and specified in Sections E.1.1, E.1.2, E.1.3 and E.1.4.

3.3 Null Hypothesis and Detailed Null Hypotheses

To address the research question presented in Section 3.2, this study's research design states and tests the following null hypothesis and a system of detailed null hypotheses. These hypotheses are specified by referring to the *difference component* and its measurement framework, the relative delta, specified in Sections 3.2.4 and 3.2.5.

3.3.1 Null Hypothesis

This study structures its approach to address the research question by formulating a *general* null hypothesis, H_0. The *general* null hypothesis is specified as:

H_0: Accounting quality in UK banks was not affected by the adoption of the IFRS accounting standards in 2005. For the UK banks that adopted the new accounting standards in 2005, there is no significant difference between the change in accounting totals and the change in market price after 2005 when compared to the level of difference before.

The null hypothesis, H_0, is specified to determine the following hypothetical relationship:

$$H_0: \delta_{t \leq 2004} = \delta_{t \geq 2005} \qquad (3.22)$$

Where for the banks in the UK banking sector:
H_0 = difference between the key accounting variables and market price variable null hypothesis
$\delta_{t \leq 2004} = \delta_{t \geq 2005}$ = difference between the change in key accounting variables and the change in the market price variable for before and after the 2005 accounting change
$t \leq 2004$ = measure of time in years that specify the time interval 1994 to 2004
$t \geq 2005$ = measure of time in years that specify the time interval 2005 to 2008

To test the null hypothesis a set of detailed null hypotheses are specified that are founded on the supplementary research questions presented in Section 3.2.

3.3.2 Detailed Null Hypotheses

Founded on and aligned to the supplementary research questions presented in Section 3.2, and derived from the null hypothesis specified in Section 3.3.1, a set of *detailed null hypotheses* are specified and tested by applying the relative delta *measures* presented in equations (3.18) to (3.21) in Section 3.2.5. The set of detailed null hypotheses is specified to take the following form:

For UK banks, from before to after 2005, there was no significant change to the level of difference between:

1) $H_{0:E}$: *the change in the total equity variable to the change in the market price variable.*

2) $H_{0:A}$: *the change in the total assets variable to the change in the market price variable.*

3) $H_{0:L}$: *the change in the total liabilities variable to the change in the market price variable.*

4) $H_{0:I}$ *the change in the net income variable to the change in the market price variable.*

The *detailed null hypotheses* aim to provide a structure to test the *null hypothesis*, and provide tests based on each key accounting variable to the market price variable. Derived from the relative delta equations (3.18), (3.19), (3.20) and (3.21) the set of detailed null hypotheses are specified to determine the following hypothetical relationships:

$$H_{0:E}: \delta EM_{t \leq 2004} = \delta EM_{t \geq 2005} \tag{3.23}$$

$$H_{0:A}: \delta AM_{t \leq 2004} = \delta AM_{t \geq 2005} \tag{3.24}$$

$$H_{0:L}: \delta LM_{t \leq 2004} = \delta LM_{t \geq 2005} \tag{3.25}$$

$$H_{0:I}: \delta IM_{t \leq 2004} = \delta IM_{t \geq 2005} \tag{3.26}$$

Where for the banks in the UK banking sector:

$H_{0:E}$ = total shareholders' equity to market price detailed null hypothesis

$H_{0:A}$ = total assets to market price detailed null hypothesis

$H_{0:L}$ = total liabilities to market price detailed null hypothesis

$H_{0:I}$ = net income to market price detailed null hypothesis

$\delta EM_{t \leq 2004} = \delta EM_{t \geq 2005}$ = difference between the change in the total shareholders' equity variable and the market price variable for before and after the 2005 accounting change

$\delta AM_{t \leq 2004} = \delta AM_{t \geq 2005}$ = difference between the change in the total assets variable and the market price variable for before and after the 2005 accounting change

$\delta LM_{t \leq 2004} = \delta LM_{t \geq 2005}$ = difference between the change in the total liabilities variable and the market price variable for before and after the 2005 accounting change

$\delta IM_{t \leq 2004} = \delta IM_{t \geq 2005}$ = difference between the change in the net income variable and the market price variable for before and after the 2005 accounting change

$t \leq 2004$ = measure of time in years that specify the time interval 1994 to 2004

$t \geq 2005$ = measure of time in years that specify the time interval 2005 to 2008

3.4 Research Hypothesis and Detailed Research Hypotheses

From the tests applied, if it is revealed that the null hypothesis is falsified then it is concluded that an alternative hypothesis is accepted. This alternative hypothesis is termed the research hypothesis. This section presents this research hypothesis and also the detailed research hypotheses that correspond to the null hypothesis and the detailed null hypotheses presented in Section 3.3, respectively.

3.4.1 Research Hypothesis

This study's research hypothesis, H_a, that is aligned to the research question specified in Section 3.2 and directed by the null hypothesis specified in Section 3.3.1, takes the following form:

H_a: *Accounting quality in UK banks was affected after the adoption of the IFRS accounting standards in 2005. For the UK banks that adopted the new accounting standards in 2005, there was a significant difference between the change in accounting totals and the change in market price after 2005 when compared to before.*

The research hypothesis, H_a, is specified to determine the following hypothetical relationship:

$$H_a: \delta_{t \leq 2004} \neq \delta_{t \geq 2005} \quad (3.27)$$

Where for the banks in the UK banking sector:

H_a = difference between the key accounting variables and market price variable research hypothesis

$\delta_{t \le 2004} \ne \delta_{t \ge 2005}$ = difference between the change in key accounting variables and the change in the market price variable for before and after the 2005 accounting change

$t \le 2004$ = measure of time in years that specify the time interval 1994 to 2004

$t \ge 2005$ = measure of time in years that specify the time interval 2005 to 2008

The research hypothesis, H_a, is the alternative hypothesis that is accepted if this research is unable to significantly verify its null hypothesis. The null hypothesis's level of verifiability is determined principally on evidence from tests conducted on the set of detailed null hypotheses.

The relationship between the research hypothesis to that of the null hypothesis is maintained between a set of *detailed research hypotheses* to the set of *detailed null hypotheses* that is specified in Section 3.3.2. The *detailed research hypotheses* specify a set of alternative hypotheses that are accepted if this research fails to verify its corresponding *detailed null hypotheses*.

3.4.2 Detailed Research Hypotheses

The detailed research hypotheses, directed by the set of detailed null hypotheses specified in Section 3.3.2, take the following form:

For UK banks, from before to after 2005, there was a significant change to the level of difference between:

1) $H_{a:E}$: *the change in the total equity variable to the change in the market price variable.*

2) $H_{a:A}$: *the change in the total assets variable to the change in the market price variable.*

3) $H_{a:L}$: *the change in the total liabilities variable to the change in the market price variable.*

4) $H_{a:I}$ *the change in the net income variable to the change in the market price variable.*

As stated earlier, and to emphasise, the set of detailed research hypotheses are the set of alternative hypotheses that are accepted if this research is unable to significantly verify its corresponding detailed null hypotheses specified in equations (3.23), (3.24), (3.25), and (3.26) presented in Section 3.3.2. Based on the relative delta relationships specified in equations (3.18), (3.19), (3.20) and (3.21) the set of detailed research hypotheses specify the following hypothetical relationships:

$$H_{a:E}: \delta EM_{t \leq 2004} \neq \delta EM_{t \geq 2005} \tag{3.28}$$

$$H_{a:A}: \delta AM_{t \leq 2004} \neq \delta AM_{t \geq 2005} \tag{3.29}$$

$$H_{a:L}: \delta LM_{t \leq 2004} \neq \delta LM_{t \geq 2005} \tag{3.30}$$

$$H_{a:I}: \delta IM_{t \leq 2004} \neq \delta IM_{t \geq 2005} \tag{3.31}$$

Where for the banks in the UK banking sector:
$H_{a:E}$ = difference between the total shareholders' equity and market price detailed research hypothesis
$H_{a:A}$ = difference between the total assets and market price detailed research hypothesis
$H_{a:L}$ = difference between the total liabilities and market price detailed research hypothesis
$H_{a:I}$ = difference between the net income and market price detailed research hypothesis
$\delta EM_{t \leq 2004} \neq \delta EM_{t \geq 2005}$ = difference between the change in the total shareholders' equity variable and the market price variable for before and after the 2005 accounting change
$\delta AM_{t \leq 2004} \neq \delta AM_{t \geq 2005}$ = difference between the change in the total assets variable and the market price variable for before and after the 2005 accounting change
$\delta LM_{t \leq 2004} \neq \delta LM_{t \geq 2005}$ = difference between the change in the total liabilities variable and the market price variable for before and after the 2005 accounting change
$\delta IM_{t \leq 2004} \neq \delta IM_{t \geq 2005}$ = difference between the change in the net income variable

and the market price variable for before and after the 2005 accounting change

$t \leq 2004$ = measure of time in years that specify the time interval 1994 to 2004

$t \geq 2005$ = measure of time in years that specify the time interval 2005 to 2008

3.5 Main Variables

The main variables selected in this study to test its null hypothesis are presented in the following Table 3.1:

Table 3.1 Main Variable Selection

The table shows the main variables tested. The Variable Description column presents the description for the variables presented in the Variable Name column. The Variable Name column presents the variable names, and where specified, alternative names that are used to refer to the variable presented.

Variable Description	**Variable Name**
Market variables	Market Price also referred to as the: Adjusted Close Price Change in Market Price also referred to as the: Market Price Return Value-at-Risk
Key Accounting Total variables	Total Shareholders' Equity also referred to as the: Total Equity Total Assets Total Liabilities Net Income

The variables presented in Table 3.1 are detailed in Table 3.2. Table 3.2 specifies *additional* main variables that are applied in this research to test its null hypothesis. In addition, Table 3.2 presents the derivation relationships between these variables.

Table 3.2 Main Variable Specifications

The table shows the specifications for the main variables tested. The Variable Name column specifies the descriptive name used to reference the variable. The Symbol column specifies the main symbol used for the variable. The Alternative Symbol column lists other symbols used to specify that same variable. The Derived From column presents the variables, denoted by the variable symbols, used to derive the specified variable. The Units column specifies the units for the referenced variable.

Variable Name	Symbol	Alternative Symbol	Derived From	Units
Adjusted Close Price	P	-	-	$GBPX$ [€]
Market Price Return (Change in Market Price)	M	-	P	-
Market Price Value-at-Risk	V_{dM}	V, V_M, $VaR05$	M	-
Total Equity	TE	-	-	$GBP\ 1\ MM$ [§]
Total Assets	TA	-	-	$GBP\ 1\ MM$ [§]
Total Liabilities	TL	-	-	$GBP\ 1\ MM$ [§]
Net Income	TI	-	-	$GBP\ 1\ MM$ [§]
General Accounting Variable	AC	-	-	-
Change in Total Equity	E	-	TE	-
Change in Total Assets	A	-	TA	-
Change in Total Liabilities	L	-	TL	-
Change in Net Income	I	-	TI	-
General Relative Delta	δ	-	-	-
Equity to Market Price Relative Delta	δEM	$E - M$	E and M	-
Assets to Market Price Relative Delta	δAM	$A - M$	A and M	-
Liabilities to Market Price Relative Delta	δLM	$L - M$	L and M	-
Net Income to Market Price Relative Delta	δIM	$I - M$	I and M	-
General Accounting Value-at-Risk	V_{dAC}	V_{AC}	δAC and V_{dM}	-
Equity Value-at-Risk	V_{dE}	V_E	δEM and V_{dM}	-
Assets Value-at-Risk	V_{dA}	V_A	δAM and V_{dM}	-
Liabilities Value-at-Risk	V_{dL}	V_L	δLM and V_{dM}	-
Net Income Value-at-Risk	V_{dI}	V_I	δIM and V_{dM}	-
Regulatory Relative Delta	ΔR	-	δEM δAM δLM δIM	%

Table notes: [€] GBPX specifies the scale: 0.01 GBP (i.e. pence). [§] GPB 1 MM specifies the scale: 1,000,000 GBP.

The tests performed using the variables in Table 3.2 are presented in summary in Section 3.8 and specified in detail in Section 3.9 and Appendix M, Appendix N and Appendix O. From these tests, the variable relationships that are examined to improve evaluation for this research's null hypothesis are next emphasised by referencing the variables in Table 3.2.

- The Market Price Return variable, derived from the market price variable, is used to evaluate descriptive statistics for the market price return variable's distribution on a yearly basis from 1993 to 2009.

- The Value-at-Risk variable is applied and backtested to determine the frequency of breaches on a yearly basis from 1993 to 2009.

- The Market Price Return variable and the Value-at-Risk variable are tested with selected UK Gross Domestic Product and financial market indices; from 1994 to 2008 using descriptive statistics, correlation analysis and time series regression analysis.

- The Market Price Return variable is tested with the change in accounting total variables: Change in Total Equity, Change in Total Assets, Change in Total Liabilities, and Change in Net Income; from 1994 to 2008 using descriptive statistics, correlation analysis and cross-sectional and time series regression analysis.

- Material significance is evaluated from the Relative Delta Measure on a yearly basis from 1994 to 2008. That is, the change in the accounting total variables: Change in Total Equity, Change in Total Assets, Change in Total Liabilities and Change in Net Income; to the Change in the Market Price variable.

- The Relative Delta Measure is tested with the Value-at-Risk variable from 1994 to 2008 using descriptive statistics, correlation analysis and cross-sectional and time series regression analysis.

3.6 Sample Selection Criteria

To build corroborative evidence to verify the null hypothesis specified in Section 3.3.1, the null hypothesis itself and the *detailed null hypotheses*, specified in Section 3.3.2, are tested. To test these hypotheses a number of firms are selected to represent the population of interest. The sample of firms is selected for the *total* time series range specified in Section 3.7.7.

Guided by the null hypothesis specified in Section 3.3.1, the criteria for the sample selection include banks that operate in the financial sector. This selection criterion is justified, in that, this research examines how UK banks' accounting quality reacted to the 2005 accounting change. Therefore, it stands to reason that banks are selected, as they are this study's population of interest. In addition, it may be contended that banks are the primary institutions that originate and transact financial instruments and other financial instrument products (Bodie et al. 2002). Examination of financial statements prepared and presented by these firms should reflect how financial instruments and also other financial items, were reported during and after the transition event from the accounting standards accepted under UK GAAP to the IASB standards in 2005 (IASB 2009).

To avoid strong sample selection bias, as specified by Fama and French (1992), this research uses the following selection criteria to produce the sample of firms to survey:

1) The firm is classified by the LSE as operating within the banking industry.

2) The firm's primary source of revenue is generated from financial instrument transactions.

3) The firm prepared and presented financial statements under UK GAAP until the year 2005, prior to the IASB accounting standards adoption.

4) The firm prepared and presented financial statements by adopting the IASB's IFRS accounting standards from the year 2005 to year 2008.

5) The firm has observable annually reported financial information that is original

i.e. not restated.

6) The firm has observable financial accounting information that is original and not restated from the year 2005 to 2008.

7) The firm reports its annual (fiscal year) financial information for the 31st day in the month of December each year.

8) The firm reports its interim financial information for the 30th day in the month of June each year.[34]

9) The firm reports, or can be converted to report, financial statement element items: Shareholders' Equity, Total Assets, Total Liabilities, and Net Profit (Profit after tax); with the Great British Pound (GBP) as the base reporting currency.

10) The firm's shares are registered with the LSE.

11) The firm's share price, or market price, is recorded with GBP as the base reporting currency.

12) The firm has observable financial market information from the year 2005 to 2008.

3.6.1 Control Group Selection Criteria

The control group firms are selected based on the same characteristics as the sample firms, as specified in Section 3.6, however, with one important difference that relates to criterion 4. The important difference is that the control group firms maintained its accounting practice under the UK GAAP's accepted accounting standards, prior to, and after, the IASB accounting standards adoption event in 2005. This is opposed to the sample firms that changed reporting standards from those accepted under UK GAAP to the IASB standards after 2005.

[34] Interim information is not analysed in this thesis. However, criterion 8 is included for completeness.

The purpose of the control group is to provide a controlled test environment to help deduce the significance of the selected sample's material and statistical evidence for before and after the 2005 accounting change. It is considered that if the results for sample tests, for before and after this change, materially and statistically match the results produced from the control group, it would provide strong evidence that the observed effects are unlikely to be reactions directly attributable to the accounting change. If there is a lack of significance between the samples and the control group results, for before and after 2005, it may be contended that the results are related to the accounting change as opposed to other effects such as those arising from general economic or market conditions.

3.6.2 Sample and Control Group Selection

The firms selected for the sample are determined based on the criteria specified in Section 3.6. Emphasising criterion 4, the sample selected consists of firms that prepared and presented financial statements by adopting the IASB accounting standards from the year 2005 to year 2008.

As discussed in Section 3.6.1, the firms for the control group are selected on much the same basis as the sample firms, matching the criteria specified in Section 3.6. As stated, the control group does not observe criterion 4 specified in Section 3.6. The control group of firms selected consists of firms that prepared and presented financial statements under the UK GAAP accounting standards from the year 2005 to year 2008 without adopting the IASB accounting standards.

With regards to reporting dates, the sample selection criterion 7 specified in Section 3.6 states that firms selected in a sample must report annual financial information on the 31st day in the month of December each year. This criterion is adjusted, so that, if a sample firm's or a control group firm's annual reporting month is recorded between July and December, the financial data is categorised for that reporting year. If this firm's annual reporting month is recorded between January and June, the financial data is categorised for the previous reporting year.

3.6.3 Primary Sample Banks

The LSE, in March 2010, categorised five banks in the Financial Times Stock Exchange (FTSE) 100 Index in the banking institution category denoted as the *Industry sector: Banks*[35]. The five banks are presented in Table 3.3.

Table 3.3 Banking Institutions Listed in the London Stock Exchange (LSE)

The table shows the banks listed in the LSE's Industry Sector: Banks, as at March 2010. The Bank Name column presents the banks name. The LSE Symbol column presents the LSE ticker symbol for the bank presented in the Bank Name column.

Bank Name	LSE Symbol
HSBC HOLDINGS PLC	HSBA
BARCLAYS PLC	BARC
ROYAL BANK OF SCOTLAND GROUP PLC (THE)	RBS
LLOYDS BANKING GROUP PLC	LLOY
STANDARD CHARTERED PLC	STAN

The primary sample in Table 3.3 consists of banking firms that are listed in the LSE's FTSE 100 firms' index, referred to as the FTSE 100 Index, and FTSE 350 firms' index, referred to as the FTSE 350 Index.

3.6.4 Primary Sample Constraint

The number of primary sample banking institutions listed in the LSE numbered five firms, and as specified by Byrne (2002) represents the population of interest, for this study's examination.

The question may arise as to the credibility of results produced from a population comprising five banks.[36] However, it may be argued from the Berkowitz and O'Brien's

[35] The Primary Sample banks registered on the LSE's FTSE 100 *Industry sector: Banks* is located at: http://www.londonstockexchange.com [accessed 15th May 2012].

[36] This study expects to test its null hypothesis based on evidence from the population of five banks in Table 3.3, tested both at the sample and at the individual bank levels. It is expected that any significant effects from any one bank when tested at the sample level would become evident from the results produced from tests at the individual bank level.

(2002) sample of six banks, examined over a time period that is less than applied in this study, that it is possible to produce credible and robust results based on such a refined sample size. Although given this evidence, to increase the robustness of the results from the five primary sample banks, presented in Table 3.3, a secondary sample is drawn and tested from the LSE comprising banking related firms categorised within the financial services industry.

3.6.5 Secondary Sample

The primary sample is increased by searching for banking related firms listed in the LSE. The electronic information publishing firm, The Bureau van Dijk Electronic Publishing, referred to as BvDEP or BvD, is used to perform company searches for the secondary sample. The product utilised to search for firms for this sample was the BvDEP information database product Orbis (BvDEP 2010).

3.6.6 Primary Sample Firm Selection

It was stated in Section 3.6.3 that the primary banks are recognised as listed in the LSE. However, the BvDEP ORBIS database product is used to select formally the primary sample banks based on the selection criteria presented in Table 3.4. The result, based on the selected criteria, produced the five banks in the primary population presented in Table 3.3.

Table 3.4 Primary and Secondary Sample Selection Criteria

The table shows the sample selection criteria for the primary sample and the secondary sample, sourced from the Bureau van Dijk Electronic Publishing ORBIS database. The Criteria Description column presents the main database search criterion selected. The Criteria column presents the search criterion selected from the main criterion.

Criteria Description	Criteria
Type of Companies (Entities)	Banks
Main Exchange	London Stock Exchange
Accounting Template	Banks
Accounting Practice	IFRS

3.6.7 Secondary Sample Firm Selection

In addition to the formal selection of the primary banks listed in the LSE, the BvDEP ORBIS database product is used to select the secondary sample firms, based on the same selection criteria presented in Table 3.4. The result based on these criteria, in addition to the five primary banks, produced an additional 28 firms.

The search criteria presented in Table 3.4 recognises these 28 firms as banks. In addition, the results produced by the BvDEP ORBIS database product reference these firms to be recognised by the EC (NACE 2008) as those related to banking activities, in particular financial and insurance activities. However, the LSE categorises these firms as either financial services firms or equity investment instrument firms. To maintain a general naming convention, firms that are produced in addition to the five primary sample banks, when applying a search criteria such as that presented in Table 3.4, are referred to in this study as both banking related firms or banking related financial services firms.

3.6.8 Sample Firms Surveyed

The total number of firms selected as the sample to be surveyed totaled 33, and comprises the five banking firms selected for the primary sample, and 28 firms selected for the secondary sample.

The 33 firms surveyed, produced from the selection criteria presented in Table 3.4, are presented in Table 3.6. After quality assurance, 16 firms are selected to test the study's null hypothesis. The 17 firms were excluded after refining due to missing data. These firms were from the secondary sample grouping.

The firms selected for the primary and secondary sample are the five banks that make up the primary sample, and the 11 banking related financial services firms that make up the secondary sample. To denote the selected firms sample categorisation each firm is labeled as either 'Primary' or 'Secondary' in the Sample column in Table 3.6. The accounting totals and corresponding market data collected for the primary sample and the secondary sample are presented in Appendix W.

3.6.9 Control Group Firm Selection

The BvDEP ORBIS database is also used to select firms to provide a control group. Table 3.5 presents the selection criteria used to select the control group of firms.

The difference with the selection criteria for the control group compared to the sample firms, as stated earlier, is that the control group of firms did not adopt the IASB accounting standards. Instead, during the 2005 adoption event, the control group prepared and presented financial statements in accordance with the UK GAAP's accepted accounting standards.

The selection criteria presented in Table 3.5 produced 20 firms. The 20 firms selected for the control group are presented in Table 3.7.

Table 3.5 Control Group Selection Criteria

The table shows the Control group sample selection criteria, sourced from the Bureau van Dijk Electronic Publishing ORBIS database. The Criteria Description column presents the main database search criterion selected. The Criteria column presents the search criterion selected from the main criterion.

Criteria Description	Criteria
Type of Companies (Entities)	Banks
Main Exchange	London Stock Exchange
Accounting Template	Banks
Accounting Practice	Local GAAP

After quality assurance of the 20 control group firms, 12 firms are selected to assist with the null hypothesis analysis. The eight firms excluded from the 20 were due to missing data. The firms chosen to represent the control group are labeled 'Control' in the Group column presented in Table 3.7. The accounting totals and corresponding market data collected for the control group firms are presented in Appendix X.

Table 3.6 Primary and Secondary Sample Firms

The table shows the Primary sample and the Secondary sample firms selected from the Bureau van Dijk Electronic Publishing ORBIS database. The Firm Name column presents the name of the sample firm. The ISIN (International Securities Identification Number) column and the Ticker Symbol column present unique identifiers for the respective firms presented in the Firm Name column. The Accounting Standards column presents the accounting standard applied by the firm from 1st January 2005, where IASB refers to the International Accounting Standard Board's IFRS accounting standards. The Main Exchange column presents the firm's LSE trading platform; the trading platforms being: SETS (Stock Exchange Electronic Trading Service), and SEAQ (Stock Exchange Automated Quotations). The FTSE Index column presents the firm's LSE index listing. The Sample column presents the firm's sample category applied in this study.

Firm Name	**ISIN**	**Ticker Symbol**	**Accounting Standard**	**Main Exchange**	**FTSE Index**	**Sample**
HSBC HOLDINGS PLC	GB0005405286	HSBA	IASB	London Stock Exchange (SETS)	FTSE 100 and FTSE 350	Primary
BARCLAYS PLC	GB0031348658	BARC	IASB	London Stock Exchange (SETS)	FTSE 100 and FTSE 350	Primary
ROYAL BANK OF SCOTLAND GROUP PLC (THE)	GB0007547838	RBS	IASB	London Stock Exchange (SETS)	FTSE 100 and FTSE 350	Primary
LLOYDS BANKING GROUP PLC	GB0008706128	LLOY	IASB	London Stock Exchange (SETS)	FTSE 100 and FTSE 350	Primary
STANDARD CHARTERED PLC	GB0004082847	STAN	IASB	London Stock Exchange (SETS)	FTSE 100 and FTSE 350	Primary
MAN GROUP PLC	GB00B28KQ186	EMG	IASB	London Stock Exchange (SETS)	FTSE 350	
ICAP PLC	GB0033872168	IAP	IASB	London Stock Exchange (SETS)	FTSE 350	
CATTLES PLC	GB0001803666	CTT	IASB	London Stock Exchange (SETS)		
INVESTEC PLC	GB00B17BBQ50	INVP	IASB	London Stock Exchange (SETS)	FTSE 350	

Table 3.6 (Continued)

Firm Name	ISIN	Ticker Symbol	Accounting Standard	Main Exchange	FTSE Index	Sample
SCHRODERS PLC	GB0002405495	SDR	IASB	London Stock Exchange (SETS)	FTSE 350	Secondary
PROVIDENT FINANCIAL PLC	GB00B1Z4ST84	PFG	IASB	London Stock Exchange (SETS)	FTSE 350	Secondary
CLOSE BROTHERS GROUP PLC	GB0007668071	CBG	IASB	London Stock Exchange (SETS)	FTSE 350	Secondary
INTERNATIONAL PERSONAL FINANCE PLC	GB00B1YKG049	IPF	IASB	London Stock Exchange (SETS)	FTSE 350	
ABERDEEN ASSET MANAGEMENT PLC	GB0000031285	ADN	IASB	London Stock Exchange (SETS)	FTSE 350	Secondary
INTERMEDIATE CAPITAL GROUP PLC	GB0004564430	ICP	IASB	London Stock Exchange (SETS)	FTSE 350	
BREWIN DOLPHIN HOLDINGS PLC	GB0001765816	BRW	IASB	London Stock Exchange (SETS)	FTSE 350	
PARAGON GROUP OF COMPANIES PLC	GB00B2NGPM57	PAG	IASB	London Stock Exchange (SETS)	FTSE 350	Secondary
RATHBONE BROTHERS PLC	GB0002148343	RAT	IASB	London Stock Exchange (SETS)	FTSE 350	Secondary
EVOLUTION GROUP PLC (THE)	GB0030221864	EVG	IASB	London Stock Exchange (SETS)	FTSE 350	
ARBUTHNOT BANKING GROUP PLC	GB0007922338	ARBB	IASB	London Stock Exchange (SEAQ)	FTSE AIM All-Share Constituents	
LONDON CAPITAL GROUP HOLDINGS PLC	GB00B0RHGY93	LCG	IASB	London Stock Exchange (SEAQ)	FTSE AIM All-Share Constituents	

Table 3.6 (Continued)

Firm Name	ISIN	Ticker Symbol	Accounting Standard	Main Exchange	FTSE Index	Sample
EUROPEAN ISLAMIC INVESTMENT BANK PLC	GB00B126GW60	EIIB	IASB	London Stock Exchange (SETS)	FTSE AIM All-Share Constituents	
ISLAMIC BANK OF BRITAIN PLC	GB00B02KNV97	IBB	IASB	London Stock Exchange (SETS)	FTSE AIM All-Share Constituents	
JUPITER PRIMADONA GROWTH TRUST PLC	GB0007033763	JPG	IASB	London Stock Exchange (SEAQ)		
TULLETT PREBON PLC	GB00B1H0DZ51	TLPR	IASB	London Stock Exchange (SETS)	FTSE 350	
POLAR CAPITAL TECHNOLOGY TRUST PLC	GB0004220025	PCT	IASB	London Stock Exchange (SETS)		
DUNEDIN ENTERPRISE INVESTMENT TRUST PLC	GB0005776561	DNE	IASB	London Stock Exchange (SETS)		
ELECTRA PRIVATE EQUITY PLC	GB0003085445	ELTA	IASB	London Stock Exchange (SETS)		Secondary
BANKERS INVESTMENT TRUST PLC	GB0000767003	BNKR	IASB	London Stock Exchange (SETS)		Secondary
WITAN INVESTMENT TRUST PLC	GB0009744060	WTAN	IASB	London Stock Exchange (SETS)		Secondary
RIT CAPITAL PARTNERS PLC	GB0007366395	RCP	IASB	London Stock Exchange (SETS)		Secondary
ALLIANCE TRUST PLC	GB00B11V7W98	ATST	IASB	London Stock Exchange (SETS)		Secondary
3I GROUP PLC	GB00B1YW4409	III	IASB	London Stock Exchange (SETS)	FTSE 350	

Table note: The information in this table is as of 10th December 2009.

Table 3.7 Control Group Firms

The table shows the Control Group firms selected from the Bureau van Dijk Electronic Publishing ORBIS database. The Firm Name column presents the name of the Control group firm. The ISIN (International Securities Identification Number) column and the Ticker Symbol column present unique identifiers for the respective firms presented in the Firm Name column. The Accounting Standards column presents the accounting standards applied by the firm from 1st January 2005, where UK GAAP refers to the standards accepted under the United Kingdom Generally Accepted Accounting Practice. The Main Exchange column presents the firm's LSE trading platform; the trading platforms being: SETS (Stock Exchange Electronic Trading Service), and SEAQ (Stock Exchange Automated Quotations). The FTSE Index column presents the firm's LSE index listing. The Group column indicates the firm's category applied in this study.

Firm Name	**ISIN**	**Ticker Symbol**	**Accounting Standard**	**Main Exchange**	**Group**
BAILLIE GIFFORD JAPAN TRUST PLC (THE)	GB0000485838	BGFD	UK GAAP	London Stock Exchange (SETS)	
PACIFIC HORIZON INVESTMENT TRUST PLC	GB0006667470	PHI	UK GAAP	London Stock Exchange (SEAQ)	Control
NORTHERN VENTURE TRUST PLC	GB0006450703	NVT	UK GAAP	London Stock Exchange (SEAQ)	
NORTHERN 3 VCT PLC	GB0031152027	NTN	UK GAAP	London Stock Exchange (SEAQ)	
NORTHERN 2 VCT PLC	GB0005356430	NTV	UK GAAP	London Stock Exchange (SEAQ)	
BAILLIE GIFFORD SHIN NIPPON PLC	GB0000706274	BGS	UK GAAP	London Stock Exchange (SEAQ)	Control
NORTHERN AIM VCT PLC	GB0002093689	NNA	UK GAAP	London Stock Exchange (SEAQ)	
NORTHERN INVESTORS COMPANY PLC	GB00B08S4K30	NRI	UK GAAP	London Stock Exchange (SEAQ)	

Table 3.7 (Continued)

Firm Name	ISIN	Ticker Symbol	Accounting Standard	Main Exchange	Group
MID WYND INTERNATIONAL INVESTMENT	GB0005893838	MWY	UK GAAP	London Stock Exchange (SEAQ)	
DUNEDIN SMALLER COMPANIES INVESTMENT TRUST	GB00B1GCL258	DNDL	UK GAAP	London Stock Exchange (SETS)	Control
MURRAY INTERNATIONAL TRUST PLC	GB0006111909	MYI	UK GAAP	London Stock Exchange (SETS)	Control
EDINBURGH WORLDWIDE INVESTMENT TRUST PLC	GB0002916335	EWI	UK GAAP	London Stock Exchange (SETS)	
THROGMORTON TRUST PLC	GB0008910555	THRG	UK GAAP	London Stock Exchange (SETS)	Control
BRITISH ASSETS TRUST PLC	GB0001297562	BSET	UK GAAP	London Stock Exchange (SETS)	Control
EDINBURGH INVESTMENT TRUST PLC (THE)	GB0003052338	EDIN	UK GAAP	London Stock Exchange (SETS)	Control
SCOTTISH INVESTMENT TRUST PLC	GB0007826091	SCIN	UK GAAP	London Stock Exchange (SETS)	Control
MONKS INVESTMENT TRUST PLC	GB0030517261	MNKS	UK GAAP	London Stock Exchange (SETS)	Control
MERCANTILE INVESTMENT TRUST PLC (THE)	GB0005794036	MRC	UK GAAP	London Stock Exchange (SETS)	Control
FOREIGN & COLONIAL INVESTMENT TRUST PLC (THE)	GB0003466074	FRCL	UK GAAP	London Stock Exchange (SETS)	Control
SCOTTISH MORTGAGE INVESTMENT TRUST PLC	GB0007838849	SMT	UK GAAP	London Stock Exchange (SETS)	Control

Table note: The information in this table is as of 10th December 2009.

3.7 Information and Data Collection

Information and data collection methods and data sources used in this study are presented in this section. Information and data are gathered in the subject areas of: financial instruments, accounting standards and methods, risk monitoring and management methods, and the financial regulatory framework and the technology framework. In addition, this section presents the variables and time ranges selected for data gathering. The time ranges applied for data analysis is also presented.

3.7.1 Information Collection

The following sources were used for information collection purposes in this study:

- Current and past financial statement reports.
- Electronic databases from data providers.
- Published articles in the press and relevant magazines.
- On-line published articles and relevant magazines from reputable authorities.
- Articles, papers and books in the following areas:
    - Business and Finance
    - Accounting
    - Risk management
    - Regulation, supervision and governance
    - Technology
    - Science, mathematics and statistics
    - Other relevant articles and papers and books

3.7.2 Market and Accounting Data Collection

The following sources were used for data collection purposes in this study:

- Current and past financial information from financial statement reports.
- Financial information and data from regulatory authorities.
- Financial information from exchanges.
- Financial and market data from data providers.
- Institution information from regulatory authorities.

- Institution information from *information and market data* providers.
- Institution information from exchanges.

3.7.3 Data Sources

Table 3.8 presents a summary of the categories for the data collected with the corresponding data sources.

Table 3.8 Data Collection: Data Description and Data Sources

The table shows the types of data collected and the respective data sources. The Data Description column presents the categories of data collected. The Data Sources column presents the source used to collect data for the respective data categories.

Data Description	Data Source
General Economic Indicators	Office for National Statistics[a]
General Market Indicators	1) Bank of England[b] 2) Thomson One Banker product
Market data	Thomson Reuters Datastream database product
Accounting data	1) Thomson Reuters World Source database product 2) Orbis database product 3) Financial Statements

Table notes:
[a]Data was sourced from the Office for National Statistics located at www.statistics.gov.uk, and was sourced from the 28th to 31st March 2010.
[b]Data was sourced from the Bank of England located at www.bankofengland.co.uk, and was sourced from the 28th to 31st March 2010.

3.7.4 GDP Indicators Variable Data Collection

Determined by Ang, Piazzesi and Wei (2006) a measure of economic growth is directly related to the measure of the Gross Domestic Product (GDP) in the economy of interest. In order to establish the general UK economic conditions from 1994 to 2008, the All Production and Business Services GDP sector data sets are collected on a quarterly basis for this time period. See Section 3.8 for how the GDP variable is applied to test this study's null hypothesis.

3.7.5 General Market Indicator Variables Data Collection

To determine the general market conditions from 1994 to 2008 data is collected for this time period for selected market indices, interest rate and currency indices variables.

To provide analysis of general stock market conditions from 1992 to 2008 data is collected on a daily basis for the London Stock Exchange Indices: FTSE 350, FTSE 100, FTSE ALL shares and some selected indices from around the world.

To provide analysis of the general interest rate market condition from 1992 to 2008 the London Interbank Offered Rate (LIBOR) rates data and the UK government bond, referred to as the UK Gilt government bond, yield data are collected on a daily basis. The LIBOR rates are chosen to provide an analysis of the UK financial markets' response to short-term interest rates, and the UK Government bond yields are chosen to provide the markets' response to longer-term interest rates.

To provide analysis of general currency market conditions from 1992 to 2008 data is collected on a daily basis for the currency pairs: European EURO and GBP, United States Dollar (USD) and GBP, and Japanese Yen and GBP.

See Section 3.8 for how the market indicator variables are applied to test this study's null hypothesis.

3.7.6 Market and Accounting Variables Data Collection

Market data is collected to analyse the market data variations from 1992 to 2009. The primary market variable of interest in this study is the market price variable. However, with the aim to provide additional market variable analysis, data are also collected for the market value and the book-to-market ratio variables. With a view to maintain data integrity from the source, the book-to-market ratio variable data is collected and also presented in this study as its mathematical reciprocal, termed the *market-to-book* ratio.

For each firm in the samples and the control group, market data is collected from 1992 to 2009 on a daily basis for the following financial market variables:

Market Price

Market Value

Market-to-Book

Volume

Common Shares Outstanding

Accounting data is collected to analyse the accounting data variations from 1992 to 2008. For each firm in the samples and the control group, accounting data is collected for this time period on a yearly basis for the following accounting variables:

Total Shareholders' Equity

Total Assets

Total Liabilities

Net Income

3.7.7 Time Series Interval Selection

Table 3.9 presents the 1992 to 2009 time range applied in this research. In addition to yearly time periods that are in this time range, three time interval ranges are selected for analysis. Table 3.9 also presents the overlapping years that correspond to the time interval ranges applied in this study.

Table 3.9 Time Series Ranges

The table shows the years and the time ranges tested. The main Time Ranges column presents the full 1992 to 2009 time range tested. The Total column presents the 1994 to 2008 time range, indicated by the bordered years. The Range 1 column presents the 1994 to 2004 time period applied to test for before the 2005 accounting change, indicated by the bordered years The Range 2 column presents the 1994 to 2007 time period, indicated by the bordered years.

Time Ranges		
Total	Range 1	Range 2
1992	1992	1992
1993	1993	1993
1994	1994	1994
1995	1995	1995
1996	1996	1996
1997	1997	1997
1998	1998	1998
1999	1999	1999
2000	2000	2000
2001	2001	2001
2002	2002	2002
2003	2003	2003
2004	2004	2004
2005	2005	2005
2006	2006	2006
2007	2007	2007
2008	2008	2008
2009	2009	2009

Table note: The highlighted row identifies the samples IFRS accounting standards adoption year.

The criteria for the selection of the three time ranges specified in Table 3.9 are to provide a set comparative time series regressions that allow the analysis of selected variable reactions, for before and after the 2005 accounting change. The three time ranges presented in Table 3.9, that specify a total time period (1994 to 2008) and the two sub-time periods that are applied in time series regressions, are presented in summary in Table 3.10.

Table 3.10 Time Series Periods

The table shows the time ranges tested. The Time Period column presents the time range descriptions. The Years: *t* to *T* column presents the time period tested in years. The Number of Years Observed, *T* column presents the count of the years observed in each time range.

Time Period	Years: *t* to *T*[a]	Number of Observed Years, *T*
Total Time Period	1994 to 2008	15
Sub-Time Period 1	1994 to 2004	11
Sub-Time Period 2	1994 to 2007	14

Table notes: [a] The starting year and maximum ending year for the time series periods are from 1994 to 2008. However, analysis of descriptive statistics on a year-by-year basis is performed from years 1992 to 2009.

From Table 3.10 the total time period, from 1994 to 2008, is selected to provide regressions that analyse selected variable relationships for the time period that *includes* the 2005 accounting change year. The first sub-time period 1, from 1994 to 2004, provides regressions that analyse variable relationships *just prior* to the 2005 change. The second sub-time period 2, from 1994 to 2007, provides regressions that analyse variable relationships for the time period that includes the 2005 accounting change year. However, sub-time period 2 provides a control for effects observed during the 2008 year by excluding that year (see Section 1.2).

3.8 Introduction to the Null Hypothesis Tests and Analysis

This thesis discusses the theory that improved accounting quality is associated with firms that adopt the IFRS accounting standards (see Chapter 2, Section 2.2 and 2.3). This theory is supported by the EC (2002) and IASB (2011) and is empirically tested by Platikanova and Nobes (2006), Paananen and Lin (2009) and Morais and Curto (2008) for sample firms in Europe after the Europe-wide first-time adoption of the IFRS accounting standards in 2005. This study examines this theory from the context of the research question presented in Section 3.2 that asks, 'Does accounting quality improve for UK banks that adopted the IFRS accounting standards in 2005?'.

To determine the level of evidence to support this theory, the null hypothesis presented in Section 3.3.1 and specified by equation (3.22) is examined using the tests introduced in this section. To examine the level of verifiability (or conversely, the level of *falsifiability*) for the null hypothesis, the tests introduced in this section are aligned to determine conclusions based on a series of testable statements. This series of testable statements are presented in Table 5.1 to Table 5.11 under the *Statement Tested* column. For the UK banks after 2005 compared to before, and in general when compared to the Control group, it is ideally expected that the results from these tests to show: the market price returns increased; market price volatility and Value-at-Risk levels decreased; accounting quality, measured using the relative delta measure, improved and thus the level of exposure to accounting quality risk decreased (see Section 2.9.3); the relative delta measure does not exhibit explanatory power for Value-at-Risk; and, the level of capital that would need to be provisioned for the Basel minimum capital requirement reduced.

The specific approach that this study applies to test its null hypothesis is to conduct tests that support directly either the null hypothesis itself, specified in equation (3.22), or the null hypotheses specified in equations (3.23) to (3.26). The evidence from tests directed to evaluate these detailed null hypotheses is analysed to determine if their results add strength to verify or falsify the null hypothesis.

This section next introduces the null hypothesis tests conducted. Appendix M, Appendix N and Appendix O provide details for these tests, together with Section 3.9 that provides details of the tests conducted using the change in the accounting total variables and the change in the market price variable.

Market Price Return Distribution and Variance-Covariance Value-at-Risk Analysis

The descriptive statistics detailed in Appendix M are calculated for 300 historical 1-day market price returns to report distribution mean, standard deviation of distribution means, skewness, kurtosis, and excess kurtosis based on time series panel data. For the same data, the variance-covariance Value-at-Risk variable calculated using the model detailed in Appendix N.3 is presented and analysed.

This analysis is conducted to determine the levels of market price returns, market price return volatility and the variance-covariance Value-at-Risk for before and after 2005.

Value-at-Risk Analysis

The market price return Value-at-Risk measure, detailed in Appendix N, for the 1-day, 250-day and 500-day time horizons at the 95% confidence level is analysed. The Value-at-Risk models analysed are the:

1) variance-covariance
2) historical simulation
3) Monte Carlo simulation

The variance-covariance model is detailed in Appendix N.3, the historical simulation model, referred to also as the historical model, is detailed in Appendix N.4 and the Monte Carlo simulation model is detailed in Appendix N.5.

The three Value-at-Risk models are tested to determine the number of times the market price return variable was breached. That is, the number of times the actual market price return variable became less than the Value-at-Risk measure before or on the day that specifies the Value-at-Risk time-horizon. The models are tested for breaches by applying the backtesting approach specified by JPMorgan Chase and Reuters (1996) and Hull (2009) and presented in Appendix N.7. The specific approaches applied in this study are the *in-time horizon backtest* as described in Appendix N.7.2 and the *end-of-time horizon backtest* as described in Appendix N.7.3.

These analyses are conducted to determine the levels of Value-at-Risk for before and after 2005.

Historical Value-at-Risk Actual for the 1-Day, 250-Day and 500-Day Time Horizons at the 95% Confidence Level Analysis

To determine the Historical Value-at-Risk Actual variable's time horizon characteristics, the 250-day Historical Value-at-Risk Actual measure specified in Appendix N.8, is analysed. This measure is analysed with the 1-day and 500-day Historical Value-at-Risk Actual measurements. The Historical Value-at-Risk Actual variable's time horizon characteristics are analysed using the descriptive statistics specified in Appendix O.1.

The Historical Value-at-Risk Actual measurements are also graphically plotted with the sample mean market price returns and the standard deviation of sample mean returns. The plots are made for the 1-day and 250-day Historical Value-at-Risk Actual based on 300 and 800 historical returns, and the 500-day measure based on 500 and 800 historical returns.

Regressions for Historical Value-at-Risk Actual at the 99% and 99.9% Confidence Levels and the 95% Confidence Level Analysis

To determine the relation between the Historical Value-at-Risk Actual variable, for the 99% and 99.9% confidence levels and the 95% level, the cross-sectional and time series regressions specified in Appendix O.2 are performed. The Historical Value-at-Risk Actual variable tested is measured using 300 sequential historical observations of 250-day market price returns.

Market Price Returns and Historical Value-at-Risk Analysis

To determine the relation between the market price return variable and the Historical Value-at-Risk Actual variable, the cross-sectional and time series regressions specified in Appendix O.3 are performed. The Historical Value-at-Risk Actual variable tested is measured using 300 sequential historical observations of 250-day market price returns.

GDP and Market Indices Analysis

To test the relation before and after the 2005 accounting change between the GDP and the market price variable, and Market Indices and the market price variable, the time series regressions specified in Appendix O.4 are performed.

To determine the relation before and after the 2005 accounting change between the GDP Value-at-Risk and the market price Value-at-Risk variable, and Market Indices Value-at-Risk and the market price Value-at-Risk variable, the time series regressions specified in Appendix O.5 are performed.

Baseline Market Value and Book-to-Market Ratio Analysis

The Fama and French (2008) baseline regression that tests the relation between the market value and the book-to-market ratio to that of expected returns is tested using the regression specified in Appendix O.5, equation (O.15). The regression applies the t-statistic measure prescribed in Fama and MacBeth (1973) and specified in Appendix O.6, equation (O.16).

Total Variables and Value-at-Risk Analysis

To determine the relationship between the book-to-market ratio, market price, market value, volume of shares traded, number of shares outstanding and key accounting total variables (termed collectively as the *total variables*) to the Value-at-Risk variable, the descriptive statistic analysis specified in Appendix O.7 is applied.

To test the correlation between these total variables and the Value-at-Risk variable, the Pearson correlation analysis specified in Appendix O.8 is applied.

Focusing on the accounting total variables, the results from these variables are applied to provide a measure of the levels of material significance before and after the 2005 accounting change. The results from the accounting total analysis are applied to test directly the detailed null hypotheses specified in Section 3.3.2. The results from the other total variables are analysed to determine if they provide any significant evidence to test the null hypothesis.

Change in Total Variables and Value-at-Risk Analysis

To determine the relationship between the yearly changes for the book-to-market ratio, market price (that is the yearly market price return), market value, the number of share outstanding, and key accounting total variables to the Value-at-Risk variable, the descriptive statistic analysis specified in Appendix O.9 is applied.

To test the correlation between the yearly change variables and the Value-at-Risk variable the Pearson correlation analysis specified in Appendix O.10 is applied.

Market Value and Market Price Return Analysis

To test the relation before and after the 2005 accounting change between yearly changes in the market value variable to the market price variable (market price return variable) the cross-sectional and time series regressions specified in Appendix O.11 are performed.

Change in Key Accounting Totals and Market Price Return Analysis

To test the relation before and after the 2005 accounting change between the change in the key accounting variables: total equity, total assets, total liabilities and net income, and the market price return variable, the time series regressions specified in Section 3.9.1 and the cross-sectional regression specified in Appendix O.12 are performed.

The results from these tests provide a measure of the levels of statistical significance between the change in the accounting variables and the market price return variable for before and after the 2005 change. The results from this analysis are applied to test directly the detailed null hypotheses introduced in Section 3.3.2.

Change in Key Accounting Totals and Market Price Return Analysis – The Relative Delta Measure

To measure the difference between the change in the accounting variable and the market price return variable, that is to measure the *accounting to market price relative delta*, the approach specified in Section 3.9.2 is applied.

The accounting to market price relative delta measure, specified in Section 3.9.2, provides a measure of material significance that is applied to test directly the detailed null hypotheses introduced in Section 3.3.2.

Relative Delta to Value-at-Risk Analysis

To test the relation between the change in key accounting and market price return variables to the Value-at-Risk variable for before and after the 2005 accounting change, the time series regressions specified in Section 3.9.3 and cross-sectional regressions specified in Appendix O.13 are performed.

These tests provide a measure of the levels of statistical significance between the *accounting to market price relative delta* variable and the *Value-at-Risk* variable for before and after the accounting change. The results from this analysis are applied to test directly the detailed null hypotheses introduced in Section 3.3.2.

Accounting Value-at-Risk Analysis

To estimate the Value-at-Risk for the key accounting variables, the measure developed in Section 3.9.4 is applied.

The accounting Value-at-Risk together with the market price Value-at-Risk provides a measure of the difference between the Value-at-Risk levels before and after the 2005 accounting change. The differences in the Value-at-Risk measures are applied to test *indirectly* the detailed null hypotheses introduced in Section 3.3.2.

Accounting Value-at-Risk, Market Price Return Value-at-Risk and Relative Delta Analysis

To determine the relationship between the measures accounting Value-at-Risk, market price return Value-at-Risk and the accounting to market price relative delta, the relationship specified in Section 3.9.5 is applied. From this relationship it is determined that the difference between the accounting Value-at-Risk and the market price return Value-at-Risk relates directly to the relative delta measure.

Relative Delta and Regulatory Capital Analysis

To estimate the change to the 8% minimum regulatory capital requirement specified by the Basel Capital Accord (Basel 2011) a threshold based capital adjustment measure is introduced in Section 3.9.6. This adjustment is calculated by applying the regulatory relative delta measure proposed in Section 3.9.6.

This adjustment is applied to determine its effect on regulatory capital for before and after the 2005 accounting change. The purpose of this test is to provide direct evidence to verify the null hypothesis specified in equation (3.22).

UK Banks Relative Delta and Value-at-Risk Analysis

To test the relation between the accounting to market price relative delta variable and the Value-at-Risk variable for before and after the 2005 accounting change for each bank in the UK banking sector, the time series regression specified in Section 3.9.7 is performed.

This test provides for each UK bank, a measure of the levels of statistical significance between the accounting to market price relative delta variables and the Value-at-Risk variable for before and after the accounting change. The results from this analysis are applied to test directly the detailed null hypotheses introduced in Section 3.3.2.

3.9 Null Hypothesis Test Details using the Change in Key Accounting Totals and Market Price Return

The previous section, Section 3.8, introduced the tests applied in this study to examine its research question, presented in Section 3.2, by testing the null hypothesis presented in Section 3.3.1. This section presents details of the specific null hypothesis tests that are introduced in Section 3.8 that determine the level of verifiability (or conversely, the level of falsifiability) by examining the relationship between the change in key accounting variables and the change in the market price variable. This change in the market price variable is also termed the market price return variable.

3.9.1 Time Series Regressions for Change in Key Accounting Totals and Market Price Return

This section presents details of the test introduced in Section 3.8 with the title: Change in Key Accounting Totals and Market Price Return Analysis.

The time series regression applied to determine the relationship between the change in key accounting variables[37] and the market price return variable is specified by the following:

[37] The change in accounting variables is calculated using the approach detailed in Section 3.9.2.

$$d\overline{M}_{N:t-1,t} = a_T + b_T d\overline{AC}_{N:t-1,t} + e_{N:t-1,t} \quad (3.32)$$

Where:

$d\overline{M}_{N:t-1,\mathrm{t}}$ = mean market price return at time t for N sample firms

$d\overline{AC}_{N:t-1,t}$ = average change in key accounting total variable at time t for N sample firms

b_T = regression slope

a_T = regression intercept

$e_{N:t-1,t}$ = error term representing the difference between the actual dependent variable values to the calculated dependent variable values using the regression equation

N = average number of sample firms

T = maximum year count at the sample level

t = time series index: $t = 1, 2, ..., T$

This regression approach[38] is presented in a generalised form for each key accounting total and market price return in Appendix F.2.

3.9.2 Relative Delta and Change in Key Accounting Totals and Market Price Return

This section presents details of the test introduced in Section 3.8 with the title: Change in Key Accounting Totals and Market Price Return Analysis – The Relative Delta Measure.

The log change equation (M.31), or for negative variable values the relative change formula specified in equation (M.30) in Appendix M, is applied to the accounting variables to measure the level of change for the time period: $t-1$ to t. The formula applied at the firm level to calculate the change in *positive variable values* is given by:

[38] The regression form specified in equation (3.32) may also be specified using the regression model form: $dM_{N,t} = \beta_0 + \beta_1 dAC_{N,t} + e_{N,t}$ – where: $dM_{N,t}$ is equivalent to $d\overline{M}_{N:t-1,\mathrm{t}}$ = the mean market price return at time t for N sample firms; β_0 is equivalent to a_T = the regression intercept; β_1 is equivalent to b_T = the regression slope, and $e_{N,t}$ is equivalent to e_T = the regression error. The regressions specified in this study may be interpreted in a similar way using either form.

$$dAC_{t-1,t} = ln\left(\frac{AC_t}{AC_{t-1}}\right) \tag{3.33}$$

Where:

$dAC_{t-1,t}$ = log change in the accounting total variable from time $t-1$ to t

ln = natural logarithm to the base e

AC_t = accounting total variable value at time t

AC_{t-1} = accounting total variable value at time $t-1$

t = time index

For negative variable values, the following formula is applied:

$$dAC_{t-1,t} = \frac{AC_t - AC_{t-1}}{AC_{t-1}} \tag{3.34}$$

Where:

$dAC_{t-1,t}$ = relative change in the accounting total variable from time $t-1$ to t

AC_t = accounting total variable value at time t

AC_{t-1} = accounting total variable value at time $t-1$

t = time index

The log change equation (M.31) in Appendix M to determine the market price change or the market price return is applied using the following formula:

$$dM_{t-1,t} = ln\left(\frac{P_t}{P_{t-1}}\right) \tag{3.35}$$

Where:

$dM_{t-1,t}$ = log market price change or market price return from time $t-1$ to t

ln = natural logarithm to the base e

P_t = market price at time t

P_{t-1} = market price at time $t-1$

t = time index

From equation (3.33), or equation (3.34) where negative total values are present, and equation (3.35), this study specifies the measure termed the relative delta. This relative delta measure, specified in Section 3.2.4, measures the difference between the change in the accounting total variables for a given time period and the change in the market price variable for the same time period. As stated in Section 2.7, extended from the Fama and French (2008) time dependent treatment of the book-to-market ratio, the formula for the accounting to market price relative delta at the firm level is given by:

$$\delta_{i,t-1,t} = dAC_{i,t-1,t} - dM_{i,t-1,t} \tag{3.36}$$

Where:

$\delta_{i,t-1,t}$ = relative delta measure to measure the difference between the change in the accounting variable and the change in the market price variable from time $t-1$ to t for the i^{th} firm in N sample firms

$dAC_{i,t-1,t}$ = change in the accounting total variable from time $t-1$ to t for the i^{th} firm in N sample firms

$dM_{i,t-1,t}$ = log change in the market price (market price return) from time $t-1$ to t for the i^{th} firm in N sample firms

i = firm index: $i = 1, 2, ..., N$

t = time index

Equation (3.36) is also expressed as:

$$\delta_{i:t-1,t} = (dAC - dM)_{i:t-1,t} \tag{3.37}$$

Where the parameter definitions are the same as equation (3.36) where: the terms in brackets $(dAC - dM)_{i:t-1,t} = dAC_{i,t-1,t} - dM_{i,t-1,t}$

At the sample level the relative delta formula presented in equation (3.36) is given by:

$$\delta_{N,t-1,t} = dAC_{N,t-1,t} - dM_{N,t-1,t} \tag{3.38}$$

Where:

$\delta_{N,t-1,t}$ = sample relative delta measure to measure the difference between the sample average change in the accounting variable and the sample average change in the market price variable from time $t-1$ to t for N sample firms

$dAC_{N,t-1,t}$ = sample accounting total variable change from time $t-1$ to t for N sample firms

$dM_{N,t-1,t}$ = sample log market price variable change from time $t-1$ to t for N sample firms

N = number of sample firms

t = time index

Equation (3.38) is also expressed as:

$$\delta_{N:\,t-1,t} = (\overline{dAC - dM})_{N:i,t-1,t} \tag{3.39}$$

Where the parameter definitions are the same as equation (3.38); where: $(\overline{dAC - dM})_{N:i,t-1,t} = \frac{1}{N}\sum_{i=1}^{N}\left(dAC_{i,t-1,t} - dM_{i,t-1,t}\right)$

3.9.3 Regressions for Relative Delta and Historical Value-at-Risk Actual – Null Hypothesis Evaluation

This section presents details of the test introduced in Section 3.8 with the title: Relative Delta to Value-at-Risk Analysis.

To determine the relationship between the relative delta variable and the Historical Value-at-Risk Actual variable, the time series regressions detailed in this section and the cross-sectional regressions in Appendix O.13 are performed.

To strengthen evidence to verify this research's null hypothesis, it would be expected that the regressive relationship between the relative delta and Value-at-Risk variables for before the 2005 accounting change would be maintained after this change. It would ideally be expected that the relative delta measure would not exhibit a significant relationship to Value-at-Risk levels after 2005. Such a relationship, especially during periods of market price volatility, would signify that the change in the key accounting totals varied in the same direction with the same magnitude as the change in the market price (resulting in a zero or negligible net effect). This effect would show that the relative delta variations were not the same as risk exposures measured using Value-at-Risk.

Time Series Regressions for Relative Delta and Historical Value-at-Risk Actual – Null Hypothesis evaluation

The time series regression applied to determine the relationship between the relative delta variable and the Historical Value-at-Risk Actual variable is specified by the following:

$$\bar{V}_{N:\mathrm{t}} = a_T + b_T\left(\overline{dAC - dM}\right)_{N:\mathrm{t}-1,\mathrm{t}} + e_{N:t} \quad (3.40)$$

Where:

$\bar{V}_{N:\mathrm{t}}$ = mean *Historical Value-At-Risk Actual* at time t for N sample firms at the 95% confidence level for the 250-day time horizon

$\left(\overline{dAC - dM}\right)_{N:\mathrm{t}-1,\mathrm{t}}$ = mean relative delta measure: average natural log change in the key accounting variable to the market price return variable at time t for N sample firms

b_T = regression slope

a_T = regression intercept

$e_{N:\mathrm{t}}$ = error term representing the difference between the actual dependent variable values to the calculated dependent variable values using the regression equation

N = average number of sample firms

T = maximum year count at the sample level

t = time series index: $t = 1, 2, \ldots, T$

This regression approach is presented in a generalised form for each key accounting total and market price return in Appendix G.

3.9.4 Accounting Value-at-Risk

This section presents details of the test introduced in Section 3.8 with the title: Accounting Value-at-Risk Analysis.

From the book-to-market ratio specified by Fama and French (1992, 2008), Peterkort and Nielsen (2005), and Bodie et al. (2002), for a *riskless state* the change in the book equity value is matched by the change in the market price.

That is:

$$dB_{t-1,t} = dM_{t-1,t}$$
$$\text{or:} \tag{3.41}$$
$$(dB_{t-1,t} - dM_{t-1,t}) = 0$$

Where:

$dB_{t-1,t}$ = change in book equity from time $t-1$ to t

$dM_{t-1,t}$ = change in market price from time $t-1$ to t

For a *riskless state* this would also mean that a Value-at-Risk measure derived from changes in the book equity variable, dB, must change in the same direction and with the same magnitude as the Value-at-Risk measure derived from the market price return variable, dM.

That is:

$$V_{dB:t-1,t} = V_{dM:t-1,t} \tag{3.42}$$

Where:

$V_{dB:t-1,t}$ = Value-at-Risk calculated from the change in the book equity variable for the time interval $t-1$ to t

$V_{dM:t-1,t}$ = Value-at-Risk calculated from the change in the market price variable for the time interval $t-1$ to t

Introducing to the right-hand side (RHS) of equation (3.42) the component $(dB_{t-1,t} - dM_{t-1,t})$ from equation (3.41) gives:

$$V_{dB:t-1,t} = (dB_{t-1,t} - dM_{t-1,t}) + V_{dM:t-1,t} \tag{3.43}$$

Where the parameter definitions in (3.43) are the same as equations (3.41) and (3.42).

Equation (3.43) is tested in this study to estimate the Value-at-Risk for the key accounting variables using the following general formula:

$$V_{dAC:t} = (dAC_{t-1,t} - dM_{t-1,t}) + V_{dM:t} \tag{3.44}$$

Where:
$V_{dAC:t}$ = Value-at-Risk estimate for the key accounting total variable at time t
$V_{dM:t}$[39] = Value-at-Risk derived from the change in the market price variable at time t
$(dAC_{t-1,t} - dM_{t-1,t})$ = level of difference between the change in the key accounting total variable and the change in the market price variable or the market price return (this is the accounting to market price relative delta)

3.9.5 Relationship Between Accounting Value-at-Risk and Market Price Return Value-at-Risk and Relative Delta

This section presents details of the test introduced in Section 3.8 with the title: Accounting Value-at-Risk, Market Price Return Value-at-Risk and Relative Delta Analysis.

Rearranging equation (3.44) from Section 3.9.4 gives:

$$V_{dAC:t} - V_{dM:t} = (dAC_{t-1,t} - dM_{t-1,t}) \tag{3.45}$$

Where:
$V_{dAC:t}$ = Value-at-Risk estimate for the key accounting total variable at time t
$V_{dM:t}$ = Value-at-Risk derived from the change in the market price variable at time t
$(dAC_{t-1,t} - dM_{t-1,t})$ = level of difference between the change in the key accounting total variable and the change in the market price variable

As stated previously, the term $(dAC_{t-1,t} - dM_{t-1,t})$ is the relative delta measure and is specified in Section 3.2.4. From equation (3.45), it is shown that the difference between the Value-at-Risk from the accounting variable and the Value-at-Risk from the market price variable would be the same as the difference between the change in the accounting and the change in the market price variables. That is, this difference between the accounting and the market price return Value-at-Risk variables is signified by the measure of the accounting to market price relative delta.

[39] For this study $V_{dM:t}$ is represented by the *Historical Value-At-Risk Actual* measure at the 95% confidence level, and at the 250-day time horizon.

3.9.6 Regulatory Capital Estimates

This section presents details of the test introduced in Section 3.8 with the title: Relative Delta and Regulatory Capital Analysis.

To estimate the change to the minimum regulatory capital requirement specified by the Basel Capital Accord for before and after the 2005 accounting change, this section develops the *regulatory relative delta* measurement framework. This section develops this framework from its introduction and description provided in Section 2.10 and Appendix K respectively.

The minimum regulatory capital specified by Basel (2011) is set at 8%. This requirement states that the Total Capital, that is Tier 1 Capital plus Tier 2 Capital, must be at a minimum 8% of the total *risk weighted assets* value at all times.

That is:

$$Capital\ Requirement \geq \frac{Total\ Regulatory\ Capital}{Risk\ Weighted\ Assets} \geq 8\% \qquad (3.46)$$

Coding expression (3.46), gives:

$$\varpi_t \geq \frac{\vartheta_t}{\omega_t} \geq 8\% \qquad (3.47)$$

Where:
ϖ_t = minimum capital requirement at time t
ϑ_t = total regulatory capital at time t
ω_t = risk weighted assets at time t
t = time index

If the risk weights applied to the risk weighted assets, ω, increase by 1% then to maintain the minimum 8% proportion for the capital requirement, the total regulatory capital, ϑ, would also have to increase by a *relative* minimum of 1%.

As stated in Section 2.10, at present, the measure of financial distress risk captured by the book-to-market ratio as has been studied by Fama and French (2008, 1992) and Peterkort and Nielsen (2005) has not been integrated into the Basel (2011) framework.

This study proposes that the level of financial distress risk that is captured by the book-to-market ratio can be applied to adjust risk weighted assets, ω, thus also reflecting an adjustment to the regulatory capital requirement, ϖ. Such an approach is proposed in this research to apply within the Basel regulatory framework to measure a firm's level of exposure to financial distress risk. Applying the book-to-market ratio to capture a firm's level of exposure to financial distress risk would firstly extend the categories of risk captured within the Basel framework and secondly strengthen the principal approach to monitoring financial distress risk proposed in this study. The proposed measurement approach is to monitor the difference between the change in the accounting measure of a firm's value (by measuring the firm's change in book equity or its *total equity*), and its change in the financial market's valuation (by measuring the firm's change in market price).

Such a measure would be applied to equation (3.47) using the following formula:

$$\varpi_t \geq \frac{\vartheta_t}{\omega_t \times (1 + [BM_t])} \geq 8\% \tag{3.48}$$

Where:
ϖ_t = minimum capital requirement at time t
ϑ_t = total regulatory capital at time t
ω_t = risk weighted assets at time t
BM_t= book-to-market ratio at time t
$(1 + [BM_t])$ = percentage (%) adjustment to risk weighted assets at time t
t = time index

The BM measure, while adjusting for a firm's exposure to financial distress risk, is reported in Section 2.6 to be a noisy measure for a portfolio of firms for any given time t (Fama and French 2008). Adapting the Fama and French (2008) change in the book equity value to the change in market price, and applying only positive changes, would provide an alternative measure of a firm's exposure to financial distress risk. Applying this approach equation (3.48) then becomes:

$$\varpi_t \geq \frac{\vartheta_t}{\omega_t \times (1 + [dB_{t-1,t} - dM_{t-1,t}])} \geq 8\% \qquad (3.49)$$

Where:

ϖ_t = minimum capital requirement at time t

ϑ_t = total regulatory capital at time t

ω_t = risk weighted assets at time t

$dB_{t-1,t}$ = change in book equity value from time $t - 1$ to t

$dM_{t-1,t}$ = change in market price from time $t - 1$ to t

$(1 + [dB_{t-1,t} - dM_{t-1,t}])$ = percentage (%) adjustment to risk weighted assets at time t

t = time index

Applying the adjustments specified in equation (3.49) at a minimum would provide a measure of the exposure to financial distress risk evaluated from the positive difference between the change variables, where the change in the book equity level is greater than the change in the market price.

This study proposes that the regulatory capital be adjusted not only for the positive changes, but also for the absolute change, that is, the *unsigned change*, from the change in book equity (or *total equity*) to the change in market price based on a particular threshold. Such that, if the difference between the two variables increase above a specified threshold then only would it have any effect on the regulatory capital. Such an approach expects that the accounting book equity (or *total equity*) variable should closely follow the movements of the market price variable.

In addition to monitoring a firm's book equity (or *total equity*) for a given time period, the change in other key accounting variables to the change in the market price variable would allow the regulatory capital levels to be adjusted to the variable pairs that exhibit the greatest level of difference. Such an approach, that this study proposes, would incentivise and direct a firm to take action to determine the cause for this difference. Based on Section 2.7, criterion 2, applying the *total equity* measure instead of book equity and monitoring the *total equity* change, or total asset, or total liabilities, or net income changes to the market price change is in effect monitoring and applying the accounting to market price relative delta measures specified in Section 3.2.5.

Applying such a regulatory adjustment using the relative delta measures would give:

$$\varpi_t \geq \frac{\vartheta_t}{\omega_t \times (1 + \Delta R_{t-1,t})} \geq 8\% \tag{3.50}$$

Where:

ϖ_t = minimum capital requirement at time t

ϑ_t = total regulatory capital at time t

ω_t = risk weighted assets at time t

$\Delta R_{t-1,t}$ = percentage (%) adjustment to risk weighted assets at time t

t = time index

This study introduces, applies and proposes the use of the $\Delta R_{t-1,t}$, termed the regulatory relative delta measure. The regulatory relative delta measure quantifies the unsigned change or difference between the change in key accounting variables, $dAC_{t-1,t}$ and the change in the market price variable, $dM_{t-1,t}$. This study proposes that the largest relative delta level based on the key accounting variables is chosen as the basis for the adjustment to the Basel capital requirement. The four measures proposed for this adjustment are presented in Table 3.11.

Table 3.11 Accounting and Market Price Regulatory Relative Delta

The table shows the absolute *accounting to market price relative delta* measures applied to calculate the proposed *regulatory relative delta* measure, ΔR, for time period $t-1$ to t. $dE_{t-1,t}$ is the change in total equity, $dA_{t-1,t}$ is the change in total assets, $dL_{t-1,t}$ is the change in total liabilities, $dI_{t-1,t}$ is the change in net income, $dM_{t-1,t}$ is the market price return, and t is the time index. $|\ \ |$ brackets signify the absolute or unsigned value for the bracketed expression.

Proposed $\Delta R_{t-1,t}$ Measure
$\lvert dE_{t-1,t} - dM_{t-1,t} \rvert$
$\lvert dA_{t-1,t} - dM_{t-1,t} \rvert$
$\lvert dL_{t-1,t} - dM_{t-1,t} \rvert$
$\lvert dI_{t-1,t} - dM_{t-1,t} \rvert$

Based on the absolute maximum accounting relative delta measures presented in Table 3.11, the regulatory relative delta measure that this study applies is specified by the following general formula:

$$\Delta R_{t-1,t} = \left|dAC_{t-1,t} - dM_{t-1,t}\right|_{max} \tag{3.51}$$

Where:
$\Delta R_{t-1,t}$ = regulatory relative delta measure
$\left|dAC_{t-1,t} - dM_{t-1,t}\right|_{max}$ = absolute maximum relative delta measure
t = time index

In equation (3.50) applying the regulatory relative delta equation (3.51) to the regulatory capital, ϑ, provides a measure of how much the regulatory capital must change to maintain the 8% minimum, i.e.

$$Adjusted\ Regulatory\ Capital = \vartheta_t \times (1 + \Delta R_{t-1,t}) \tag{3.52}$$

Equation (3.52) would be the result of the adjustment made to the risk weighted assets, ω, that is:

$$Adjusted\ Risk\ Weighted\ Assets = \omega_t \times (1 + \Delta R_{t-1,t}) \tag{3.53}$$

An intuitive implementation of equation (3.52) to determine the adjusted level of regulatory capital, ϑ_t, is to apply the regulatory relative delta adjustment directly to the 8% minimum capital requirement, such that:

$$Adjusted\ Regulatory\ Capital = 8\% \times (1 + \Delta R_{t-1,t}) \tag{3.54}$$

Equation (3.54) is applied in this study for the UK banks to determine the change in the level of regulatory capital before and after the 2005 accounting change. In addition, this equation is implemented at various thresholds specified by the system of statements in expression (3.55).

$$
\begin{gathered}
if\ \Delta R_{t-1,t} \leq \lambda\ then \\
Minimum\ (Min.)Regulatory\ Capital = 8\% \\
\\
if\ \Delta R_{t-1,t} > \lambda\ then \\
Adjusted\ Min. Regulatory\ Capital = 8\% \times (1 + \Delta R_{t-1,t})
\end{gathered}
\tag{3.55}
$$

Where:

$\Delta R_{t-1,t}$ = regulatory relative delta

λ = threshold level

t = time index

From expression (3.55) the regulatory relative delta measure, $\Delta R_{t-1,t}$, would be monitored for the largest absolute accounting total to market price relative delta level, specified in Table 3.11. If the regulatory relative delta level is the same or less than the threshold level, λ, then the unchanged 8% minimum regulatory capital would be applied for the risk weighted assets, ω. This condition is specified by the conditional expression, $\Delta R_{t-1,t} \leq \lambda$, in expression (3.55).

However, if the regulatory relative delta level exceeds the threshold, λ, then the regulatory relative delta adjustment would be applied to change the 8% minimum capital. This condition is specified by the second conditional expression, $\Delta R_{t-1,t} > \lambda$, in expression (3.55).

3.9.7 UK Bank Regressions for Relative Delta and Historical Value-at-Risk Actual

Building on the sample level regression analysis specified in section 3.9.3, this section specifies tests applied at the individual primary bank level. For each primary bank, to determine the relationship between the relative delta variable and the Value-at-Risk Actual, time series regression is applied.

To strengthen evidence to verify this research's null hypothesis at the bank level, applying the same reasoning from Section 3.9.3, it would be expected that the regressive relationship between the relative delta and Value-at-Risk variables for before the 2005 accounting change would be maintained after the change. The ideal expectation would be that the relative delta measure would not exhibit a significant relationship to Value-at-Risk levels after 2005. From Section 3.9.3 such a relationship would signify that the relative delta variations were not the same as risk exposures measured using Value-at-Risk.

The time series regression applied at the bank level to determine the relationship between the relative delta variable and the Value-at-Risk Actual variable is specified by the following:

$$V_{\mathrm{t}} = a_T + b_T(dAC - dM)_{t-1,t} + e_t \tag{3.56}$$

Where:

V_{t} = *Historical Value-At-Risk Actual* at time t for a primary sample bank at the 95% confidence level for the 250-day time horizon

$(dAC - dM)_{t-1,t}$ = relative delta measure: average natural log change in the key accounting variable to the market price return variable at time t for a primary sample bank

b_T = regression slope

a_T = regression intercept

e_t = error term representing the difference between the actual dependent variable values to the calculated dependent variable values using the regression equation

T = maximum time series year count

t = time series index: t = *1*, *2*, ..., T

3.10 Summary

This chapter has formally presented and refined this study's research question. The null hypothesis has been formally presented and a series of detailed null hypotheses specified. Details regarding the methodological approach and quantitative analytical methods that this study applies to test its null hypothesis have been specified. The construction for the extension of the Fama and French (2008) time dependent treatment of the book-to-market ratio, termed the relative delta measure, is detailed for its application to test the null hypothesis. This chapter has also provided the construction details for the regulatory relative delta measurement framework that is also applied to test the null hypothesis.

Chapter 4 Analysis and Results

4.1 Chapter Introduction

This chapter presents and analyses results produced to examine the null hypothesis presented in Section 3.3.1. The null hypothesis expects accounting quality (see Section 2.9) in UK banks that adopted the IASB accounting standards in 2005 to remain unchanged after this adoption. The framework for the tests applied and examination of the results is guided by the hypothetico-deductive methodological approach and falsification theory. These tests and the quantitative analytical methods aligned to this methodological framework are presented and referred to in Chapter 3 (see Chapter 3, Section 3.8, for an introduction to the tests conducted to produce the results presented in this chapter). The general analysis presented in this chapter reports and examines material and statistical significance to build conclusive evidence to determine the level of *verifiability*, or conversely *falsifiability*, of this study's null hypothesis. As stated in Chapter 3, the results from these tests are assessed to determine if they provide evidence to confirm the expectations of the conclusive statements presented in Chapter 5. Ultimately, it is the evidence from these tested statements that this study assesses to deduce whether they *add strength to verify* the null hypothesis, or if they *add strength to falsify* or weaken the null hypothesis.

To gather evidence to test the null hypothesis, as previously stated, quantitative analytical methods are applied for before and after the 2005 accounting change. These analytical methods are applied to determine the relationship between selected market and accounting variables for banks that changed accounting standards in 2005 and are registered with the LSE's UK banking sector. To support the null hypothesis this study expects the banks to exhibit levels of a *difference component*, specified as the measure of the difference between the change in key accounting total variables and the market price return variable (see Sections 3.2.3 to 3.2.5), that remain at the same level after the 2005 accounting change when compared to before. Such an observation, based on the relationship alluded to between the *difference component* and accounting quality in Section 2.9.3, would indicate that there was no effect to accounting quality, after the accounting change. Ideally, based on the research question (see Section 3.2) and from the general financial system's perspective (Basel 2011, IASB 2009), it would be expected for this *difference component* to be significantly less after the accounting change, and thus reflect an improvement in accounting quality, and also reflect a decrease in the level of exposure to accounting quality risk (see Section 2.9.3), after 2005.

The principal bank variables tested are the market price, the change in market price (market price return), the market price return Value-at-Risk, the key accounting total variables: total equity, total assets, total liabilities and net income, and this study's derived variables: the relative delta, the accounting Value-at-Risk and the regulatory relative delta.

As stated earlier, the null hypothesis test results presented in this chapter concentrate and rely on material and statistical significance. The analytical methods applied to quantify significance for selected variables include descriptive statistics, distribution analysis, correlation analysis and regression analysis. These analytical methods applied, and results presented and analysed in this chapter, are for the time range 1992 to 2009. The analysis and discussions principally concentrate on changes in material and statistical significance for results before 2005, and for results after 2005. Within this 1992 to 2009 time range, results are presented and analysed on a yearly basis. In addition, this study applies the time range approach detailed in Jensen et al. (1972) and Fama and French (2008), by specifying the time series range 1994 to 2008 and sub-periods within this time range - 1994 to 2004 and 1994 to 2007 (see Section 3.7.7). The time series ranges assist this study by increasing its observation for the bank sample by pooling the number of firms in the sample by the number of observations. In effect, this time series approach provides $N \times T$ observations, where N is the number of firms in a sample or group and T the number of time series years.[40]

4.1.1 Samples and Control Group Setup

The analytical methods applied in this study as mentioned previously include regression analysis. The specific regression models applied in this study are the cross-sectional regression model specified by Fama and French (2008), and the time series regression

[40] It is noted that in the result tables where the number of pooled observations are stated, the number of observations may differ by 1 or 2 observations when compared to the $N \times T$ formula. This difference is due primarily to adjustments from rounding effects, and omission of items. Omitted items are presented in Appendix Z. This study considers these adjustments not to impact its results significantly.

model specified by Jensen et al. (1972). When examining the application in this study of these regression approaches when analysing their results, both Fama and French (2006, 2008) and Jensen et al. (1972) find that the cross-sectional regression approach, applied to test variables to better estimate average expected portfolio risk premiums and returns, is subjected to regression slope estimate errors. They find that a regression slope for an entire portfolio is affected by the mechanism for the linear regression model itself. In that, the linear regression model specifies for a relationship a model based on how closely its slope can fit equidistantly from the modelled variable data points. If, at a given instance in time, a proportion of portfolio returns were linearly distributed in clusters of groups at a distance above and below its modeled regression slope, the slope would provide a measure that would be biased towards the average returns for the portfolio. To have a contemporary regression that is less biased and be able to improve estimates of expected returns for firms in such a portfolio, first the firms in the entire portfolio would need to be grouped into those that have returns above the slope and those that have returns below the slope. Then two regressions would be performed, one for each group. In this design, the slopes produced by the resulting models would better reflect the expected risk premiums and returns for those concentrated firms compared to the slope for the entire portfolio.

To determine variables that would help to better estimate expected returns, Fama and French (2008) grouped firms registered with the New York Stock Exchange (NYSE) into two groups; firms with above and, firms with below the 20th percentile level of market capitalisation, where market capitalisation is specified to be analogous to the market value measure. Cross-sectional regression was then applied to the two individual groups, effectively two portfolios. Although Fama and French (2008), for a given time instance, does apply cross-sectional regression to each market capitalised group, the significance for each regression slope is, however, calculated by applying the Fama and McBeth (1973) *t-statistic* that is based on a time series average of cross-sectional regression slopes.

Jensen et al. (1972) grouped NYSE firms based on monthly returns into 10 equal size groups, effectively 10 portfolios, with each portfolio containing contiguous and increasing returns. These returns are averaged on a monthly basis for each portfolio. Time series regression is then applied to each portfolio's average returns to estimate the individual portfolios expected risk premiums and returns compared to a market portfolio.

The grouping process applied by Fama and French (2008) and Jensen et al. (1972) in essence is applied in this study for regression and other analytical methods with the motivation to examine its null hypothesis. From the sample selection criteria specified in Section 3.2.4, this study approaches the grouping effect in two ways. Firstly, to test the null hypothesis at group level, this study treats banks in the LSE banking sector as a *clustered group*. This study tests, for before and after the 2005 accounting change, selected variables from this primary group as a portfolio in isolation from other firms in the LSE. Then a second *portfolio* of banking related financial services firms that apply the bank accounting template and also changed accounting standards in 2005, is selected from the LSE. To corroborate the validity for the primary *portfolio* test results, the same primary group tests are also applied to the *closely clustered* secondary group. To determine the general bank and banking related firms reactions to the 2005 change, the primary group is combined with the secondary group. The same tests applied to the primary group are applied to this primary and secondary grouping. Secondly, to refine the null hypothesis tests, the primary group is ungrouped to its constituent firms. Time series regression is then applied to selected variables at the individual bank level to determine variable reactions before and after 2005. This study formally specifies the primary group as the Primary sample and the secondary group as the Secondary sample, and the primary and secondary grouping collectively as the Primary and Secondary sample. The firms selected for the Primary sample and Secondary sample are presented in Table 3.6.

Examining the change from before to after the 2005 accounting adoption of the Primary sample and the Secondary sample *difference component*, measured from the difference between the change in accounting total variables and the change in the market price variable, would provide strong evidence to accept or reject this research's null hypothesis. That is, if accounting quality measured by the average level of the *difference component* from the change variables remained at the same level after 2005, this would be considered as direct evidence to strengthen the case to accept the null hypothesis. On the contrary, if a materially or statistically significant change in this *difference component* after 2005 is evidenced, as discussed in Section 1.2, it may be contended that this increase in *difference* is as a consequence of either normal economic and/or general market forces, or deterioration in accounting quality, or a combination of both.

To isolate the Primary sample and the Secondary sample to effects from general economic and general market variable reactions, this study introduces a control group. This control group is selected from a sample of firms that did not change accounting standards in 2005 but applied the UK GAAP's ASB accounting standards approach for before and the subsequent years after 2005. These control group firms are selected from the LSE and are banking related financial services firms that apply the bank accounting template. This study refers to the selected control group of firms formally as the Control group. The Control group selection criteria are specified in Section 3.6.1 and the Control group firms are presented in Table 3.7. Tests applied to the Primary sample and the Secondary sample are also applied to the Control group to determine if any significant material and statistical reactions, to general economic and market conditions, are observed for the Primary sample and the Secondary sample compared to the Control group. The same tests are applied to the samples and the control group to determine also if any significant material and statistical changes to the *difference component* were observed for the Primary sample and the Secondary sample compared to the Control group. This study applies such a test approach to effectively control for the 2005 accounting change.

The samples and the control group reactions to economic and general market conditions are tested using the change in the market price (market price return) and Value-at-Risk variables. These samples and control group variables are tested with corresponding *change* and Value-at-Risk variables of selected Gross Domestic Product (GDP) sector indices, stock market indices, interest rate indicators and foreign exchange rates.

4.1.2 Chapter Organisation

Generally, the results sections in this chapter are structured to introduce first the results tables and the figures examined in that section. The actual result tables and figures are then presented. A single result table[41] is generally organised into sample and control

[41] The tables in this chapter tabulate numerical results to varying degrees of decimal point significance. Zeros or hyphens exhibited as an entire result are considered below the generally reported decimal point significance or cannot be substantiated. Such entries are not considered significant to the findings of this research.

group result panels. Where, in general, the first panel presents results for the Primary and Secondary sample, the second panel presents results for the Control group, where presented, the third panel presents results for the Primary Sample, and where presented, the fourth panel presents results for the Secondary sample. When presenting figures, this same *samples and control group* sequence is generally adopted.

The results reported in the tables and figures are then examined and analytically discussed. This analysis concentrates on evaluating evidence for the presence or the non-presence of material and statistical variable significance for before and after 2005. The analysis generally follows the pattern of examining first the Primary and Secondary sample results, then the Control group results, then when presented may be followed by an analysis of the Primary sample results, and when presented may be followed by an analysis of the Secondary sample results.

To emphasise the analytical approach presented in this chapter, for the key variables introduced and tested in each results section an analysis is presented. This analysis examines whether the results provide evidence to support this study's theoretical discussion (see Chapter 3, Section 3.2) and null hypothesis (see Chapter 3, Section 3.3.1), that discusses whether accounting quality improved for UK banks that adopted the IFRS accounting standards in 2005 (see also Chapter 2, Sections 2.2 and 2.3). The analysis presented, at the samples and control group level and also at the individual bank level, examines variable reactions for before the 2005 accounting change compared to the reactions after the change. The findings from this analysis are then applied to test the null hypothesis by examining a series of testable conclusive statements. This series of conclusive statements are presented in Chapter 5, Table 5.1 to Table 5.11 under the *Statement Tested* column. From this basis and for reasons of brevity, it is expected that the variable analysis presented and referred to in this chapter is linked to, and interpreted within, this general theoretical and methodological framework.

The following provides a summary description of the sections presented in this chapter. In addition, a description of the tests, introduced and referred to in Section 3.8, that are applied to produce the results is presented together with references to relevant results from the appendices.

Section 4.2 presents summary results and analysis based on relative percentage changes. These percentage changes are based on results presented at a detailed level in Table P.1, Table P.2, Table R.4, Table 4.13, and Table 4.24. Section 4.2.1 details the formulas applied to produce the percentage changes based on two averaging approaches applied to the detailed results.

Section 4.2.2 presents relative percentage change results and analysis for before and after 2005 for yearly market price return descriptive statistics. In addition, percentage change results and analysis for distribution descriptive statistics are presented. These percentage change levels are based on the results from Appendix P.1.

Section 4.2.3 presents relative percentage change results and analysis for before and after 2005 from the variance-covariance, historical and Monte Carlo simulation Value-at-Risk backtested results presented in Appendix P.2. These results are based on selected Value-at-Risk time horizons at the 95% confidence level and calculated for a selected number of historical and simulated market price return observations. From the basis of the analysis presented in Section 4.2.3 and Appendix P.2, Appendix P.3 presents results for the Historical Value-at-Risk Actual measure[42] that is tested at the 95% confidence level to determine its time horizon characteristics. Appendix P.4 presents results for the 250-day time horizon for this Value-at-Risk measure tested to determine its confidence level characteristics. Appendix P.5 tests this Historical Value-at-Risk Actual variable with the market price return variable to determine their levels of significance.

Section 4.2.4 provides the analysis for the reactions to economic and market conditions, for the samples and the control group market price return variable and the Historical Value-at-Risk Actual variable. The economic condition reaction analysis is provided with reference to tests with GDP levels. Analysis of the market conditions is provided with reference to tests with stock market indices, selected short and long-term benchmark interest rates, and selected foreign exchange currency pair rates. The analysis presented in Section 4.2.4 is based on the results and analyses presented in Appendix P.6 to Appendix P.15.

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[42] The Historical Value-at-Risk Actual measure is specified in Appendix N.8.

Section 4.2.5 presents relative percentage change results to determine how the market price return variable and the Historical Value-at-Risk Actual variable reacted with selected variables that include the book-to-market ratio, market value and key accounting total variables: total equity, total assets, total liabilities and net income. The tests are conducted on fiscal year-end totals. These percentage change levels reflect the descriptive statistics and correlation results presented in Appendix R and Appendix S.

Section 4.2.6 presents relative percentage change results for before and after 2005 for the relative delta variables applied to quantify the level of difference between the change in key accounting totals and market price return on a yearly basis. These percentage change levels are based on the results and analyses presented in Sections 4.5 and 4.8.

Section 4.2.7 presents relative percentage changes for before and after 2005 from the regression results based on the Historical Value-at-Risk Actual variable and the relative delta variable. These percentage change levels are based on the results and analyses presented in Sections 4.6 and V.5.

Section 4.3 presents the time series regression results for the relationship between the change in key accounting totals and market price return. Appendix U presents the cross-section regression results for the same relationship on a yearly basis.

Section 4.4 presents, for the samples and control group, t-test results that measure the statistical significance of differences between the key accounting totals and market price return regression slope coefficients presented in Section 4.3. The significance of differences tests are conducted for slopes within and between the samples and control group.

Section 4.5 presents results for the relative delta variables applied to quantify the difference between the change in key accounting totals and market price return on a yearly basis.

Section 4.6 presents time series regression results for the Historical Value-at-Risk Actual variable reactions to changes in the relative delta variable. Appendix V.1 to Appendix V.4 presents the cross-section regression results for the same relationship on a yearly basis. Appendix V.5 presents the time series regression results for the same relationship at the individual bank level.

Sections 4.7.1 and 4.7.2 present estimates for the *accounting Value-at-Risk* measure and its relation to the *market price return Historical Value-at-Risk Actual* and the *relative delta*.

Section 4.8 presents relative delta variable results for the banks on an individual basis. These results quantify the difference between the change in key accounting totals and market price return on a yearly basis.

Section 4.9 presents at the individual bank level, estimates of the *accounting Value-at-Risk* measure and its relation to the market price return Historical Value-at-Risk Actual variable and the *relative delta* variable.

Section 4.10 presents the adjustment to the Basel minimum capital requirement at the individual bank level from the proposed regulatory relative delta framework. This framework is specified in Section 3.9.6 and described in Appendix K.

Section 4.11 proposes a conceptual bank technology framework at the firmwide supervisory and regulatory reporting level. This framework is proposed to address data considerations in order to report the measures accounting Value-at-Risk, relative delta, and the regulatory relative delta.

Section 4.12 presents a summary of the analysis and the main findings from the results in this chapter.

4.2 Analysis and Summary Results for Relative Percentage Change of Averages for Before to/and After 2005

This section reports and analyses summary results that are produced from *detailed* results presented in Table 4.6 to Table 4.27 and the tables in Appendix P to Appendix R. These detailed results are considered central to the examination of this study's null hypothesis. The summary results in Table 4.1 to Table 4.4 are based on percentage changes that are presented by first applying an averaging process to the selected *detailed* results (see Section 4.2.1). These results consist of percentage change analysis for *before to after 2005* and/or for *before and after 2005*. The latter approach is applied to provide greater significance to the results recorded after 2005, this the year of the accounting change. The results for *before to after 2005* are calculated by applying equation (4.1). The results for *before and after 2005* are calculated by applying equation (4.2). These approaches differ from the percentage change analysis in Sections 4.3 to 4.10 and Appendix P to Appendix V that applies percentage changes to *non-averaged* detailed results.

4.2.1 Percentage Change Calculations for Summary Results

The following percentage change calculations are applied to present the summary results in Table 4.1 to Table 4.4.

Before to After 2005 Relative Percentage Change of Averages

Table 4.1 Panel A and Table 4.4 Panel A present results that compare variable reactions for before and after 2005 by applying the following percentage change formula:

$$\mathit{\Gamma}_{L,U} = \frac{\bar{\mathit{\Gamma}}_U - \bar{\mathit{\Gamma}}_L}{\bar{\mathit{\Gamma}}_L} \times 100 \tag{4.1}$$

Where:

$\mathit{\Gamma}_{L,U}$ = relative percentage change from the Lower year average, $\bar{\mathit{\Gamma}}_L$, to Upper year average, $\bar{\mathit{\Gamma}}_U$.

$\bar{\mathit{\Gamma}}_L$ = Lower year average calculated by taking the average for the year range starting from year 1992 to the ending year 2004. Similar to $\bar{\mathit{\Gamma}}_U$ the start year applied may be 1993 or 1994.

$\bar{\mathit{\Gamma}}_U$ = Upper year average calculated by taking the average for the year range starting from year 1992 to the ending year: 2005, 2006, 2007, 2008, or 2009. Depending on the results analysed, the start year applied for analysis may be 1993 or 1994.

Before and After 2005 Relative Percentage Change of Averages

This section presents results in Table 4.1 Panel B to Table 4.3 and Table 4.4 Panel B that compare variable reactions for before and after 2005 by applying the percentage change formula shown in equation (4.2). This formula specifies an *upper bound* year that starts at the 2005 year compared to the 1992 starting year applied in equation (4.1). This formula is specified by:

$$\Gamma_{L,u} = \frac{\bar{\Gamma}_u - \bar{\Gamma}_L}{\bar{\Gamma}_L} \times 100 \qquad (4.2)$$

Where:

$\Gamma_{L,u}$ = relative percentage change from the Lower year average, $\bar{\Gamma}_L$, to Upper year average, $\bar{\Gamma}_u$.

$\bar{\Gamma}_L$ = Lower year average calculated by taking the average for the year range starting from year 1992 to the ending year 2004. Depending on the results analysed, the start year applied for analysis may be 1993 or 1994.

$\bar{\Gamma}_u$ = Upper year average calculated by taking the average for the year range starting from year 2005 to the ending year: 2005, 2006, 2007, 2008, or 2009.

As indicated earlier, this approach specified in equation (4.2) provides greater significance to the variable levels recorded for the 2005 year and after, for its percentage changes, than does equation (4.1). It is expected that both formulas, when applied to analyse the same variables, will infer the same general pattern. As evident when comparing the results in Table 4.1 Panel A (reported using equation (4.1)) and Table 4.1 Panel B (reported using equation (4.2)) that equation (4.2) generally *magnifies* the percentage change results reported using formula (4.1).

4.2.2 Market Price Returns Before and After 2005 – Examination of Material Significance

The results presented in Table 4.1 show percentage changes for the average samples and control group variables: market price returns, variance-covariance Value-at-Risk and distribution statistics, for before and after 2005. The average percentage changes presented in this table are produced from the results in Table P.1. The difference between the results presented in Table 4.1 Panel A and Panel B is that Panel A applies equation (4.1) and Panel B applies the *more 2005 sensitive* equation (4.2).

Table 4.1 Summary Results: Relative Percentage Change of Averages for Market Price Return Distribution and Variance-Covariance Value-at-Risk Descriptive Statistics for Before To/And After 2005

The Table 4.1 Panel A columns present the relative percentage changes of averaged results for *before 2005 to after 2005* calculated using equation (4.1). The Table 4.1 Panel B columns present the relative percentage changes of averaged results for *before 2005 and after 2005* calculated using equation (4.2). Table 4.1 Panel A and Panel B columns and sub-panels present the following:

The Variable column presents the following sub-panels for the samples and the control group respectively: the Return sub-panel presents the market price return percentage changes; the Variance-Covariance VaR sub-panel presents market price return variance-covariance Value-at-Risk percentage changes; the Dist. sub-panel presents the 300-day market price return distribution percentage changes; the Skewness sub-panel presents the distribution skew percentage changes; the Kurtosis sub-panel presents the distribution kurtosis percentage changes; and, the Excess Kurtosis sub-panel presents the distribution excess kurtosis percentage changes.

The Sample and Control Group column presents the samples and the control group result sub-panels for the variables presented in the Variable column.

The Percentage Change of Averages (%) column presents the following columns: the Mean column presents the percentage changes of the mean for the variables presented in the Variable column; the Standard Deviation of Sample Means column presents the percentage changes of the standard deviation of means for the variables presented in the Variable column; the 1993 to 2004 column represents the year range applied to calculate the lower bound average in equation (4.1) and (4.2); in Table 4.1 Panel A, the 1993 to 2007, 1993 to 2008 and 1993 to 2009 columns represent the year ranges applied to calculate the upper bound averages in equation (4.1); in Table 4.1 Panel B the 2005 to 2007, 2005 to 2008 and 2005 to 2009 columns represent the year ranges applied to calculate the upper bound averages in equation (4.2).

Table 4.1 (Continued)

PANEL A
Percentage Changes for Before To After 2005

Variable	Sample and Control Group	Percentage Change of Averages (%)					
		Mean			Standard Deviation of Sample Means		
		1993 to 2004					
		1993 to 2007	1993 to 2008	1993 to 2009	1993 to 2007	1993 to 2008	1993 to 2009
Return	Primary and Secondary	-9.43	-49.06	-36.07	-0.92	8.03	10.74
	Control	31.20	-31.00	-1.18	0.25	0.63	0.07
	Primary	-18.87	-67.25	-58.24	-6.09	9.24	16.62
	Secondary	-3.26	-38.95	-22.85	2.22	6.25	7.84
Variance-Covariance VaR	Primary and Secondary	3.69	-0.56	-10.60	-10.00	-4.77	5.88
	Control	1.36	-1.94	-9.31	-8.20	-11.48	-10.90
	Primary	8.45	5.31	-9.12	-8.86	-4.11	24.20
	Secondary	0.78	-4.15	-11.49	-9.74	-3.37	-1.36
Dist.	Primary and Secondary	-0.31	-23.85	-43.53	-5.78	4.17	12.16
	Control	40.69	13.79	-14.81	-7.80	-5.93	-7.88
	Primary	-9.71	-34.64	-68.74	-11.58	-3.29	15.17
	Secondary	6.67	-16.25	-28.24	-4.00	7.50	5.10
Skewness	Primary and Secondary	-22.59	-29.24	-38.25	-11.25	-12.13	-10.07
	Control	-8.74	-4.11	-0.66	4.26	3.06	3.39
	Primary	14.25	25.97	6.45	-12.57	-16.18	-3.50
	Secondary	-20.29	-28.33	-29.52	-9.39	-9.14	-12.94
Kurtosis	Primary and Secondary	-7.90	-8.65	-7.97	-15.05	-16.24	-14.37
	Control	1.16	-0.23	-1.00	-1.91	-6.07	-8.53
	Primary	-5.99	-6.48	2.60	-16.36	-20.06	-8.24
	Secondary	-8.46	-9.28	-11.04	-14.28	-14.55	-17.71
Excess Kurtosis	Primary and Secondary	-10.92	-11.96	-11.01	-15.05	-16.24	-14.37
	Control	1.97	-0.40	-1.71	-1.91	-6.07	-8.53
	Primary	-9.71	-10.50	4.22	-16.36	-20.06	-8.24
	Secondary	-11.21	-12.30	-14.63	-14.28	-14.55	-17.71

Panel note:
Percentage changes calculated using equation (4.1).

Table 4.1 (Continued)

PANEL B
Percentage Changes for Before And After 2005

Variable	Sample and Control Group	Percentage Change of Averages (%)					
		Mean			Standard Deviation of Sample Means		
		1993 to 2004					
		2005 to 2007	2005 to 2008	2005 to 2009	2005 to 2007	2005 to 2008	2005 to 2009
Return	Primary and Secondary	-47.17	-196.23	-122.64	-4.59	32.11	36.51
	Control	156.00	-124.00	-4.00	1.27	2.53	0.25
	Primary	-94.37	-269.01	-198.03	-30.43	36.96	56.52
	Secondary	-16.28	-155.81	-77.67	11.11	25.00	26.67
VaR	Primary and Secondary	18.47	-2.23	-36.05	-50.00	-19.08	20.00
	Control	6.80	-7.77	-31.65	-40.98	-45.90	-37.05
	Primary	42.26	21.26	-31.02	-44.30	-16.46	82.28
	Secondary	3.89	-16.61	-39.08	-48.72	-13.46	-4.62
Dist.	Primary and Secondary	-1.54	-95.38	-148.00	-28.89	16.67	41.33
	Control	203.45	55.17	-50.34	-38.98	-23.73	-26.78
	Primary	-48.57	-138.57	-233.71	-57.89	-13.16	51.58
	Secondary	33.33	-65.00	-96.00	-20.00	30.00	17.33
Skewness	Primary and Secondary	-112.97	-116.94	-130.06	-56.26	-48.50	-34.24
	Control	-43.69	-16.46	-2.24	21.28	12.22	11.52
	Primary	71.24	103.90	21.92	-62.85	-64.71	-11.91
	Secondary	-101.47	-113.30	-100.35	-46.96	-36.55	-44.00
Kurtosis	Primary and Secondary	-39.52	-34.62	-27.10	-75.26	-64.97	-48.84
	Control	5.82	-0.93	-3.40	-9.54	-24.27	-29.01
	Primary	-29.97	-25.92	8.85	-81.82	-80.25	-28.03
	Secondary	-42.30	-37.13	-37.54	-71.41	-58.20	-60.20
Excess Kurtosis	Primary and Secondary	-54.60	-47.82	-37.44	-75.26	-64.97	-48.84
	Control	9.83	-1.61	-5.81	-9.54	-24.27	-29.01
	Primary	-48.54	-41.98	14.34	-81.82	-80.25	-28.03
	Secondary	-56.04	-49.19	-49.73	-71.41	-58.20	-60.20

Panel note: Percentage changes calculated using equation (4.2).

Table note: Summary percentage change results are produced from the detailed results presented in Table P.1.

Analysis

Table 4.1 Panel A and Panel B show that, in the respective Returns sub-panel, the average 1-day yearly returns for the Primary and Secondary sample experienced a materially significant decrease after 2005 when compared to before. The Control group registered higher returns in 2007, however, for 2008 and 2009 followed a similar returns profile to the Primary and Secondary sample. The standard deviation of sample means for the Primary and Secondary sample shows that the difference in the levels of returns from each firm increased in 2008 and 2009. The evidence from Table 4.1 suggest that the pricing levels for firms within the Primary banking sample, that is for the banks in the UK banking sector, generally became more varied after 2005 than before.

Table 4.1 Panel A and Panel B also present, in the respective Variance-Covariance VaR sub-panel, the samples and the control group average yearly variance-covariance Value-at-Risk for the 1-day time horizon at the 95% confidence level. For the Value-at-Risk results presented, a larger negative number specifies an increase in Value-at-Risk. Examining the results in Table 4.1 shows that a general increase in variance-covariance Value-at-Risk was registered after 2005. This suggests an increase in average market price volatility levels for the samples and the control group after 2005, specifically for years 2008 and continuing in to 2009.

Table 4.1 Panel A and Panel B also present the distribution statistics based on the 300 historical 1-day returns applied to determine the variance-covariance Value-at-Risk results presented in the Variance-Covariance VaR sub-panel. The Dist. sub-panel presents the samples and the control group average distribution mean for the 300 historical 1-day returns. The distribution results exhibit varying positive and negative average means after 2005.

The Skewness sub-panel presents the degree of skewness for the distribution and shows that the Primary and Secondary sample become increasingly left skewed (negatively skewed). This is due to the characteristics from the Secondary sample distribution that exhibited higher sample positive returns after 2005. However, the Primary sample shows an increasing right skewness (positive skewness) from 2005 to 2008, then exhibiting movement towards the normal distribution in 2009. This movement resultant from increased negative returns during 2008 and then *decreased* negative returns in

2009. The Control group shows a decreasing negative skewness, exhibiting a move towards the normal distribution after 2005, and thus showing decreasing positive returns after 2005.

The Excess Kurtosis sub-panel that presents the Kurtosis results minus 3 (-3), after averaging, shows that the Primary and Secondary sample exhibits a decrease in excess kurtosis after 2005, suggesting a decreasing leptokurtic distribution. This distribution shows that the returns are generally distributed at a *flatter* level around the mean after 2005 when compared to before. This observed excess kurtosis appears to be influenced by the distribution characteristics of the Secondary sample. The Primary sample also shows a movement towards a more flat distribution in 2007 and 2008, and a movement towards a more narrowly peaked leptokurtic distribution in 2009. The Control group generally exhibits a decreased leptokurtic distribution after 2005.

4.2.3 Average Value-at-Risk Levels Before and After 2005 – Examination of Material Significance

Table 4.2 presents relative percentage changes for the Value-at-Risk models for before and after 2005 from results presented in Table P.2. Analysis of the Table 4.2 results presented in this section refers to evidence from the Historical Value-at-Risk Actual variable charts presented in Figures P.1 to P.24.

Table 4.2 Summary Results: Relative Percentage Change of Averages for Value-at-Risk Models for Before And After 2005

The Table 4.2 columns present the relative percentage changes of averaged results for *before 2005 and after 2005* calculated using equation (4.2). The Table 4.2 columns and panels present the following:

The Value-at-Risk Model column presents the Value-at-Risk model applied to the Primary and Secondary sample and the Control group for the 1-day, 250-day and 500-day time horizon panels.

The Sample and Control Group column presents the samples and the control group result panels.

The Time Horizon [*Year Range*] column presents the year ranges applied to calculate the lower bound average in equation (4.2).

The Percentage Change of Averages (%) column presents the following columns: the 1993 to 2004 column repeats the Time Horizon [*Year Range*] column's maximum year range applied to calculate the lower bound average in equation (4.2); the 2005 to 2007, 2005 to 2008 and 2005 to 2009 columns represent the year ranges applied to calculate the upper bound averages in equation (4.2); the Returns column presents the market price return percentage changes; the VaR column presents the Value-at-Risk percentage changes; the In H. (*In-time Horizon breach*) column presents the percentage changes for the backtest results based on the number of times the market price return breached the Value-at-Risk level within the specified time horizon; and the End H. (*End-of-time Horizon breach*) column presents backtest results reproduced from Table P.2 and indicates if the actual market price return variable breached the Value-at-Risk level at the time horizon date.

Table 4.2 (Continued)

Value-at-Risk Model	Sample and Control Group	Time Horizon [Year Range]	Percentage Change of Averages (%)											
			1993 to 2004 (*Maximum Year Range before 2005*)											
			2005 to 2007				2005 to 2008				2005 to 2009			
			Returns	VaR	In H.	End H.	Returns	VaR	In H.	End H.	Returns	VaR	In H.	End H.
Variance-Covariance	Primary and Secondary	1-Day [1993 to 2004]	-47.17	18.47	-	-	-196.23	-2.33	-	-	-122.64	-36.05	-	-
	Control		156.00	6.80	-	-	-124.00	-7.77	-	-	-4.00	-31.65	-	-
Historical	Primary and Secondary		-47.17	17.74	-	-	-196.23	-2.01	-	-	-122.64	-35.45	-	-
	Control		156.00	10.76	-	-	-124.00	-6.85	-	-	-4.00	-32.79	-	-
Monte Carlo Simulation	Primary and Secondary		-47.17	20.92	-	-	-196.23	-3.00	-	-	-122.64	-38.93	-	-
	Control		156.00	2.84	-	-	-124.00	-13.80	-	-	-4.00	-40.53	-	-
Variance-Covariance	Primary and Secondary	250-Day [1995 to 2004]	59.28	20.02	-86.62	-	-104.49	23.77	1.28	1	-171.38	15.91	91.24	1
	Control		495.96	-1.74	-97.64	-	154.21	5.29	-53.42	1	-1.68	2.29	18.87	1
Historical	Primary and Secondary		59.28	54.65	-39.07	1	-104.49	58.58	15.55	1	-171.38	8.45	40.25	1
	Control		495.96	77.67	-51.14	-	154.21	85.65	-16.55	1	-1.68	57.66	10.60	1
Monte Carlo Simulation	Primary and Secondary		59.28	50.65	-38.69	1	-104.49	53.76	13.99	1	-171.38	8.94	42.49	1
	Control		495.96	70.07	-55.97	-	154.21	75.16	-40.25	1	-1.68	53.02	-16.98	1
Variance-Covariance	Primary and Secondary	500-Day [1998 to 2004]	230.34	-29.56	-83.38	-	38.90	-13.77	-60.21	1	-141.89	-1.25	27.73	1
	Control		2,459.80	-35.61	-91.57	-	1,603.68	-20.77	-84.19	-	737.25	-8.39	-39.91	1
Historical	Primary and Secondary		230.34	-1,332.15	-96.64	-	38.90	-924.51	-67.72	1	-141.89	-642.44	-19.71	1
	Control		2,459.80	-212.52	-98.74	-	1,603.68	-108.03	-73.62	1	737.25	-38.88	-28.48	1
Monte Carlo Simulation	Primary and Secondary		230.34	-633.39	-62.70	-	38.90	-429.12	-45.19	1	-141.89	-289.36	-37.42	1
	Control		2,459.80	-283.17	-94.07	-	1,603.68	-162.15	-49.32	1	737.25	-77.82	-8.93	1

Table notes:
Percentage changes calculated using equation (4.2).
Summary percentage change results are produced from the detailed results presented in Table P.2.

Analysis

Table 4.2 presents the three Value-at-Risk models applied in this study. The Returns column in this table shows the change after 2005 compared to before for average yearly returns calculated using the specified number of historical time horizon days. It is noted that the returns for the 1-day variance-covariance Value-at-Risk model for the Primary and Secondary sample and the Control group are the same changes presented in Table 4.1 Panel B. In addition, the End H. column presents a coding where a 1 registers a yearly end-of-time horizon breach. The results presented in this column are reproduced from Table P.2 and do not make the relative comparison to before 2005.

For the 1-day time horizon, Table 4.2 shows that the three Value-at-Risk models did not register significant breaches[43] based on yearly averages. However, examining the charts presented in Figures P.1, P.2, P.7, P.8, P.13, P.14, P.19 and P.20, it is evident that observable materially significant breaches did take place after 2005 for the Historical Value-at-Risk Actual variable. This evidence is visually corroborated by the charts presented in Figures 1.1 and 1.2 that uses the Monte Carlo Simulation Value-at Risk model. Examining Table 4.2 and Table P.2 (Panels A and B), the three models show that the Value-at-Risk levels generally increased significantly for both the Primary and Secondary sample and the Control group after 2005 until 2009.

For the 250-day time horizon, Table 4.2 exhibits a decrease in the average yearly Value-at-Risk for both the Primary and Secondary sample and the Control group after 2005. This decrease is registered for the years 2007, 2008 and 2009. However, examining the percentage change of averages for the 2005 year, a materially significant percentage increase (-26.2%) was registered for the Variance-Covariance Value-at-Risk model (see Table P.2). Examining Table P.2 (Panels C and D), the three models show that the Value-at-Risk levels generally decreased after 2005 until 2007 and then increased significantly from 2008 to 2009.

For the 250-day *in-time horizon breaches*, Table 4.2 shows that generally after 2005 there was an increase in the number of breaches for the Primary and Secondary sample.

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[43] For the 1-day time horizon both the *in-time horizon breaches* and *end-of-time horizon breaches* have the same meaning.

Changes registered for 2009 exhibit a materially significant number of breaches after 2005 for all three models. The Control group after 2005 consistently registered lower levels of breaches compared to the Primary and Secondary sample. The *end-of-time horizon breaches* show that the three models registered breaches for both the Primary and Secondary sample and the Control group after 2005. It is noted that in Table P.2 an end-of-time horizon breach was registered for the Control group from the historical and Monte Carlo simulation models prior to 2005, in 2001.

The 500-day time horizon in Table 4.2 shows that, for both the Primary and Secondary sample and the Control group, the average yearly Value-at-Risk exhibit materially significant increases after 2005. These increases are registered by the three models with the variance-covariance model exhibiting a lower level of increase.

For the 500-day *in-time horizon breaches,* Table 4.2 shows that generally after 2005 there was a decrease in the average number of breaches for both the Primary and Secondary sample and the Control group. The *end-of-time horizon breaches* show that the three models also registered breaches after 2005. Table P.2 (Panel E), shows that end-of-time horizon breaches were registered for the historical and Monte Carlo simulation models prior to 2005, in 2002 and 2003.

Table 4.2, although showing summary results, loses some information due to rounding effects from arithmetic averaging. As stated earlier in this section, a more detailed graphical interpretation of the Table 4.2 results can be observed from the Value-at-Risk charts presented in Figures 1.1 and 1.2, and Figures P.1 to P.24. In addition, these results can also be observed in Figures 1.3 to 1.5.

Examining Table 4.2 and Table P.2, the three models show similar Value-at-Risk patterns for both the Primary and Secondary sample and the Control group after 2005. When examining the actual Value-at-Risk levels, it is difficult to draw a common conclusion from the three models. However, a highly significant result is the 500-day Value-at-Risk that generally shows firms in the Primary and Secondary sample became exposed to a significantly greater level of Value-at-Risk after 2005 when compared to the firms in the Control group.

4.2.4 GDP and General Market Conditions Before and After 2005 – Examination of Statistical Significance

This study has tested the market price return variable and Value-at-Risk variable to determine how the UK banks reacted to selected GDP sectors and general market indices before and after 2005. The general market indices were chosen to reflect selected domestic and world stock indices levels, selected short-term and long-term interest rates, and selected foreign exchange rates. To provide an analysis of the GDP sectors and general market reactions, the results presented in the tables from Appendix P.6 to P.15 are directly referenced.

Analysis

The results presented for the return variable in Table P.8, and for the Value-at-Risk variable in Table P.9, the sample panels generally exhibit evidence that the banks returns and Value-at-Risk reacted with statistical significance after 2005 in relation to the selected GDP sectors. A similar pattern of significance was exhibited with the selected LIBOR rates and foreign exchange currency pairs after 2005 compared to before. The results with the LIBOR variables are presented in Table P.13 and Table P.14, and foreign exchange currency pair variable results are presented in Table P.17 and Table P.18. The selected stock indices reacted differently exhibiting much closer levels of significance when comparing before and after 2005. However, maintaining the same pattern as exhibited by the other indicators tested, the stock indices also show statistical significance after 2005 compared to before. Results for the selected stock indices returns are presented in Table P.11, and Value-at-Risk results in Table P.12. Presented in Table P.15, the statistical evidence from the GILT Government benchmark bond rate tests suggest a deficiency in significant reactions registered before and after 2005 with the market price return variable. However, Table P.16 shows that generally the GILTS bond Value-at-Risk variable, until the 14-year bond and after the 20-year bond maturities, exhibit statistical significance with the sample Value-at-Risk variable.

It is difficult to conclude from these results that there were any direct effects from those sectors to influence the market price returns of UK banks after 2005. On the contrary, it may be contended that there is evidence to infer the banking sectors may have influenced these observed significances after 2005. This evidence being that the reported significance is in 2008, the year that banks showed significantly lower stock market prices, with lower levels of significance reported for 2007. Examining the Control group results, there is strong evidence that shows the market price returns and Value-at-Risk variables experienced similar changes when compared to firms that changed accounting standards in 2005.

The deduction from the results in Table P.8 to Table P.18 is that the UK banks and the Control group reacted similarly to GDP and selected market indicators after 2005. From this evidence, it is difficult to assert that any isolated bank volatility after 2005 would have originated from reactions to the GDP or the selected market indicators. Such a conclusion adds strength to the reasoning that the UK banking sector volatility levels and Value-at-Risk breaches exhibited in Figure 1.1 and Value-at-Risk breaches analysed in Section 4.2.3, Appendix P.2 and P.3, especially during 2005 and 2007, would be as a consequence to factors external to the selected economic and market indicators tested.

4.2.5 Selected Variable Totals Before and After 2005 – Examination of Material Significance

Table 4.3 presents percentage changes for the average samples and control group variable totals: book-to-market ratio (BM), market price, total equity, total assets, total liabilities and net income. In addition, the Historical Value-at-Risk Actual variable measured from 1994 is presented. The average percentage changes presented in Table 4.3 are produced from the results in Table R.4.

Table 4.3 Summary Results: Relative Percentage Change of Averages for Descriptive Statistics for the Totals and Historical Value-at-Risk Actual Variables for Before And After 2005

The Table 4.3 columns present the relative percentage changes of averaged results for *before 2005 and after 2005*, calculated using equation (4.2). The Table 4.3 columns and panels present the following:

The Total Variable column presents the following panels for the samples and the control group respectively: the BM panel presents the book-to-market percentage changes; the Market Price panel presents the market price percentage changes; the Total Equity panel presents the total equity percentage changes; the Total Assets panel presents the total assets percentage changes; the Total Liabilities panel presents the total liabilities percentage changes; the Net Income panel presents the net income percentage changes; and, the VaR panel presents the Historical Value-at-Risk Actual percentage changes.

The Sample and Control Group column presents the samples and the control group result panels for the total variables presented in the Total Variable column.

The Percentage Change of Averages (%) column presents the following columns: the Mean column presents the percentage changes for the mean of the variables in the Total Variable column; the Standard Deviation of Sample Means column presents the percentage changes of the standard deviation of means for the variables presented in the Total Variable column; the 1992 to 2004 column represents the year range applied to calculate the lower bound average in equation (4.2); the 2005 to 2005, 2005 to 2006, 2005 to 2007 and 2005 to 2008 columns represent the year ranges applied to calculate the upper bound averages in equation (4.2).

Table 4.3 (Continued)

Total Variable	Sample and Control Group	Mean 2005 to 2005	Mean 2005 to 2006	Mean 2005 to 2007	Mean 2005 to 2008	SD of Sample Means 2005 to 2005	SD of Sample Means 2005 to 2006	SD of Sample Means 2005 to 2007	SD of Sample Means 2005 to 2008
		Percentage Change of Averages (%) — 1992 to 2004							
BM	Primary and Secondary	52.80	51.63	63.38	117.45	-74.23	-73.45	-73.45	-67.40
	Control	-3.83	-3.83	0.46	32.23	8.33	-11.98	67.01	394.27
	Primary	4.62	4.62	26.88	110.36	-11.56	-7.14	56.24	205.10
	Secondary	68.26	67.11	72.87	110.90	-75.52	-74.16	-74.62	-71.44
Market Price	Primary and Secondary	64.08	77.08	74.06	42.47	53.70	66.70	86.59	85.34
	Control	62.03	72.11	70.85	41.81	71.91	96.51	93.75	77.27
	Primary	62.80	72.75	66.80	23.32	102.15	113.83	159.73	155.08
	Secondary	64.94	79.34	77.65	51.41	46.41	59.83	73.38	70.69
Total Equity	Primary and Secondary	113.43	123.60	146.50	159.11	126.25	133.24	153.00	167.74
	Control	28.06	29.81	26.68	5.31	23.54	25.39	24.87	14.77
	Primary	121.37	131.50	156.68	171.81	130.09	132.91	151.35	160.64
	Secondary	42.76	53.22	55.74	45.92	26.58	43.33	47.58	40.78
Total Assets	Primary and Secondary	176.34	189.66	259.39	355.56	176.99	189.87	251.76	331.20
	Control	23.34	24.96	22.92	4.23	18.46	21.71	22.86	14.02
	Primary	178.77	192.08	262.79	360.71	173.59	185.62	269.08	358.48
	Secondary	38.85	52.76	66.50	64.14	-27.37	-10.14	8.88	18.57
Total Liabilities	Primary and Secondary	180.33	193.73	264.95	367.36	181.19	194.20	257.01	340.16
	Control	0.74	1.67	5.69	1.33	-8.18	-3.00	11.32	11.17
	Primary	182.13	195.50	267.38	371.06	180.34	192.69	277.91	372.48
	Secondary	36.92	52.62	71.13	72.43	-17.74	-0.16	18.85	26.97
Net Income	Primary and Secondary	50.12	53.30	60.92	-162.86	50.17	45.23	48.95	183.82
	Control	-32.68	-28.92	-28.11	-28.92	-31.46	-30.27	-27.38	-27.44
	Primary	54.45	56.32	63.02	-168.08	44.48	28.23	30.80	255.36
	Secondary	-46.82	-14.23	13.88	-45.80	-18.40	-17.81	-10.36	-20.89
VaR	Primary and Secondary	106.11	121.39	69.44	-120.00	-65.49	-54.71	-42.48	13.24
	Control	133.85	131.03	102.82	-12.82	-51.57	-20.44	-10.06	-1.42
	Primary	93.64	103.18	23.70	-246.53	-81.87	-78.85	-51.65	34.48
	Secondary	112.15	130.39	87.85	-67.13	-57.69	-47.12	-39.36	10.00

Table notes:
Percentage changes calculated using equation (4.2).
Summary percentage change results are produced from the detailed results presented in Table R.4.

Analysis

Examination of Table 4.3 shows that the Primary and Secondary sample exhibits materially significant increases after 2005 for the variables presented. It is worth noting that significant increases are registered for the mean and standard deviation of sample means of the accounting total variables: total equity, total assets, total liabilities and net income, and the market price and Value-at-Risk variables. Closer examination of the market price variable reveals that it increased from 2005 to 2006 and then decreased in 2007 and 2008. Analysis of the standard deviation of market price sample means reveals that the level of *sample market price volatility* increased from 2005 to 2008. It is noted that the net income increases until 2007 and then exhibits a significant decrease in 2008. This table shows that these significant Primary and Secondary sample changes are mainly due to the Primary sample.

Examination of the book-to-market ratio reveals an interesting observation. It is only during 2008 that the Primary sample banks register a significant increase. The Secondary sample, however, reports increases from 2005 continuing to 2008. This finding suggests that for the banks the book-to-market measurement approach showed a delay in reacting to signs of financial distress risk.

Examination of the Control group results shows less materially significant changes and decreasing trends after 2005.

Generally, the Primary and Secondary sample changes exhibited in Table 4.3 provide strong evidence to suggest that after 2005 the accounting total variables increased while the market price variable decreased.

4.2.6 Null Hypotheses Test using Relative Delta Before to/and After 2005 – Examination of Material Significance

Table 4.4 presents percentage changes for the relative delta variable. Table 4.4 Panel A presents the summary samples and control group percentage change results. The results presented in Panel A are produced from the results in Table 4.13. Table 4.4 Panel B presents summary percentage change results at the bank level. The results presented in Panel B are produced from the results in Table 4.24.

Table 4.4 Summary Results: Relative Percentage Change of Averages for the Relative Delta Variable for Before To/And After 2005

The Table 4.4 Panel A columns present the relative percentage changes of averaged results for *before 2005 to after 2005* calculated using equation (4.1). The Table 4.4 Panel B columns represent the relative percentage changes of averaged results for *before 2005 and after 2005*, calculated using equation (4.2). The Table 4.4 Panel A columns and sub-panels present the following:

The Relative Delta column presents the following sub-panels for the samples and the control group respectively: the E-M sub-panel presents the total equity to market price relative delta percentage changes; the A-M sub-panel presents the total assets to market price relative delta percentage changes; the L-M sub-panel presents the total liabilities to market price relative delta percentage changes; and, the I-M sub-panel presents the net income to market price relative delta percentage changes.

The Sample and Control Group column presents the samples and the control group result sub-panels for the relative deltas presented in the Relative Delta column.

The Percentage Change of Averages (%) column presents the following columns: the 1994 to 2004 column represents the year range applied to calculate the lower bound average in equation (4.1); the 1994 to 2005, 1994 to 2006, 1994 to 2007 and 1994 to 2008 columns represent the year ranges applied to calculate the upper bound averages in equation (4.1).

The Table 4.4 Panel B columns present, for each of the banks in the Primary sample, the same information as the Table 4.4 Panel A columns, other than in Panel B the Sample and Control Group column is omitted and the 2005 to 2005, 2005 to 2006, 2005 to 2007 and 2005 to 2008 columns represent the year ranges applied to calculate the upper bound averages in equation (4.2).

Table 4.4 (Continued)

PANEL A
Percentage Changes for Before To After 2005

Relative Delta	Sample and Control Group	Percentage Change of Averages (%)			
		1994 to 2004			
		1994 to 2005	1994 to 2006	1994 to 2007	1994 to 2008
E-M	Primary and Secondary	-1.90	-11.88	-3.48	43.24
	Control	-17.86	-33.33	-46.94	-37.78
	Primary	-1.47	-8.58	7.39	70.90
	Secondary	-1.94	-14.27	-11.09	25.15
A-M	Primary and Secondary	70.45	28.67	159.09	567.27
	Control	-181.64	-263.94	-350.45	-301.67
	Primary	67.91	47.62	148.69	466.11
	Secondary	144.44	-90.60	367.06	1,786.30
L-M	Primary and Secondary	77.67	11.25	133.29	456.79
	Control	-50.90	-53.26	-86.88	-50.15
	Primary	73.84	52.25	157.84	490.94
	Secondary	92.93	-53.76	108.31	451.71
I-M	Primary and Secondary	243.42	278.56	295.99	272.06
	Control	-19.58	-0.59	8.58	169.34
	Primary	4.12	-4.85	-0.63	-30.12
	Secondary	182.37	211.01	223.12	212.25

Panel notes:
Percentage changes calculated using equation (4.1).
Summary percentage change results are produced from the detailed results presented in Table 4.13.

Table 4.4 (Continued)

PANEL B
Percentage Changes for the UK Banks for Before And After 2005

Relative Delta	Percentage Change of Averages (%)																			
	Primary Sample Banks Registered with the LSE's UK Banking Sector																			
	HSBC Holdings PLC				Barclays PLC				The Royal Bank of Scotland PLC				Lloyds Banking Group PLC				Standard Chartered PLC			
	1993 to 2004				1993 to 2004				1993 to 2004				1999 to 2004				1993 to 2004			
	2005 to 2005	2005 to 2006	2005 to 2007	2005 to 2008	2005 to 2005	2005 to 2006	2005 to 2007	2005 to 2008	2005 to 2005	2005 to 2006	2005 to 2007	2005 to 2008	2005 to 2005	2005 to 2006	2005 to 2007	2005 to 2008	2005 to 2005	2005 to 2006	2005 to 2007	2005 to 2008
E-M	2.6	-3.1	8.3	16.0	-122.2	-228.2	1,083.3	4,511.1	-5.8	-12.9	-4.9	27.8	-15.2	-30.7	-19.1	40.7	106.8	129.2	114.6	449.8
A-M	104.9	130.5	257.6	501.8	311.4	240.7	514.5	1,255.5	17.1	7.1	90.3	239.1	-8.9	-23.9	-19.1	56.0	80.8	65.4	64.0	362.9
L-M	135.4	168.9	323.5	624.8	322.5	249.3	528.4	1,285.9	18.6	8.2	92.4	243.6	-8.7	-23.6	-19.0	56.2	77.9	62.0	61.1	339.7
I-M	278.2	146.7	244.5	-170.6	-8.6	-7.2	-8.5	37.8	-0.4	-8.0	-2.8	-110.6	-17.1	-24.8	-22.5	-15.2	264.6	128.6	113.4	770.7

Panel notes:
Percentage changes calculated using equation (4.2).
Summary percentage change results are produced from the detailed results presented in Table 4.24.

Analysis

The Primary sample results in Table 4.4 Panel A and the bank level results in Panel B presents direct evidence for the levels of *material significance* that this study examines to strengthen or weaken the detailed null hypotheses specified in Section 3.3.2.

In Table 4.4 Panel A the results for the following tests are presented. Sub panel E-M tests the detailed null hypothesis in equation (3.23) by testing equation (E.1) that represents the difference between the change in total equity and the change in market price. Sub-panel A-M tests the detailed null hypothesis in equation (3.24) by testing equation (E.3) that represents the difference between the change in total assets and the change in market price. Sub-panel L-M tests the detailed null hypothesis in equation (3.25) by testing equation (E.5) that represents the difference between the change in total liabilities and the change in market price. Sub-panel I-M tests the detailed null hypothesis in equation (3.26) by testing equation (E.7) that represents the difference between the change in net income and the change in market price.

Table 4.4 Panel A shows that for the Primary sample and the Secondary sample the average accounting to market price relative deltas exhibit materially significant increases after 2005. With the exception of the Primary sample net income to market price relative delta (I-M), registering a marginal 4.12% increase in 2005 before exhibiting a decrease. Furthermore, it is noted that the Primary sample exhibits a materially significant increase in the total equity to market price relative delta (E-M) only in 2008. Examining the Control group results, besides the net income to market price relative delta that shows a significant increase in 2008, the relative deltas exhibit significant decreases after 2005.

Analysing Table 4.4 Panel B reveals that, in general, each bank exhibited increases and some decreases in relative delta levels to varying degrees after 2005.

In this study, the measure of the relative delta is also referred to as the *level of difference*, or more accurately, the measure of the *difference component* (see Sections 3.2.3, 3.2.5 and Appendix D). From the examination of the relative delta levels exhibited in Table 4.4 Panel A and Panel B, it is evident that the banks and the other

Primary and Secondary sample firms experienced materially significant *levels of difference* after 2005. Given the relationship between the *difference component*, relative delta and accounting quality detailed in Sections 2.9.2 and 2.9.3, this finding indicates that the banks experienced a materially significant deterioration in accounting quality after 2005.

4.2.7 Null Hypotheses Test using Regression Analysis for Relative Delta and Value-at-Risk Before to/and After 2005 – Examination of Statistical Significance

The results presented in Sections 4.2.2 to 4.2.6, other than Section 4.2.4, tests the null hypothesis specified in Section 3.3.1 by examining levels of *material significance*. Section 4.2.4 examines the null hypothesis by analysing levels of *statistical significance*. To further and more directly test the null hypothesis using *statistical significance*, the regression specified in Section 3.9.3, equation (3.40), that relates to the set of regressions specified in Appendix G, is applied. The set of regressions specified in equations (G.1), (G.2), (G.3) and (G.4) are aimed at testing the respective detailed null hypotheses specified in the relationships (3.23), (3.24), (3.25) and (3.26) (see Section 3.3.2). The technical specifications for these regressions are presented in Section 3.9.3 and Appendix O.13. In these respective sections, equation (3.40) specifies the time series regression and equation (O.28) specifies the cross-sectional regression.

The regression tests specified in Appendix G are applied to determine if the presence of statistical significance reported before 2005 remain after 2005. These regressions test for significance from the relationship between the *difference component* (see Section 3.2.5), quantified using the relative delta measure, and Value-at-Risk quantified using the Historical Value-at-Risk Actual measure.

Table 4.5 presents the regression results for the accounting total to market price relative delta variable and the Historical Value-at-Risk Actual variable. Table 4.5 Panel A presents the results for the samples and the control group. These results are reproduced from Table 4.14 to Table 4.17. Table 4.5 Panel B presents the results for the same regressions applied at the bank level. These results are reproduced from Table V.5 to Table V.9.

Table 4.5 Summary Results: Regression Results for the Relative Delta Variable and Historical Value-at-Risk Actual Variable for Before To/And After 2005

The Table 4.5 Panel A columns and sub-panels present the following:

The Regression column presents the following sub-panels for the samples and the control group: the E-M and V sub-panel presents the total equity to market price relative delta and the Historical Value-at-Risk Actual regression results; the A-M and V sub-panel presents the total assets to market price relative delta and the Historical Value-at-Risk Actual regression results; the L-M and V sub-panel presents the total liabilities to market price relative delta and the Historical Value-at-Risk Actual regression results; and, the I-M and V sub-panel presents the net income to market price relative delta and the Historical Value-at-Risk Actual regression results.

The Sample and Control Group column represents the samples and the control group result sub-panels for the regressions presented in the Regression column.

The Regression Statistics column presents the following columns: the *Slope* column presents the regression slope; the Intercept column presents the regression intercept; the R^2 column presents the Coefficient of Determination for the regression; the *1994 to* column represents the time series regression start year; and, the 2008, 2004, and 2007 columns represent the time series regression end year.

The Table 4.5 Panel B columns present, for each of the banks in the Primary sample, the same information as the Panel A columns, other than in Panel B the Sample and Control Group column is omitted and the *Slope*, *Intercept* and R^2 regression parameters in the Statistics column are presented in sub-panels.

Table 4.5 (Continued)

PANEL A
Results for Before To After 2005

Regression	Sample and Control Group	Slope 1994 to: 2008	Slope 1994 to: 2004	Slope 1994 to: 2007	Intercept 1994 to: 2008	Intercept 1994 to: 2004	Intercept 1994 to: 2007	R^2 1994 to: 2008	R^2 1994 to: 2004	R^2 1994 to: 2007
E-M and V	Primary and Secondary	-0.703*	-0.252	-0.32	-0.084	-0.141	-0.104	0.405	0.047	0.068
	Control	-1.208	-0.009	-0.91	-0.125*	-0.176*	-0.114*	0.166	8.2E-06	0.115
	Primary	-0.519**	-0.204	-0.224	-0.103	-0.138*	-0.115*	0.548	0.165	0.179
	Secondary	-0.59	-0.314	-0.372	-0.104	-0.142	-0.103	0.548	0.165	0.179
A-M and V	Primary and Secondary	-0.627*	-0.342	-0.266	-0.124*	-0.159*	-0.123*	0.396	0.095	0.056
	Control	-0.907	0.219	-0.698	-0.167**	-0.178**	-0.145**	0.106	0.01	0.079
	Primary	-0.575**	-0.375	-0.256	-0.11*	-0.151*	-0.124*	0.662	0.165	0.104
	Secondary	-0.577	-0.372	-0.356	-0.137*	-0.164*	-0.123*	0.662	0.165	0.104
L-M and V	Primary and Secondary	-0.536*	-0.298	-0.239	-0.126*	-0.158*	-0.122*	0.381	0.11	0.071
	Control	-0.275	0.042	-0.15	-0.148**	-0.179**	-0.133*	0.119	-	0.04
	Primary	-0.569**	-0.371	-0.248	-0.111*	-0.151*	-0.124*	0.659	0.161	0.099
	Secondary	-0.463	-0.319	-0.297	-0.135*	-0.162*	-0.121*	0.659	0.161	0.099
I-M and V	Primary and Secondary	0.076	0.119*	0.066*	-0.191**	-0.143*	-0.151**	0.245	0.41	0.341
	Control	-0.111	0.012	0.015	-0.151**	-0.176**	-0.133*	0.122	-	0.001
	Primary	0.237	0.009	-0.003	-0.233**	-0.163*	-0.142*	0.129	0.001	-
	Secondary	0.053	0.089*	0.05*	-0.174**	-0.136*	-0.145**	0.129	0.001	-

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels.
Results are re-produced from the detailed results presented in Table 4.14 to Table 4.17.

Table 4.5 (Continued)

PANEL B
Results for UK Banks for Before To After 2005

Statistics	Regression	Primary Sample Banks Registered with the LSE's UK Banking Sector														
		HSBC Holdings PLC			Barclays PLC			The Royal Bank of Scotland PLC			Lloyds Banking Group PLC			Standard Chartered PLC		
		1994 to 2008	2004	2007	1994 to 2008	2004	2007	1994 to 2008	2004	2007	1999 to 2008	2004	2007	1994 to 2008	2004	2007
Slope	E-M & V	-0.35	-0.355	-0.345	-0.594**	-0.396	-0.415*	-0.265*	-0.118*	-0.125*	-1.042**	-1.181	-1.174	-0.383	-0.145	-0.035
	A-M & V	-0.29	-0.491	-0.354	-0.545**	-0.494	-0.293	-0.694**	-0.365*	-0.345**	-0.675**	-0.213	-0.473	-0.348*	-0.086	-0.024
	L-M & V	-0.282	-0.5	-0.349	-0.541**	-0.487	-0.287	-0.691**	-0.363*	-0.343**	-0.665**	-0.2	-0.449	-0.343	-0.081	-0.019
	I-M & V	-0.011	-0.15	-0.074	-0.159	-0.023	-0.024	0.266**	0.033	0.021	-0.285	-0.216	-0.244*	-0.133	0.11	0.112
Intercept	E-M & V	-0.11	-0.137	-0.108	-0.118*	-0.133	-0.115*	-0.101	-0.035	-0.054	-0.118	-0.167	-0.104	-0.141*	-0.185*	-0.141*
	A-M & V	-0.124*	-0.166*	-0.126*	-0.108	-0.142	-0.112	-0.005	-0.044	-0.036	-0.162	-0.318	-0.186	-0.159*	-0.19*	-0.142*
	L-M & V	-0.125*	-0.167*	-0.127*	-0.108	-0.141	-0.112	-0.005	-0.044	-0.037	-0.163	-0.321	-0.19	-0.16*	-0.19*	-0.142*
	I-M & V	-0.152*	-0.171*	-0.142*	-0.154	-0.13	-0.125	-0.214*	-0.089	-0.105	-0.281	-0.292*	-0.199*	-0.17*	-0.189*	-0.145*
R^2	E-M & V	0.222	0.241	0.216	0.72	0.255	0.321	0.353	0.481	0.437	0.755	0.27	0.378	0.25	0.025	0.001
	A-M & V	0.154	0.286	0.162	0.633	0.227	0.151	0.797	0.383	0.495	0.648	0.033	0.125	0.265	0.01	0.001
	L-M & V	0.148	0.29	0.157	0.629	0.221	0.146	0.796	0.371	0.484	0.644	0.031	0.119	0.263	0.009	-
	I-M & V	0.001	0.046	0.015	0.16	0.009	0.008	0.673	0.02	0.007	0.261	0.589	0.486	0.064	0.049	0.045

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels.
Results are re-produced from the detailed results presented in Table V.5 to Table V.9.

Analysis

The Primary sample results in Table 4.5 Panel A and the bank level results in Panel B presents evidence for the levels of *statistical significance* that this study examines to strengthen or weaken the detailed null hypotheses specified in Section 3.3.2.

In Table 4.5, the results for the following tests are presented. Sub-panel E-M and V tests the detailed null hypothesis specified in equation (3.23) by testing equation (G.1) that represents the relationship between the total equity to market price relative delta and Value-at-Risk. Sub-panel A-M and V tests the detailed null hypothesis specified in equation (3.24) by testing equation (G.2) that represents the relationship between the total assets to market price relative delta and Value-at-Risk. Sub-panel L-M and V tests the detailed null hypothesis specified in equation (3.25) by testing equation (G.3) that represents the relationship between the total liabilities to market price relative delta and Value-at-Risk. Sub-panel I-M and V tests the detailed null hypothesis specified in equation (3.26) by testing equation (G.4) that represents the relationship between the net income to market price relative delta and Value-at-Risk.

Examination of the Table 4.5 Panel A results shows statistically significant relationships in 2008 between the Primary sample accounting to market price relative deltas: E-M, A-M and L-M, and the Historical Value-at-Risk Actual variable. The net income to market price relative delta, I-M, and the Historical Value-at-Risk Actual variable relationship is the only exception and does not indicate any significance for before or after 2005.

The results from Table 4.3 (and Table 4.19, V_M column) reveal that the Primary sample Value-at-Risk levels exhibited materially significant increases after 2005. Combining this result with the Table 4.5 Panel A results indicate that for the identified relative deltas the *difference component* increased with statistical significance after 2005. Examining the Table 4.5 Panel A Secondary sample results, only the net income to market price relative delta, I-M, exhibits a statistically significant relationship to Value-at-Risk in 2007 and before 2005. Contrary to the Primary sample and Secondary sample results, the Control group does not exhibit any statistical significance either before or after 2005.

To analyse the bank level results in Table 4.5 Panel B, by applying the sample level analysis approach, first it is necessary to examine the level of Value-at-Risk experienced by the banks. Examining the Primary sample Value-at-Risk levels in Table 4.3 (and Table 4.24 Panel A to Panel E, V_M column) shows that the banks experienced an increase in Value-at-Risk after 2005. Given this increase, the analysis of Table 4.5 Panel B shows that after 2005 60% of the banks (3 banks from 5) exhibit statistically significant increases in the total equity and market price relative delta *difference component*. These increases translate to 60% of banks experiencing financial distress risk. Further analysis reveals that 80% of the banks (4 banks from 5) exhibit statistically significant increases in the total assets and market price *difference component*. In addition, 60% of the banks (3 banks from 5) exhibit statistically significant increases in the total liabilities and market price *difference component*. This table also reveals that 20% (1 bank from 5) exhibits a statistically significant increase in the net income and market price *difference component*. Generally, Table 4.5 Panel B exhibits statistically significant increases in the magnitude of the *difference component* after 2005 than before.

The analysis of the results from Table 4.5 show that the banks experienced statistically significant levels of difference between the changes in accounting variables and the change in the market price variable after 2005. Given the relationship between the *difference component*, relative delta and accounting quality detailed in Sections 2.9.2 and 2.9.3, these results indicate that the banks experienced a *statistically* significant deterioration in accounting quality after 2005. The results from this section support the findings from Section 4.2.6 that also indicate a *materially* significant deterioration in accounting quality after 2005.

The following sections present analysis and detailed results for tests applied to examine this study's null hypothesis. The tests applied and the results presented and analysed are based on the accounting totals and market price change variables, and the Historical Value-at-Risk Actual variable.

4.3 Regressions for Change in Accounting Totals and Market Price Return

The analysis and detailed results for the change in accounting totals and the market price return time series regressions are presented in this section. Appendix U presents analysis and detailed results for these same variables using cross-sectional regressions. The regressions are in the time range 1994 to 2008. The accounting total variables applied in these regressions are total equity, total equity per share, total assets, total liabilities and net income.

4.3.1 Regressions for Change in Total Equity and Market Price Return

The regression analysis for the change in total equity and market price return is presented for the time range 1994 to 2008 in Table 4.6 (and Table U.1). In the regressions, the market price return variable is tested as the dependent variable, and the change in the total equity variable is tested as the independent variable.

Table 4.6 Time Series Regression Analysis for Change in Total Equity and Market Price Return

Time Series Regression

Table 4.6 Panel A to Panel D show the results for the time series regressions that test the change in total equity and market price return by applying the regression specified in equation (3.32). In this table, Panel A presents results for the Primary and Secondary sample; Panel B presents results for the Control group; Panel C presents results for the Primary sample; and, Panel D presents results for the Secondary sample.

Time Series Regression Table Description

The Table 4.6 columns represent the following:

The Total Period column represents the time series regression results for the year range 1994 to 2008, with a single year represented from 1st January to 31st December, with the 31st December selected as the variable record date. The Sub-Periods column represents the time series regression results for the year range 1994 to 2004, and for 1994 to 2007, with a single year represented from 1st January to 31st December, and a 31st December variable record date.

The Measure column represents the time series regression results for the total and sub-time periods and is represented by the following data panels:

The *Regression* panel presents the coefficients and related statistics for the regression specified in equation (3.32), and follows the model:

$$dM_{N,t} = a + b\ dE_{N,t} + e_{N,t}$$

Where: $dM_{N,t}$ is the log Market Price return ($M_{t-1,t}$) for N firms at time t, $dE_{N,t}$ is the change in Total Equity($E_{t-1,t}$) for N firms at time t, and $e_{N,t}$ is the regression error term. The *Lower* and *Upper* are the corresponding coefficient levels predicted at a 99% confidence level.

The *Correlation* panel presents the correlation statistics for the relationship between the dependent and independent variables. The *Descriptive Statistics* panel presents for the variables tested, the average sample means calculated using equation (M.6); the standard deviation, *SD*, of sample means for the time series using equation (M.7); and, the standard error of means, *SE*, for the time series. The *Observations* panel presents: *Firms (n)* (term *N* in the regression) that represents the average number of sample firms in the time series regression (for the Primary and Secondary sample, for the time period 1994 to 2004, the number of firms are rounded down); *Years (T)* represents the number of time series years; *Total (n x T)* represents the number of averaged pooled time series regression observations.

Table 4.6 (Continued)

PANEL A

Time Series Regression Analysis for the Primary and Secondary Sample Change in Total Equity ($E_{t-1,\,t}$) and Market Price Return ($M_{t-1,\,t}$)

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	1.192*	0.859*	0.888*
		t (b)	2.656	2.344	2.787
		p (b)	2.0E-02	4.4E-02	1.6E-02
		SE(b)	0.449	0.366	0.319
		Lower	-0.160	-0.332	-0.085
		Upper	2.544	2.050	1.861
	Intercept	*a*	-0.153	-0.062	-0.064
		t (a)	-1.708	-0.801	-0.976
		p (a)	1.1E-01	4.4E-01	3.5E-01
		SE(a)	0.089	0.078	0.066
		Lower	-0.422	-0.314	-0.264
		Upper	0.116	0.190	0.136
	Model	R^2	0.352	0.379	0.393
		s(e)	0.212	0.161	0.146
		df(e)	13	9	12
Correlation		*r*	0.593**	0.616*	0.627**
		p(r)	9.9E-03	2.2E-02	8.2E-03
Descriptive Statistics		*E*	0.157	0.165	0.165
		SD (E)	0.127	0.139	0.127
		SE(E)	0.033	0.042	0.034
		M	0.035	0.080	0.083
		SD (M)	0.254	0.194	0.180
		SE(M)	0.066	0.059	0.048
Observations		*Firms (n)*[a]	16	15	16
		Years (T)	15	11	14
		Total (n x T)	233	169	217

Panel notes:

**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.

[a]*Firms(n)* is the average number of firms surveyed for each year, rounded to the nearest whole number. In addition, *Firms(n)* reflects missing data items presented in Table Z.1. These same criteria applies to the presentation of the variable *Firms(n)* for all the time series results presented in this study.

The sample consists of a maximum of 233 observations from 16 firms in the LSE consisting of the 5 banks and 11 banking related firms that adopted the IFRS standards in 2005. Observations are taken on a yearly basis from 1994 to 2008.
See main table notes for the regression model applied.
Regression coefficients and related statistics are calculated using OLS regression.

Table 4.6 (Continued)

PANEL B

Time Series Regression Analysis for the Control Group Change in Total Equity ($E_{t-1,\,t}$) and Market Price Return ($M_{t-1,\,t}$)

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	0.973**	0.892**	0.918**
		t (b)	12.632	11.758	10.561
		p (b)	1.1E-08	9.2E-07	2.0E-07
		SE(b)	0.077	0.076	0.087
		Lower	0.741	0.645	0.652
		Upper	1.205	1.138	1.183
	Intercept	*a*	-0.025	-0.035	-0.016
		t (a)	-1.529	-2.214	-0.941
		p (a)	1.5E-01	5.4E-02	3.7E-01
		SE(a)	0.016	0.016	0.017
		Lower	-0.074	-0.086	-0.069
		Upper	0.024	0.016	0.037
	Model	R^2	0.925	0.939	0.903
		s(e)	0.062	0.049	0.060
		df(e)	13	9	12
Correlation		*r*	0.962**	0.969**	0.95**
		p(r)	5.6E-09	4.6E-07	9.9E-08
Descriptive Statistics		*E*	0.046	0.067	0.073
		SD (E)	0.214	0.206	0.192
		SE(E)	0.055	0.062	0.051
		M	0.020	0.025	0.051
		SD (M)	0.217	0.190	0.186
		SE(M)	0.056	0.057	0.050
Observations		*Firms (n)*	12	12	12
		Years (T)	15	11	14
		Total (n x T)	180	132	168

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.
The control consists of a maximum of 180 observations from 12 banking related firms in the LSE that did not adopt the IFRS standards in 2005. Observations are taken on a yearly basis from 1994 to 2008.
See main table notes for the regression model applied.
Regression coefficients and the related statistics are calculated using OLS regression.

Table 4.6 (Continued)

PANEL C

Time Series Regression Analysis for the Primary Sample Change in Total Equity ($E_{t-1,\,t}$) and Market Price Return ($M_{t-1,\,t}$)

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	0.169	0.123	0.123
		t (b)	0.522	0.705	0.743
		p (b)	6.1E-01	5.0E-01	4.7E-01
		SE(b)	0.324	0.175	0.166
		Lower	-0.808	-0.445	-0.384
		Upper	1.146	0.692	0.631
	Intercept	*a*	-0.032	0.070	0.053
		t (a)	-0.289	1.032	0.906
		p (a)	7.8E-01	3.3E-01	3.8E-01
		SE(a)	0.111	0.068	0.059
		Lower	-0.367	-0.151	-0.126
		Upper	0.303	0.291	0.232
	Model	R^2	0.021	0.052	0.044
		s(e)	0.351	0.189	0.180
		df(e)	13	9	12
Correlation		*r*	0.143	0.229	0.210
		p(r)	3.1E-01	2.5E-01	2.4E-01
Descriptive Statistics		*E*	0.199	0.211	0.202
		SD (E)	0.289	0.341	0.300
		SE(E)	0.075	0.103	0.080
		M	0.001	0.096	0.078
		SD (M)	0.342	0.184	0.177
		SE(M)	0.088	0.055	0.047
Observations		*Firms (n)*	5	5	5
		Years (T)	15	11	14
		Total (n x T)	75	55	70

Panel notes:
The sample consists of a maximum of 75 observations from the 5 banks in the LSE that adopted the IFRS standards in 2005. Observations are taken on a yearly basis from 1994 to 2008.
See main table notes for the regression model applied.
Regression coefficients and the related statistics are calculated using OLS regression.

Table 4.6 (Continued)

PANEL D

Time Series Regression Analysis for the Secondary Sample Change in Total Equity ($E_{t-1,\ t}$) and Market Price Return ($M_{t-1,\ t}$)

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	1.156*	0.860	0.899*
		t (b)	2.753	1.737	2.282
		p (b)	1.6E-02	1.2E-01	4.2E-02
		SE(b)	0.420	0.495	0.394
		Lower	-0.109	-0.749	-0.305
		Upper	2.421	2.469	2.102
	Intercept	*a*	-0.108	-0.049	-0.047
		t (a)	-1.421	-0.540	-0.634
		p (a)	1.8E-01	6.0E-01	5.4E-01
		SE(a)	0.076	0.091	0.074
		Lower	-0.336	-0.346	-0.272
		Upper	0.121	0.247	0.178
	Model	R^2	0.368	0.251	0.303
		s(e)	0.192	0.194	0.172
		df(e)	13	9	12
Correlation		*r*	0.607**	0.501	0.55*
		p(r)	8.2E-03	5.8E-02	2.1E-02
Descriptive Statistics		*E*	0.136	0.141	0.146
		SD (E)	0.123	0.124	0.121
		SE(E)	0.032	0.037	0.032
		M	0.050	0.072	0.085
		SD (M)	0.233	0.213	0.197
		SE(M)	0.060	0.064	0.053
Observations		*Firms (n)*	11	11	11
		Years (T)	15	11	14
		Total (n x T)	165	121	154

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.
The sample consists of a maximum of 165 observations from 11 banking related firms in the LSE that adopted the IFRS standards in 2005. Observations are taken on a yearly basis from 1994 to 2008.
See main table notes for the regression model applied.
Regression coefficients and the related statistics are calculated using OLS regression.

Analysis

The Table 4.6 time series regression slopes show that the change in the total equity variable exhibits statistically significant explanatory power to the market price return variable for the Primary and Secondary sample and the Control group for the three time series periods: 1994 to 2004, 1994 to 2007 and 1994 to 2008.

The Table 4.6 Panel A time series regression slope for the Primary and Secondary sample shows that before 2005, a 1% variation in the change in the total equity variable related to less than a 1% change in the market price return variable. After 2005, the slope shows that for a 1% variation in the change in total equity, the market price return changed more than 1%. However, the slope for the Control group, Panel B, for before and after 2005 shows that for a 1% variation in the change in total equity, the market price return variable changed less than 1%.

The substantial difference between the *coefficients of determination* measures, R^2, and the absence of significance for the *slope coefficient* measures, *b*, when examining the Primary sample results (Panel C) compared to the Primary and Secondary sample results (Panel A), suggest that the Primary sample banks experienced an effect that differed from the Secondary sample. Examining the standard deviations, the high level exhibited in Panel C from 1994 to 2004 for the change in the total equity variable, strongly suggests that it is this effect that has contributed to the Primary sample's absence of significance (see Panel C, *Descriptive Statistics* sub-panel *SD(E)*)[44].

The time series slopes for the Primary and Secondary sample suggests that the total equity change variable reacted to a lesser magnitude than the market price return variable after the 2005 accounting change compared to before. For the Control group the total equity change variable reacted with a similar magnitude to the market price return variable before and after 2005.

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[44] For further information, at the yearly level, for the change in the total equity variable that exhibits the suggested increase in standard deviation, see the year 1993 and 2000 standard deviation panel records in APPENDIX S, Table S.3, column *dE*, and also the year 2000 record in APPENDIX U, Table U.1, column *SD*.

4.3.2 Regressions for Change in Total Equity per Share and Market Price Return

The regression analysis for the change in total equity per share and market price return is presented for the time range 1994 to 2008 in Table 4.7 (and Table U.2). In the regressions, the market price return variable is tested as the dependent variable, and the change in the total equity per share variable is tested as the independent variable.

Table 4.7 Time Series Regression Analysis for Change in Total Equity per Share and Market Price Return

Time Series Regression

Table 4.7 Panel A to Panel D show the results for the time series regressions that test the change in total equity per share and market price return by applying the regression specified in equation (3.32). In this table, Panel A presents results for the Primary and Secondary sample; Panel B presents results for the Control group; Panel C presents results for the Primary sample; and, Panel D presents results for the Secondary sample.

Time Series Regression Table Description

The Table 4.7 columns represent the following:

The Total Period column represents the time series regression results for the year range 1994 to 2008, with a single year represented from 1st January to 31st December, with the 31st December selected as the variable record date. The Sub-Periods column represents the time series regression results for the year range 1994 to 2004, and for 1994 to 2007, with a single year represented from 1st January to 31st December, and a 31st December variable record date.

The Measure column represents the time series regression results for the total and sub-time periods and is represented by the following data panels:

The *Regression* panel presents the coefficients and related statistics for the regression specified in equation (3.32), and follows the model:

$$dM_{N,t} = a + b\ d(E/S)_{N,t} + e_{N,t}$$

Where: $dM_{N,t}$ is the log Market Price return $(M_{t-1,t})$ for N firms at time t, $d(E/S)_{N,t}$ is the change in Total Equity per Share $(E_{t-1,t}/S_{t-1,t})$ for N firms at time t, and $e_{N,t}$ is the regression error term. The *Lower* and *Upper* are the corresponding coefficient levels predicted at a 99% confidence level.

The *Correlation* panel presents the correlation statistics for the relationship between the dependent and independent variables. The *Descriptive Statistics* panel presents for the variables tested, the average sample means calculated using equation (M.6); the standard deviation, *SD*, of sample means for the time series using equation (M.7); and, the standard error of means, *SE*, for the time series. The *Observations* panel presents: *Firms (n)* (term *N* in the regression) that represents the average number of sample firms in the time series regression (for the Primary and Secondary sample, for the time period 1994 to 2004, the number of firms are rounded down); *Years (T)* represents the number of time series years; *Total (n* x *T)* represents the number of averaged pooled time series regression observations.

Table 4.7 (Continued)

PANEL A

Time Series Regression Analysis for the Primary and Secondary Sample Change in Total Equity per Share ($E_{t-1,t}/S_{t-1,t}$) and Market Price Return ($M_{t-1,t}$)

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	2.254**	1.967**	1.959**
		t (b)	7.611	4.118	4.575
		p (b)	3.8E-06	2.6E-03	6.4E-04
		SE(b)	0.296	0.478	0.428
		Lower	1.362	0.415	0.651
		Upper	3.146	3.520	3.267
	Intercept	*a*	-0.195**	-0.148	-0.154*
		t (a)	-4.645	-2.240	-2.570
		p (a)	4.6E-04	5.2E-02	2.5E-02
		SE(a)	0.042	0.066	0.060
		Lower	-0.321	-0.364	-0.337
		Upper	-0.069	0.067	0.029
	Model	R^2	0.817	0.653	0.636
		s(e)	0.113	0.121	0.113
		df(e)	13	9	12
Correlation		*r*	0.904**	0.808**	0.797**
		p(r)	1.9E-06	1.3E-03	3.2E-04
Descriptive Statistics		*E/S*	0.102	0.116	0.121
		SD (E/S)	0.102	0.080	0.073
		SE(E/S)	0.026	0.024	0.020
		M	0.035	0.080	0.083
		SD (M)	0.254	0.194	0.180
		SE(M)	0.066	0.059	0.048
Observations		*Firms (n)*	16	15	16
		Years (T)	15	11	14
		Total (n x T)	233	169	217

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.
The sample consists of a maximum of 233 observations from 16 firms in the LSE consisting of the 5 banks and 11 banking related firms that adopted the IFRS standards in 2005. Observations are taken on a yearly basis from 1994 to 2008.
See main table notes for the regression model applied.
Regression coefficients and related statistics are calculated using OLS regression.

Table 4.7 (Continued)

PANEL B

Time Series Regression Analysis for the Control Group Change in Total Equity per Share ($E_{t-1,\,t}/S_{t-1,\,t}$) and Market Price Return ($M_{t-1,\,t}$)

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	0.972**	0.89**	0.926**
		t (b)	20.977	17.903	18.973
		p (b)	2.1E-11	2.4E-08	2.6E-10
		SE(b)	0.046	0.050	0.049
		Lower	0.833	0.729	0.777
		Upper	1.112	1.052	1.075
	Intercept	*a*	-0.039**	-0.036**	-0.031*
		t (a)	-3.840	-3.398	-3.044
		p (a)	2.0E-03	7.9E-03	1.0E-02
		SE(a)	0.010	0.011	0.010
		Lower	-0.070	-0.070	-0.062
		Upper	-0.008	-0.002	1.1E-04
	Model	R^2	0.971	0.973	0.968
		s(e)	0.038	0.033	0.035
		df(e)	13	9	12
Correlation		*r*	0.986**	0.986**	0.984**
		p(r)	1.0E-11	1.2E-08	1.3E-10
Descriptive Statistics		*E/S*	0.061	0.068	0.089
		SD (E/S)	0.220	0.210	0.197
		SE(E/S)	0.057	0.063	0.053
		M	0.020	0.025	0.051
		SD (M)	0.217	0.190	0.186
		SE(M)	0.056	0.057	0.050
Observations		*Firms (n)*	12	12	12
		Years (T)	15	11	14
		Total (n x T)	180	132	168

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.
The control consists of a maximum of 180 observations from 12 banking related firms in the LSE that did not adopt the IFRS standards in 2005. Observations are taken on a yearly basis from 1994 to 2008.
See main table notes for the regression model applied.
Regression coefficients and the related statistics are calculated using OLS regression.

Table 4.7 (Continued)

PANEL C

Time Series Regression Analysis for the Primary Sample Change in Total Equity per Share ($E_{t-1,\,t}/S_{t-1,\,t}$) and Market Price Return ($M_{t-1,\,t}$)

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	1.945**	0.885	0.768
		t (b)	3.130	1.941	1.676
		p (b)	8.0E-03	8.4E-02	1.2E-01
		SE(b)	0.622	0.456	0.458
		Lower	0.073	-0.597	-0.632
		Upper	3.818	2.366	2.168
	Intercept	*a*	-0.203	-0.007	-0.015
		t (a)	-2.134	-0.094	-0.214
		p (a)	5.2E-02	9.3E-01	8.3E-01
		SE(a)	0.095	0.072	0.071
		Lower	-0.490	-0.242	-0.232
		Upper	0.084	0.228	0.202
	Model	R^2	0.430	0.295	0.190
		s(e)	0.268	0.163	0.166
		df(e)	13	9	12
Correlation		*r*	0.656**	0.543*	0.435
		p(r)	4.0E-03	4.2E-02	6.0E-02
Descriptive Statistics		*E/S*	0.105	0.116	0.121
		SD (E/S)	0.115	0.113	0.100
		SE(E/S)	0.030	0.034	0.027
		M	0.001	0.096	0.078
		SD (M)	0.342	0.184	0.177
		SE(M)	0.088	0.055	0.047
Observations		*Firms (n)*	5	5	5
		Years (T)	15	11	14
		Total (n x T)	75	55	70

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.
The sample consists of a maximum of 75 observations from the 5 banks in the LSE that adopted the IFRS standards in 2005. Observations are taken on a yearly basis from 1994 to 2008.
See main table notes for the regression model applied.
Regression coefficients and the related statistics are calculated using OLS regression.

Table 4.7 (Continued)

PANEL D

Time Series Regression Analysis for the Secondary Sample Change in Total Equity per Share ($E_{t-1,\,t}/S_{t-1,\,t}$) and Market Price Return ($M_{t-1,\,t}$)

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	1.79**	1.85*	1.852**
		t (b)	5.289	2.927	3.631
		p (b)	1.5E-04	1.7E-02	3.4E-03
		SE(b)	0.338	0.632	0.510
		Lower	0.771	-0.204	0.294
		Upper	2.810	3.905	3.410
	Intercept	*a*	-0.128*	-0.140	-0.137
		t (a)	-2.633	-1.604	-1.905
		p (a)	2.1E-02	1.4E-01	8.1E-02
		SE(a)	0.049	0.087	0.072
		Lower	-0.275	-0.423	-0.356
		Upper	0.018	0.143	0.083
	Model	R^2	0.683	0.488	0.524
		s(e)	0.136	0.161	0.142
		df(e)	13	9	12
Correlation		*r*	0.826**	0.698**	0.724**
		p(r)	7.3E-05	8.4E-03	1.7E-03
Descriptive Statistics		*E/S*	0.100	0.115	0.120
		SD (E/S)	0.108	0.080	0.077
		SE(E/S)	0.028	0.024	0.021
		M	0.050	0.072	0.085
		SD (M)	0.233	0.213	0.197
		SE(M)	0.060	0.064	0.053
Observations		*Firms (n)*	11	11	11
		Years (T)	15	11	14
		Total (n x T)	165	121	154

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.
The sample consists of a maximum of 165 observations from 11 banking related firms in the LSE that adopted the IFRS standards in 2005. Observations are taken on a yearly basis from 1994 to 2008.
See main table notes for the regression model applied.
Regression coefficients and the related statistics are calculated using OLS regression.

Analysis

Table 4.7 exhibits similar results to Table 4.6.

The Table 4.7 time series regression slopes show that the change in the total equity per share variable exhibits statistically significant explanatory power to the market price return variable for the Primary and Secondary sample and the Control group for the three time series periods: 1994 to 2004, 1994 to 2007 and 1994 to 2008.

The Table 4.7 Panel A time series regression slope for the Primary and Secondary sample shows that before 2005, a 1% variation in the change in total equity per share variable related to less than a 2% change in the market price return variable. After 2005, the slope shows that for a 1% variation in the change in total equity per share, the market price return variable changed more than 2%. However, the slope for the Control group, Panel B, for before and after 2005 shows that for a 1% variation in the change in total equity per share, the market price return variable changed less than 1%.

The time series slopes suggest that for the Primary and Secondary sample the total equity per share change variable reacted to a lesser magnitude than the market price return variable after the 2005 accounting change compared to before. For the Control group the total equity per share change variable reacted with a similar magnitude to the market price return variable before and after 2005.

4.3.3 Regressions for Change in Total Assets and Market Price Return

The regression analysis for the change in total assets and market price return is presented for the time range 1994 to 2008 in Table 4.8 (and Table U.3). In the regressions, the market price return variable is tested as the dependent variable, and the change in the total assets variable is tested as the independent variable.

Table 4.8 Time Series Regression Analysis for Change in Total Assets and Market Price Return

Time Series Regression

Table 4.8 Panel A to Panel D show the results for the time series regressions that test the change in total assets and market price return by applying the regression specified in equation (3.32). In this table, Panel A presents results for the Primary and Secondary sample; Panel B presents results for the Control group; Panel C presents results for the Primary sample; and, Panel D presents results for the Secondary sample.

Time Series Regression Table Description

The Table 4.8 columns represent the following:

The Total Period column represents the time series regression results for the year range 1994 to 2008, with a single year represented from 1st January to 31st December, with the 31st December selected as the variable record date. The Sub-Periods column represents the time series regression results for the year range 1994 to 2004, and for 1994 to 2007, with a single year represented from 1st January to 31st December, and a 31st December variable record date.

The Measure column represents the time series regression results for the total and sub-time periods and is represented by the following data panels:

The *Regression* panel presents the coefficients and related statistics for the regression specified in equation (3.32), and follows the model:

$$dM_{N,t} = a + b\ dA_{N,t} + e_{N,t}$$

Where: $dM_{N,t}$ is the log Market Price return ($M_{t-1,t}$) for N firms at time t, $dA_{N,t}$ is the log change in Total Assets ($A_{t-1,t}$) for N firms at time t, and $e_{N,t}$ is the regression error term. The *Lower* and *Upper* are the corresponding coefficient levels predicted at a 99% confidence level.

The *Correlation* panel presents the correlation statistics for the relationship between the dependent and independent variables. The *Descriptive Statistics* panel presents for the variables tested, the average sample means calculated using equation (M.6); the standard deviation, *SD*, of sample means for the time series using equation (M.7); and, the standard error of means, *SE*, for the time series. The *Observations* panel presents: *Firms (n)* (term *N* in the regression) that represents the average number of sample firms in the time series regression (for the Primary and Secondary sample, for the time period 1994 to 2004, the number of firms are rounded down); *Years (T)* represents the number of time series years; *Total (n x T)* represents the number of averaged pooled time series regression observations.

Table 4.8 (Continued)

PANEL A

Time Series Regression Analysis for the Primary and Secondary Sample Change in Total Assets ($A_{t-1,\,t}$) and Market Price Return ($M_{t-1,\,t}$)

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	1.565	2.151*	1.220
		t (b)	1.918	2.643	2.160
		p (b)	7.7E-02	2.7E-02	5.2E-02
		SE(b)	0.816	0.814	0.565
		Lower	-0.893	-0.494	-0.505
		Upper	4.024	4.797	2.945
	Intercept	*a*	-0.135	-0.115	-0.053
		t (a)	-1.260	-1.324	-0.699
		p (a)	2.3E-01	2.2E-01	5.0E-01
		SE(a)	0.107	0.087	0.076
		Lower	-0.456	-0.398	-0.285
		Upper	0.187	0.168	0.179
	Model	R^2	0.221	0.437	0.280
		s(e)	0.233	0.154	0.159
		df(e)	13	9	12
Correlation		*r*	0.47*	0.661*	0.529*
		p(r)	3.9E-02	1.3E-02	2.6E-02
Descriptive Statistics		*A*	0.108	0.091	0.111
		SD (A)	0.076	0.060	0.078
		SE(A)	0.020	0.018	0.021
		M	0.035	0.080	0.083
		SD (M)	0.254	0.194	0.180
		SE(M)	0.066	0.059	0.048
Observations		*Firms (n)*	16	15	16
		Years (T)	15	11	14
		Total (n x T)	233	169	217

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.
The sample consists of a maximum of 233 observations from 16 firms in the LSE consisting of the 5 banks and 11 banking related firms that adopted the IFRS standards in 2005. Observations are taken on a yearly basis from 1994 to 2008.
See main table notes for the regression model applied.
Regression coefficients and related statistics are calculated using OLS regression.

Table 4.8 (Continued)

PANEL B

Time Series Regression Analysis for the Control Group Change in Total Assets ($A_{t-1,\,t}$) and Market Price Return ($M_{t-1,\,t}$)

Measure			Total Period 1994-2008	Sub-Periods 1994-2004	Sub-Periods 1994-2007
Regression	*Slope*	*b*	1.128**	1.118**	1.145**
		t (b)	12.765	10.295	9.976
		p (b)	9.9E-09	2.8E-06	3.7E-07
		SE(b)	0.088	0.109	0.115
		Lower	0.862	0.765	0.795
		Upper	1.394	1.471	1.496
	Intercept	*a*	0.011	-0.009	0.009
		t (a)	0.681	-0.545	0.530
		p (a)	5.1E-01	6.0E-01	6.1E-01
		SE(a)	0.016	0.017	0.017
		Lower	-0.037	-0.065	-0.044
		Upper	0.058	0.046	0.063
	Model	R^2	0.926	0.922	0.892
		s(e)	0.061	0.056	0.063
		df(e)	13	9	12
Correlation		*r*	0.962**	0.96**	0.945**
		p(r)	5.0E-09	1.4E-06	1.8E-07
Descriptive Statistics		*A*	0.008	0.030	0.037
		SD (A)	0.185	0.163	0.153
		SE(A)	0.048	0.049	0.041
		M	0.020	0.025	0.051
		SD (M)	0.217	0.190	0.186
		SE(M)	0.056	0.057	0.050
Observations		*Firms (n)*	12	12	12
		Years (T)	15	11	14
		Total (n x T)	180	132	168

Panel notes:

**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.

The control consists of a maximum of 180 observations from 12 banking related firms in the LSE that did not adopt the IFRS standards in 2005. Observations are taken on a yearly basis from 1994 to 2008.

See main table notes for the regression model applied.

Regression coefficients and the related statistics are calculated using OLS regression.

Table 4.8 (Continued)

PANEL C

Time Series Regression Analysis for the Primary Sample Change in Total Assets ($A_{t-1,\,t}$) and Market Price Return ($M_{t-1,\,t}$)

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	-0.907	0.426	0.094
		t (b)	-1.405	0.852	0.235
		p (b)	1.8E-01	4.2E-01	8.2E-01
		SE(b)	0.645	0.500	0.401
		Lower	-2.850	-1.198	-1.132
		Upper	1.037	2.049	1.320
	Intercept	*a*	0.153	0.043	0.064
		t (a)	1.111	0.509	0.821
		p (a)	2.9E-01	6.2E-01	4.3E-01
		SE(a)	0.137	0.084	0.078
		Lower	-0.261	-0.231	-0.174
		Upper	0.566	0.316	0.302
	Model	R^2	0.132	0.075	0.005
		s(e)	0.331	0.187	0.183
		df(e)	13	9	12
Correlation		*r*	-0.363	0.273	0.068
		p(r)	9.2E-02	2.1E-01	4.1E-01
Descriptive Statistics		*A*	0.167	0.125	0.151
		SD (A)	0.137	0.118	0.127
		SE(A)	0.035	0.036	0.034
		M	0.001	0.096	0.078
		SD (M)	0.342	0.184	0.177
		SE(M)	0.088	0.055	0.047
Observations		*Firms (n)*	5	5	5
		Years (T)	15	11	14
		Total (n x T)	75	55	70

Panel notes:
The sample consists of a maximum of 75 observations from the 5 banks in the LSE that adopted the IFRS standards in 2005. Observations are taken on a yearly basis from 1994 to 2008.
See main table notes for the regression model applied.
Regression coefficients and the related statistics are calculated using OLS regression.

Table 4.8 (Continued)

PANEL D

Time Series Regression Analysis for the Secondary Sample Change in Total Assets ($A_{t-1,\,t}$) and Market Price Return ($M_{t-1,\,t}$)

Measure			Total Period 1994-2008	Sub-Periods 1994-2004	Sub-Periods 1994-2007
Regression	*Slope*	*b*	1.745**	1.707	1.342*
		t (b)	3.376	1.921	2.346
		p (b)	5.0E-03	8.7E-02	3.7E-02
		SE(b)	0.517	0.889	0.572
		Lower	0.188	-1.181	-0.405
		Upper	3.303	4.594	3.090
	Intercept	*a*	-0.091	-0.054	-0.039
		t (a)	-1.473	-0.620	-0.563
		p (a)	1.6E-01	5.5E-01	5.8E-01
		SE(a)	0.062	0.087	0.070
		Lower	-0.277	-0.337	-0.252
		Upper	0.095	0.229	0.174
	Model	R^2	0.467	0.291	0.314
		s(e)	0.176	0.189	0.170
		df(e)	13	9	12
Correlation		*r*	0.683**	0.539*	0.561*
		p(r)	2.5E-03	4.3E-02	1.8E-02
Descriptive Statistics		*A*	0.081	0.074	0.092
		SD (A)	0.091	0.067	0.082
		SE(A)	0.024	0.020	0.022
		M	0.050	0.072	0.085
		SD (M)	0.233	0.213	0.197
		SE(M)	0.060	0.064	0.053
Observations		*Firms (n)*	11	11	11
		Years (T)	15	11	14
		Total (n x T)	165	121	154

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.
The sample consists of a maximum of 165 observations from 11 banking related firms in the LSE that adopted the IFRS standards in 2005. Observations are taken on a yearly basis from 1994 to 2008.
See main table notes for the regression model applied.
Regression coefficients and the related statistics are calculated using OLS regression.

Analysis

The Table 4.8 time series regression slopes show that the change in the total assets variable exhibits statistically significant explanatory power to the market price return variable for the Primary and Secondary sample for the 1994 to 2004 time period. The Control group exhibits statistical significance for the three time series periods: 1994 to 2004, 1994 to 2007 and 1994 to 2008 for the same change variables.

The Table 4.8 Panel A time series regression slope for the Primary and Secondary sample shows that before 2005, a 1% variation in the change in the total assets variable related to more than a 2% change in the market price return variable. After 2005, the slope does not show significance. However, the slope for the Control group, Panel B, for before and after 2005 shows that for a 1% variation in the change in the total assets variable the market price return variable changes more than 1%.

The time series slopes suggest that for the Primary and Secondary sample, the total assets change variable reacted significantly to the market price return variable before the 2005 accounting change and does not show a statistically significant reaction after the change. For the Control group the total assets change variable reacted significantly with a similar magnitude to the market price return variable before and after 2005.

4.3.4 Regressions for Change in Total Liabilities and Market Price Return

The regression analysis for the change in total liabilities and market price return is presented for the time range 1994 to 2008 in Table 4.9 (and Table U.4). In the regressions, the market price return variable is tested as the dependent variable, and the change in the total liabilities variable is tested as the independent variable.

Table 4.9 Time Series Regression Analysis for Change in Total Liabilities and Market Price Return

Time Series Regression

Table 4.9 Panel A to Panel D show the results for the time series regressions that test the change in total liabilities and market price return by applying the regression specified in equation (3.32). In this table, Panel A presents results for the Primary and Secondary sample; Panel B presents results for the Control group; Panel C presents results for the Primary sample; and, Panel D presents results for the Secondary sample.

Time Series Regression Table Description

The Table 4.9 columns represent the following:

The Total Period column represents the time series regression results for the year range 1994 to 2008, with a single year represented from 1st January to 31st December, with the 31st December selected as the variable record date. The Sub-Periods column represents the time series regression results for the year range 1994 to 2004, and for 1994 to 2007, with a single year represented from 1st January to 31st December, and a 31st December variable record date.

The Measure column represents the time series regression results for the total and sub-time periods and is represented by the following data panels:

The *Regression* panel presents the coefficients and related statistics for the regression specified in equation (3.32), and follows the model:

$$dM_{N,t} = a + b\ dL_{N,t} + e_{N,t}$$

Where: $dM_{N,t}$ is the log Market Price return $(M_{t-1,t})$ for N firms at time t, $dL_{N,t}$ is the log change in Total Liabilities $(L_{t-1,t})$ for N firms at time t, and $e_{N,t}$ is the regression error term. The *Lower* and *Upper* are the corresponding coefficient levels predicted at a 99% confidence level.

The *Correlation* panel presents the correlation statistics for the relationship between the dependent and independent variables. The *Descriptive Statistics* panel presents for the variables tested, the average sample means calculated using equation (M.6); the standard deviation, *SD*, of sample means for the time series using equation (M.7); and, the standard error of means, *SE*, for the time series. The *Observations* panel presents: *Firms (n)* (term *N* in the regression) that represents the average number of sample firms in the time series regression (for the Primary and Secondary sample, for the time period 1994 to 2004, the number of firms are rounded down); *Years (T)* represents the number of time series years; *Total (n* x *T)* represents the number of averaged pooled time series regression observations.

Table 4.9 (Continued)

PANEL A

Time Series Regression Analysis for the Primary and Secondary Sample Change in Total Liabilities ($L_{t-1, t}$) and Market Price Return ($M_{t-1, t}$)

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	0.252	0.302	0.228
		t (b)	0.326	0.310	0.416
		p (b)	7.5E-01	7.6E-01	6.8E-01
		SE(b)	0.772	0.975	0.548
		Lower	-2.074	-2.868	-1.445
		Upper	2.578	3.472	1.901
	Intercept	*a*	0.005	0.051	0.056
		t (a)	0.047	0.462	0.690
		p (a)	9.6E-01	6.6E-01	5.0E-01
		SE(a)	0.113	0.111	0.081
		Lower	-0.334	-0.308	-0.192
		Upper	0.345	0.410	0.304
	Model	R^2	0.008	0.011	0.014
		s(e)	0.263	0.204	0.186
		df(e)	13	9	12
Correlation		*r*	0.090	0.103	0.119
		p(r)	3.7E-01	3.8E-01	3.4E-01
Descriptive Statistics		*L*	0.117	0.094	0.117
		SD (L)	0.091	0.066	0.094
		SE(L)	0.023	0.020	0.025
		M	0.035	0.080	0.083
		SD (M)	0.254	0.194	0.180
		SE(M)	0.066	0.059	0.048
Observations		*Firms (n)*	16	15	16
		Years (T)	15	11	14
		Total (n x T)	233	169	217

Panel notes:
The sample consists of a maximum of 233 observations from 16 firms in the LSE consisting of the 5 banks and 11 banking related firms that adopted the IFRS standards in 2005. Observations are taken on a yearly basis from 1994 to 2008.
See main table notes for the regression model applied.
Regression coefficients and related statistics are calculated using OLS regression.

Table 4.9 (Continued)

PANEL B

Time Series Regression Analysis for the Control Group Change in Total Liabilities ($L_{t-1, t}$) and Market Price Return ($M_{t-1, t}$)

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	0.451	0.431	0.295
		t (b)	1.289	1.157	0.929
		p (b)	2.2E-01	2.8E-01	3.7E-01
		SE(b)	0.350	0.373	0.317
		Lower	-0.603	-0.780	-0.675
		Upper	1.506	1.643	1.264
	Intercept	*a*	-0.003	-0.012	0.034
		t (a)	-0.048	-0.185	0.632
		p (a)	9.6E-01	8.6E-01	5.4E-01
		SE(a)	0.057	0.064	0.053
		Lower	-0.175	-0.221	-0.129
		Upper	0.170	0.198	0.197
	Model	R^2	0.113	0.130	0.067
		s(e)	0.212	0.187	0.187
		df(e)	13	9	12
Correlation		*r*	0.337	0.360	0.259
		p(r)	1.1E-01	1.4E-01	1.9E-01
Descriptive Statistics		*L*	0.049	0.084	0.059
		SD (L)	0.162	0.158	0.163
		SE(L)	0.042	0.048	0.044
		M	0.020	0.025	0.051
		SD (M)	0.217	0.190	0.186
		SE(M)	0.056	0.057	0.050
Observations		*Firms (n)*	12	12	12
		Years (T)	15	11	14
		Total (n x T)	180	132	168

Panel notes:
The control consists of a maximum of 180 observations from 12 banking related firms in the LSE that did not adopt the IFRS standards in 2005. Observations are taken on a yearly basis from 1994 to 2008.
See main table notes for the regression model applied.
Regression coefficients and the related statistics are calculated using OLS regression.

Table 4.9 (Continued)

PANEL C

Time Series Regression Analysis for the Primary Sample Change in Total Liabilities ($L_{t-1,\,t}$) and Market Price Return ($M_{t-1,\,t}$)

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	-0.968	0.421	0.072
		t (b)	-1.528	0.814	0.178
		p (b)	1.5E-01	4.4E-01	8.6E-01
		SE(b)	0.634	0.517	0.405
		Lower	-2.877	-1.259	-1.164
		Upper	0.940	2.101	1.309
	Intercept	*a*	0.164	0.044	0.067
		t (a)	1.207	0.513	0.859
		p (a)	2.5E-01	6.2E-01	4.1E-01
		SE(a)	0.136	0.086	0.078
		Lower	-0.245	-0.234	-0.172
		Upper	0.572	0.322	0.306
	Model	R^2	0.152	0.069	0.003
		s(e)	0.327	0.187	0.184
		df(e)	13	9	12
Correlation		*r*	-0.390	0.262	0.051
		p(r)	7.5E-02	2.2E-01	4.3E-01
Descriptive Statistics		*L*	0.167	0.124	0.150
		SD (L)	0.138	0.114	0.126
		SE(L)	0.036	0.035	0.034
		M	0.001	0.096	0.078
		SD (M)	0.342	0.184	0.177
		SE(M)	0.088	0.055	0.047
Observations		*Firms (n)*	5	5	5
		Years (T)	15	11	14
		Total (n x T)	75	55	70

Panel notes:
The sample consists of a maximum of 75 observations from the 5 banks in the LSE that adopted the IFRS standards in 2005. Observations are taken on a yearly basis from 1994 to 2008.
See main table notes for the regression model applied.
Regression coefficients and the related statistics are calculated using OLS regression.

Table 4.9 (Continued)

PANEL D

Time Series Regression Analysis for the Secondary Sample Change in Total Liabilities ($L_{t-1,\,t}$) and Market Price Return ($M_{t-1,\,t}$)

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	0.610	-0.149	0.213
		t (b)	0.982	-0.154	0.373
		p (b)	3.4E-01	8.8E-01	7.2E-01
		SE(b)	0.621	0.969	0.571
		Lower	-1.260	-3.299	-1.531
		Upper	2.480	3.000	1.957
	Intercept	*a*	-0.007	0.084	0.063
		t (a)	-0.082	0.818	0.796
		p (a)	9.4E-01	4.3E-01	4.4E-01
		SE(a)	0.084	0.103	0.079
		Lower	-0.258	-0.250	-0.179
		Upper	0.245	0.418	0.306
	Model	R^2	0.069	0.003	0.011
		s(e)	0.234	0.224	0.204
		df(e)	13	9	12
Correlation		*r*	0.263	-0.051	0.107
		p(r)	1.7E-01	4.4E-01	3.6E-01
Descriptive Statistics		*L*	0.093	0.080	0.101
		SD (L)	0.101	0.073	0.099
		SE(L)	0.026	0.022	0.027
		M	0.050	0.072	0.085
		SD (M)	0.233	0.213	0.197
		SE(M)	0.060	0.064	0.053
Observations		*Firms (n)*	11	11	11
		Years (T)	15	11	14
		Total (n x T)	165	121	154

Panel notes:
The sample consists of a maximum of 165 observations from 11 banking related firms in the LSE that adopted the IFRS standards in 2005. Observations are taken on a yearly basis from 1994 to 2008.
See main table notes for the regression model applied.
Regression coefficients and the related statistics are calculated using OLS regression.

Analysis

The Table 4.9 time series regression slopes show that for the samples and the control group the change in the total liabilities variable does not exhibit statistically significant explanatory power to the market price return variable. These slopes suggest that the total liabilities and market price change variables of the samples and the control group does not show statistically significant reactions after the 2005 accounting change.

4.3.5 Regressions for Change in Net Income and Market Price Return

The regression analysis for the change in net income and market price return is presented for the time range 1994 to 2008 in Table 4.10 (and Table U.5). In the regressions, the market price return variable is tested as the dependent variable, and the change in the net income variable is tested as the independent variable.

Table 4.10 Time Series Regression Analysis for Change in Net Income and Market Price Return

Time Series Regression

Table 4.10 Panel A to Panel D show the results for the time series regressions that test the change in net income and market price return by applying the regression specified in equation (3.32). In this table, Panel A presents results for the Primary and Secondary sample; Panel B presents results for the Control group; Panel C presents results for the Primary sample; and, Panel D presents results for the Secondary sample.

Time Series Regression Table Description

The Table 4.10 columns represent the following:

The Total Period column represents the time series regression results for the year range 1994 to 2008, with a single year represented from 1st January to 31st December, with the 31st December selected as the variable record date. The Sub-Periods column represents the time series regression results for the year range 1994 to 2004, and for 1994 to 2007, with a single year represented from 1st January to 31st December, and a 31st December variable record date.

The Measure column represents the time series regression results for the total and sub-time periods and is represented by the following data panels:

The *Regression* panel presents the coefficients and related statistics for the regression specified in equation (3.32), and follows the model:

$$dM_{N,t} = a + b\ dI_{N,t} + e_{N,t}$$

Where: $dM_{N,t}$ is the log Market Price return ($M_{t-1,t}$) for N firms at time t, $dI_{N,t}$ is the change in Net Income ($I_{t-1,t}$) for N firms at time t, and $e_{N,t}$ is the regression error term. The *Lower* and *Upper* are the corresponding coefficient levels predicted at a 99% confidence level.

The *Correlation* panel presents the correlation statistics for the relationship between the dependent and independent variables. The *Descriptive Statistics* panel presents for the variables tested, the average sample means calculated using equation (M.6); the standard deviation, *SD*, of sample means for the time series using equation (M.7); and, the standard error of means, *SE*, for the time series. The *Observations* panel presents: *Firms (n)* (term *N* in the regression) that represents the average number of sample firms in the time series regression (for the Primary and Secondary sample, for the time period 1994 to 2004, the number of firms are rounded down); *Years (T)* represents the number of time series years; *Total (n* x *T)* represents the number of averaged pooled time series regression observations.

Table 4.10 (Continued)

PANEL A

Time Series Regression Analysis for the Primary and Secondary Sample Change in Net Income ($I_{t-1,\ t}$) and Market Price Return ($M_{t-1,\ t}$)

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	0.038	-0.025	0.012
		t (b)	0.840	-0.356	0.343
		p (b)	4.2E-01	7.3E-01	7.4E-01
		SE(b)	0.045	0.070	0.034
		Lower	-0.098	-0.253	-0.091
		Upper	0.173	0.203	0.114
	Intercept	*a*	0.023	0.077	0.078
		t (a)	0.334	1.257	1.506
		p (a)	7.4E-01	2.4E-01	1.6E-01
		SE(a)	0.068	0.062	0.052
		Lower	-0.182	-0.123	-0.080
		Upper	0.227	0.278	0.236
	Model	R^2	0.051	0.014	0.010
		s(e)	0.257	0.203	0.187
		df(e)	13	9	12
Correlation		*r*	0.227	-0.118	0.099
		p(r)	2.1E-01	3.6E-01	3.7E-01
Descriptive Statistics		*I*	0.315	-0.084	0.402
		SD (I)	1.526	0.918	1.545
		SE(I)	0.394	0.277	0.413
		M	0.035	0.080	0.083
		SD (M)	0.254	0.194	0.180
		SE(M)	0.066	0.059	0.048
Observations		*Firms (n)*	16	15	16
		Years (T)	15	11	14
		Total (n x T)	233	169	217

Panel notes:
The sample consists of a maximum of 233 observations from 16 firms in the LSE consisting of the 5 banks and 11 banking related firms that adopted the IFRS standards in 2005. Observations are taken on a yearly basis from 1994 to 2008.
See main table notes for the regression model applied.
Regression coefficients and related statistics are calculated using OLS regression.

Table 4.10 (Continued)

PANEL B

Time Series Regression Analysis for the Control Group Change in Net Income ($I_{t-1, t}$) and Market Price Return ($M_{t-1, t}$)

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	-0.263	-0.154	-0.102
		t (b)	-2.096	-0.814	-0.560
		p (b)	5.6E-02	4.4E-01	5.9E-01
		SE(b)	0.125	0.189	0.181
		Lower	-0.641	-0.768	-0.656
		Upper	0.115	0.460	0.452
	Intercept	*a*	0.037	0.018	0.050
		t (a)	0.731	0.302	0.977
		p (a)	4.8E-01	7.7E-01	3.5E-01
		SE(a)	0.051	0.059	0.051
		Lower	-0.116	-0.173	-0.106
		Upper	0.190	0.209	0.206
	Model	R^2	0.253	0.069	0.025
		s(e)	0.194	0.193	0.191
		df(e)	13	9	12
Correlation		*r*	-0.503*	-0.262	-0.160
		p(r)	2.8E-02	2.2E-01	2.9E-01
Descriptive Statistics		*I*	0.067	-0.044	-0.011
		SD (I)	0.414	0.323	0.292
		SE(I)	0.107	0.097	0.078
		M	0.020	0.025	0.051
		SD (M)	0.217	0.190	0.186
		SE(M)	0.056	0.057	0.050
Observations		*Firms (n)*	12	12	12
		Years (T)	15	11	14
		Total (n x T)	180	132	168

Panel notes:
**, * Correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.
The control consists of a maximum of 180 observations from 12 banking related firms in the LSE that did not adopt the IFRS standards in 2005. Observations are taken on a yearly basis from 1994 to 2008.
See main table notes for the regression model applied.
Regression coefficients and the related statistics are calculated using OLS regression.

Table 4.10 (Continued)

PANEL C

Time Series Regression Analysis for the Primary Sample Change in Net Income ($I_{t-1,\,t}$) and Market Price Return ($M_{t-1,\,t}$)

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	0.404**	0.093	0.107
		t (b)	4.074	0.740	0.911
		p (b)	1.3E-03	4.8E-01	3.8E-01
		SE(b)	0.099	0.126	0.118
		Lower	0.105	-0.316	-0.252
		Upper	0.703	0.503	0.466
	Intercept	*a*	-0.047	0.072	0.052
		t (a)	-0.752	1.088	0.933
		p (a)	4.7E-01	3.0E-01	3.7E-01
		SE(a)	0.062	0.066	0.056
		Lower	-0.233	-0.142	-0.118
		Upper	0.140	0.285	0.222
	Model	R^2	0.561	0.057	0.065
		s(e)	0.235	0.188	0.178
		df(e)	13	9	12
Correlation		*r*	0.749**	0.239	0.254
		p(r)	6.6E-04	2.4E-01	1.9E-01
Descriptive Statistics		*I*	0.119	0.264	0.245
		SD (I)	0.634	0.472	0.420
		SE(I)	0.164	0.142	0.112
		M	0.001	0.096	0.078
		SD (M)	0.342	0.184	0.177
		SE(M)	0.088	0.055	0.047
Observations		*Firms (n)*	5	5	5
		Years (T)	15	11	14
		Total (n x T)	75	55	70

Panel notes:

**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.

The sample consists of a maximum of 75 observations from the 5 banks in the LSE that adopted the IFRS standards in 2005. Observations are taken on a yearly basis from 1994 to 2008.

See main table notes for the regression model applied.

Regression coefficients and the related statistics are calculated using OLS regression.

Table 4.10 (Continued)

PANEL D

Time Series Regression Analysis for the Secondary Sample Change in Net Income ($I_{t-1,\,t}$) and Market Price Return ($M_{t-1,\,t}$)

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	0.016	-0.035	0.009
		t (b)	0.559	-0.694	0.355
		p (b)	5.9E-01	5.1E-01	7.3E-01
		SE(b)	0.029	0.051	0.025
		Lower	-0.072	-0.199	-0.068
		Upper	0.104	0.129	0.086
	Intercept	*a*	0.043	0.064	0.081
		t (a)	0.688	0.949	1.441
		p (a)	5.0E-01	3.7E-01	1.8E-01
		SE(a)	0.063	0.067	0.056
		Lower	-0.146	-0.154	-0.090
		Upper	0.233	0.282	0.251
	Model	R^2	0.023	0.051	0.010
		s(e)	0.239	0.219	0.204
		df(e)	13	9	12
Correlation		*r*	0.153	-0.225	0.102
		p(r)	2.9E-01	2.5E-01	3.6E-01
Descriptive Statistics		*I*	0.404	-0.243	0.473
		SD (I)	2.193	1.368	2.259
		SE(I)	0.566	0.412	0.604
		M	0.050	0.072	0.085
		SD (M)	0.233	0.213	0.197
		SE(M)	0.060	0.064	0.053
Observations		*Firms (n)*	11	11	11
		Years (T)	15	11	14
		Total (n x T)	165	121	154

Panel notes:
The sample consists of a maximum of 165 observations from 11 banking related firms in the LSE that adopted the IFRS standards in 2005. Observations are taken on a yearly basis from 1994 to 2008.
See main table notes for the regression model applied.
Regression coefficients and the related statistics are calculated using OLS regression.

Analysis

The Table 4.10 time series regression slopes generally show that for the samples and the control group the change in the net income variable does not exhibit statistically significant explanatory power to the market price return variable. The only exception is the Primary sample that shows after 2005, a 1% variation in the change in the net income variable related close to a 0.5% (0.404) change in the market price return variable. Other than this, these time series slopes suggest that the net income change variable of the samples and the control group does not show statistically significant reaction to the market price return variable before and after the 2005 accounting change.

4.4 Significance of Differences for Change in Accounting Totals and Market Price Return Regression Slope Coefficients

The analysis of the significance of differences between the change in accounting totals and the market price return time series regressions slope coefficients from Section 4.3 is presented in Table 4.11.

Table 4.11 *t*-Test for Significance of Differences Within and Between Samples and Control Group for Change in Accounting Totals and Market Price Return Regression Slopes from Table 4.6 to Table 4.10

Table 4.11 Panel A to Panel E presents the *t-statistics* that provides a comparison of slope coefficients *within the sample*, and for slope coefficients *between the samples*, for the change in accounting totals to market price return time series regressions presented in Table 4.6 to Table 4.10. The *within sample* comparison is between the regression slope coefficients for the time periods 1994 to 2004, 1994 to 2007 and 1994 to 2008. From each of the *within sample* slope coefficients, the *between samples* comparison tests between the Primary and Secondary sample, Control group, Primary sample and Secondary sample. Table 4.11 comprises of four matrices (Panel A to Panel E) and each matrix is designed to be read first vertically and then horizontally. The intersection between the vertical column and horizontal record is the *t-statistic* and is read as the difference between the *slope coefficient corresponding to the vertically labelled sample or control group* to the *slope coefficient corresponding to the horizontally labelled sample or control group*.

Panel A presents the *t-statistic* results that compare the slope coefficients for the change in total equity and market price return from Table 4.6 results. Panel B presents the *t-statistic* results that compare the slope coefficients for the change in total equity per share and market price return from Table 4.7 results. Panel C presents the *t-statistic* results that compare the slope coefficients for the change in total Assets and market price return from Table 4.8 results. Panel D presents the *t-statistic* results that compare the slope coefficients for the change in total liabilities and market price return from Table 4.9 results. Panel E presents the *t-statistic* results that compare the slope coefficients for the change in net income and market price return from Table 4.10 results.

The *t*-test applied to compare the difference of slope coefficients takes the form (Cohen 1983, Paternoster, Brame, Mazerolle and Piquero1998):

$$t - statistic = \frac{b_1 - b_2}{\sqrt{SE(b_1)^2 + SE(b_2)^2}} \tag{4.3}$$

Where: $t - statistic$ is the measure of difference between the regression slope coefficients; b_1 and b_2 are the regression slope coefficients compared; and, $SE(b_1)$ and $SE(b_2)$ are the standard errors for the slopes b_1 and b_2 respectively.

The Table 4.11 columns represent the following:
The Sample and Control Group column is the horizontal matrix label. This column presents for the samples and control group the *t-statistic* for the slope coefficient comparisons for the time periods presented in the Time Period column. The PS record presents the Primary and Secondary sample *t-statistics*. The C record presents the Control group *t-statistics*. The P record presents the Primary sample *t-statistics*. The S record presents the Secondary sample *t-statistics*. The Time Periods column presents the regression time period records: 1994-2008, 1994-2007 and 1994-2004. These identify the horizontal *t-statistic* record. The second Samples and Control Group column is the vertical matrix label. This column presents the *t-statistic* corresponding to the sample and control group regression slope coefficients for the specified time period. This column, generally, has the same definitions as the horizontal labels.

Table 4.11 (Continued)

PANEL A

***t*-Test for Significance of Differences Within and Between Samples and Control Group for Change in Total Equity and Market Price Return Regression Slope Coefficients from Table 4.6**

Sample and Control Group	Time Periods	PS 1994-2004	PS 1994-2007	PS 1994-2008	C 1994-2004	C 1994-2007	C 1994-2008	P 1994-2004	P 1994-2007	P 1994-2008	S 1994-2004	S 1994-2007	S 1994-2008
		t-statistic for differences between slopes											
PS	1994-2004	-	0.060	0.575	0.088	0.157	0.305	-1.814	-1.831	-1.412	0.002	0.074	0.533
	1994-2007	-0.060	-	0.552	0.012	0.091	0.259	-2.103	-2.127	-1.581	-0.048	0.022	0.508
	1994-2008	-0.575	-0.552	-	-0.659	-0.599	-0.481	-2.218	-2.233	-1.848	-0.497	-0.490	-0.059
C	1994-2004	-0.088	-0.012	0.659	-	0.225	0.749	-4.031**	-4.212**	-2.173	-0.064	0.017	0.619
	1994-2007	-0.157	-0.091	0.599	-0.225	-	0.473	-4.068**	-4.242**	-2.233	-0.115	-0.047	0.555
	1994-2008	-0.305	-0.259	0.481	-0.749	-0.473	-	-4.446**	-4.645**	-2.414*	-0.226	-0.184	0.429
P	1994-2004	1.814	2.103	2.218	4.031**	4.068**	4.446**	-	0.000	0.125	1.404	1.800	2.270
	1994-2007	1.831	2.127	2.233	4.212**	4.242**	4.645**	0.000	-	0.126	1.412	1.815	2.287
	1994-2008	1.412	1.581	1.848	2.173	2.233	2.414*	-0.125	-0.126	-	1.168	1.431	1.861
S	1994-2004	-0.002	0.048	0.497	0.064	0.115	0.226	-1.404	-1.412	-1.168	-	0.062	0.456
	1994-2007	-0.074	-0.022	0.490	-0.017	0.047	0.184	-1.800	-1.815	-1.431	-0.062	-	0.446
	1994-2008	-0.533	-0.508	0.059	-0.619	-0.555	-0.429	-2.270	-2.287	-1.861	-0.456	-0.446	-

Sample and Control Group: Primary and Secondary (PS); Control (C); Primary (P); Secondary (S)

Panel notes:
**, * *t-statistic* for the significance of slope coefficients difference is significant at the 0.01 and 0.05 two-tailed levels.
A highlighted column identifies a regression slope coefficient with a *p-value* at the 0.05 significance level from Table 4.6.

Table 4.11 (Continued)

PANEL B

***t*-Test for Significance of Differences Within and Between Samples and Control Group for Change in Total Equity per Share and Market Price Return Regression Slope Coefficients from Table 4.7**

Sample and Control Group	Time Periods	Sample and Control Group: Primary and Secondary (PS) 1994-2004	PS 1994-2007	PS 1994-2008	Control (C) 1994-2004	C 1994-2007	C 1994-2008	Primary (P) 1994-2004	P 1994-2007	P 1994-2008	Secondary (S) 1994-2004	S 1994-2007	S 1994-2008
		t-statistic for differences between slopes											
PS	1994-2004	-	-0.012	0.510	-2.241	-2.166	-2.072	-1.638	-1.811	-0.028	-0.148	-0.165	-0.302
	1994-2007	0.012	-	0.567	-2.481*	-2.398*	-2.293	-1.717	-1.900	-0.019	-0.143	-0.161	-0.310
	1994-2008	-0.510	-0.567	-	-4.544**	-4.426**	-4.28**	-2.518*	-2.725*	-0.449	-0.579	-0.682	-1.033
C	1994-2004	2.241	2.481*	4.544**	-	0.514	1.207	-0.011	-0.265	1.691	1.514	1.877	2.634*
	1994-2007	2.166	2.398*	4.426**	-0.514	-	0.684	-0.089	-0.343	1.633	1.458	1.807	2.53*
	1994-2008	2.072	2.293	4.28**	-1.207	-0.684	-	-0.190	-0.443	1.560	1.386	1.719	2.398*
P	1994-2004	1.638	1.717	2.518*	0.011	0.089	0.190	-	-0.181	1.374	1.238	1.413	1.594
	1994-2007	1.811	1.900	2.725*	0.265	0.343	0.443	0.181	-	1.524	1.386	1.581	1.795
	1994-2008	0.028	0.019	0.449	-1.691	-1.633	-1.560	-1.374	-1.524	-	-0.107	-0.116	-0.219
S	1994-2004	0.148	0.143	0.579	-1.514	-1.458	-1.386	-1.238	-1.386	0.107	-	0.002	-0.084
	1994-2007	0.165	0.161	0.682	-1.877	-1.807	-1.719	-1.413	-1.581	0.116	-0.002	-	-0.101
	1994-2008	0.302	0.310	1.033	-2.634*	-2.53*	-2.398*	-1.594	-1.795	0.219	0.084	0.101	-

t-statistic for differences between slopes

Panel notes:

**, * *t-statistic* for the significance of slope coefficients difference is significant at the 0.01 and 0.05 two-tailed levels.

A highlighted column identifies a regression slope coefficient with a *p-value* at the 0.05 significance level from Table 4.7.

Table 4.11 (Continued)

PANEL C

t-Test for Significance of Differences Within and Between Samples and Control Group for Change in Total Assets and Market Price Return Regression Slope Coefficients from Table 4.8

Sample and Control Group	Time Periods	Primary and Secondary (PS) 1994-2004	Primary and Secondary (PS) 1994-2007	Primary and Secondary (PS) 1994-2008	Control (C) 1994-2004	Control (C) 1994-2007	Control (C) 1994-2008	Primary (P) 1994-2004	Primary (P) 1994-2007	Primary (P) 1994-2008	Secondary (S) 1994-2004	Secondary (S) 1994-2007	Secondary (S) 1994-2008
		t-statistic for differences between slopes											
PS	1994-2004	-	-0.940	-0.508	-1.258	-1.224	-1.249	-1.806	-2.267	-2.944*	-0.368	-0.813	-0.421
	1994-2007	0.940	-	0.348	-0.177	-0.130	-0.161	-1.052	-1.625	-2.481*	0.462	0.152	0.686
	1994-2008	0.508	-0.348	-	-0.543	-0.510	-0.532	-1.190	-1.618	-2.377	0.118	-0.224	0.186
C	1994-2004	1.258	0.177	0.543	-	0.170	0.071	-1.352	-2.464*	-3.096*	0.658	0.385	1.187
	1994-2007	1.224	0.130	0.510	-0.170	-	-0.117	-1.401	-2.519*	-3.132**	0.627	0.338	1.133
	1994-2008	1.249	0.161	0.532	-0.071	0.117	-	-1.383	-2.519*	-3.126**	0.648	0.370	1.177
P	1994-2004	1.806	1.052	1.190	1.352	1.401	1.383	-	-0.518	-1.633	1.256	1.206	1.834
	1994-2007	2.267	1.625	1.618	2.464*	2.519*	2.519*	0.518	-	-1.318	1.654	1.787	2.523*
	1994-2008	2.944*	2.481*	2.377	3.096*	3.132**	3.126**	1.633	1.318	-	2.380	2.609*	3.208**
S	1994-2004	0.368	-0.462	-0.118	-0.658	-0.627	-0.648	-1.256	-1.654	-2.380	-	-0.345	0.037
	1994-2007	0.813	-0.152	0.224	-0.385	-0.338	-0.370	-1.206	-1.787	-2.609*	0.345	-	0.523
	1994-2008	0.421	-0.686	-0.186	-1.187	-1.133	-1.177	-1.834	-2.523*	-3.208**	-0.037	-0.523	-

Panel notes:

**, * *t-statistic* for the significance of slope coefficients difference is significant at the 0.01 and 0.05 two-tailed levels.

A highlighted column identifies a regression slope coefficient with a *p-value* at the 0.05 significance level from Table 4.8.

Table 4.11 (Continued)

PANEL D

***t*-Test for Significance of Differences Within and Between Samples and Control Group for Change in Total Liabilities and Market Price Return Regression Slope Coefficients from Table 4.9**

Sample and Control Group	Time Periods	Primary and Secondary (PS) 1994-2004	PS 1994-2007	PS 1994-2008	Control (C) 1994-2004	C 1994-2007	C 1994-2008	Primary (P) 1994-2004	P 1994-2007	P 1994-2008	Secondary (S) 1994-2004	S 1994-2007	S 1994-2008
		t-statistic for differences between slopes											
PS	1994-2004	-	-0.066	-0.040	0.124	-0.007	0.144	0.108	-0.218	-1.092	-0.328	-0.079	0.266
	1994-2007	0.066	-	0.025	0.306	0.106	0.343	0.256	-0.229	-1.427	-0.339	-0.019	0.461
	1994-2008	0.040	-0.025	-	0.209	0.052	0.235	0.182	-0.206	-1.221	-0.324	-0.041	0.361
C	1994-2004	-0.124	-0.306	-0.209	-	-0.278	0.039	-0.016	-0.652	-1.902	-0.559	-0.320	0.247
	1994-2007	0.007	-0.106	-0.052	0.278	-	0.330	0.208	-0.434	-1.782	-0.435	-0.126	0.452
	1994-2008	-0.144	-0.343	-0.235	-0.039	-0.330	-	-0.048	-0.708	-1.959	-0.582	-0.355	0.223
P	1994-2004	-0.108	-0.256	-0.182	0.016	-0.208	0.048	-	-0.531	-1.698	-0.519	-0.270	0.234
	1994-2007	0.218	0.229	0.206	0.652	0.434	0.708	0.531	-	-1.382	-0.210	0.201	0.726
	1994-2008	1.092	1.427	1.221	1.902	1.782	1.959	1.698	1.382	-	0.707	1.384	1.778
S	1994-2004	0.328	0.339	0.324	0.559	0.435	0.582	0.519	0.210	-0.707	-	0.322	0.659
	1994-2007	0.079	0.019	0.041	0.320	0.126	0.355	0.270	-0.201	-1.384	-0.322	-	0.471
	1994-2008	-0.266	-0.461	-0.361	-0.247	-0.452	-0.223	-0.234	-0.726	-1.778	-0.659	-0.471	-

Panel notes:
There is an absence of statistically significant slope coefficients difference with significances at the 0.01 and 0.05 two-tailed levels. There are no regression slope coefficients with a *p-value* at the 0.05 significance level from Table 4.9.

Table 4.11 (Continued)

PANEL E

***t*-Test for Significance of Differences Within and Between Samples and Control Group for Change in Net Income and Market Price Return Regression Slope Coefficients from Table 4.10**

Sample and Control Group	Time Periods	Primary and Secondary (PS) 1994-2004	PS 1994-2007	PS 1994-2008	Control (C) 1994-2004	C 1994-2007	C 1994-2008	Primary (P) 1994-2004	P 1994-2007	P 1994-2008	Secondary (S) 1994-2004	S 1994-2007	S 1994-2008
		t-statistic for differences between slopes											
PS	1994-2004	-	0.475	0.757	-0.640	-0.397	-1.661	0.819	0.962	3.538**	-0.115	0.457	0.541
	1994-2007	-0.475	-	0.461	-0.864	-0.619	-2.123	0.621	0.774	3.745**	-0.767	-0.071	0.090
	1994-2008	-0.757	-0.461	-	-0.988	-0.751	-2.266	0.411	0.546	3.366**	-1.073	-0.563	-0.411
C	1994-2004	0.640	0.864	0.988	-	0.199	-0.481	1.087	1.171	2.615*	0.608	0.855	0.889
	1994-2007	0.397	0.619	0.751	-0.199	-	-0.732	0.884	0.967	2.453*	0.356	0.607	0.644
	1994-2008	1.661	2.123	2.266	0.481	0.732	-	2.006	2.152	4.183**	1.689	2.134	2.174
P	1994-2004	-0.819	-0.621	-0.411	-1.087	-0.884	-2.006	-	0.081	1.941	-0.942	-0.654	-0.596
	1994-2007	-0.962	-0.774	-0.546	-1.171	-0.967	-2.152	-0.081	-	1.928	-1.105	-0.812	-0.749
	1994-2008	-3.538**	-3.745**	-3.366**	-2.615*	-2.453*	-4.183**	-1.941	-1.928	-	-3.942**	-3.868**	-3.761**
S	1994-2004	0.115	0.767	1.073	-0.608	-0.356	-1.689	0.942	1.105	3.942**	-	0.775	0.869
	1994-2007	-0.457	0.071	0.563	-0.855	-0.607	-2.134	0.654	0.812	3.868**	-0.775	-	0.183
	1994-2008	-0.541	-0.090	0.411	-0.889	-0.644	-2.174	0.596	0.749	3.761**	-0.869	-0.183	-

Panel notes:
**, * *t-statistic* for the significance of slope coefficients difference is significant at the 0.01 and 0.05 two-tailed levels.
A highlighted column identifies a regression slope coefficient with a *p-value* at the 0.05 significance level from Table 4.10.

Analysis

The regression tests between the change in accounting totals and market price return variables, presented in Section 4.3, Table 4.6 to Table 4.10, were conducted with the objective to determine first if a statistically significant relationship between the accounting totals and the market price change variables exist. The second objective was to determine if the differences between the statistically significant slope coefficients exhibit an improvement in accounting quality after 2005 when compared to before. To determine if these differences in slopes are also statistically significant within and between the samples and control group for before and after 2005, the *t*-test in equation (4.3) is performed. The results from this test are presented in Table 4.11 Panel A to Panel E.

Examining the Table 4.11 results for the Primary and Secondary sample and the Control group regression slope coefficients, the change in total equity per share to market price return slope difference, presented in Panel B, increased from a 2.241 level before 2005 to a statistically significant 4.28 level after 2005. For the Secondary sample compared to the Control group slope differences, the change in total equity per share to market price return difference increased from a 1.514 level before 2005 to a statistically significant 2.398 level after 2005.

Examining the results for the Primary sample and the Control group slope differences, the total equity to market price return slope difference, presented in Panel A, shows an increase from a 4.031 statistically significant level before 2005, to a 4.242 statistically significant level after 2005 for the 1994 to 2007 time period. However, examining the 1994 to 2008 slope difference, the Primary sample and Control group exhibit a decrease, suggesting a deterioration in accounting quality for the Primary sample firms that was greatest between 2005 and 2007. Examining the Primary sample and Control group slope difference for the change in total assets to market price return, presented in Panel C, shows an increase from a 1.352 level before 2005 to a statistically significant 3.126 level after 2005.

Although the *t*-test applied produces some statistically significant results, it is difficult to determine if the results provide evidence to support this study's null hypothesis that accounting quality remained unchanged or ideally improved after 2005. It may be contended that accounting quality did not improve after 2005 when examining the levels of differences in slope coefficients exhibited by the total equity per share and the market price return variables. Such evidence supports the Platikanova and Nobes (2006), Paananen and Lin (2009), and Morais and Curto (2008) findings that suggest a deterioration in accounting quality after 2005. Further, from Table 4.11, when examining the before to after 2005 material differences for within the samples and control group slopes, the results suggest that there was a decline in accounting quality. In addition, when comparing sample slope coefficients to the Control group, the after 2005 differences also suggest a decline in accounting quality when compared to the before 2005 slope differences.

From this examination of the accounting totals and market price change variable relationships, this study proceeds to test its null hypothesis by examining the key accounting total variables: total equity, total assets, total liabilities and net income with the market price variable. The tests conducted apply the relative delta and Value-at-Risk measures at the samples and control group levels and also at the individual bank level.

4.5 Relative Delta Measures: Changes in Accounting Totals to Market Price Returns

The analysis and detailed results for the change in key accounting variables, market price returns and the relative delta measure are presented on a yearly basis for the time range 1994 to 2008 in Table 4.13. In this table, Panel A presents results for the Primary and Secondary sample; Panel B presents results for the Control group; Panel C presents results for the Primary sample; and, Panel D presents results for the Secondary sample. Table 4.12 presents relative percentage change results for Table 4.13.

Table 4.12 Percentage Changes for Relative Delta Measure Results from Table 4.13

Percentage Change Analysis Table Description

The samples and the control group relative delta levels in Table 4.13 for the time period: 1994 to 2004 - before the 2005 accounting change, and the time periods: 1994 to 2007; and 1994 to 2008 - after the accounting change, analysed using relative percentage changes are presented in Table 4.12.

In Table 4.12, the Relative Delta column represents the Description and Symbol columns that describes and *codes* the relative delta measures. The Year column represents the beginning (From) and ending (To) year applied to calculate the percentage changes presented in the Percentage Change column. The Percentage Change column represents the relative delta percentage changes rounded to the nearest whole number. The PS column presents percentage changes for the Primary and Secondary sample. The C column presents the percentage changes for the Control group. The P column presents the percentage changes for the Primary sample. The S column presents the percentage changes for the Secondary sample.

Relative Delta		Year	Percentage Change (%)			
Description	Symbol	From - To	PS	C	P	S
Total Equity to Market Price	*(E-M)*	1994 - 2004	-159	-107	-99	-829
		1994 - 2007	203	-171	96	1,186
		1994 - 2008	1,076	10	561	6,143
Total Assets to Market Price	*(A-M)*	1994 - 2004	164	-133	-28	63
		1994 - 2007	1,636	-180	286	257
		1994 - 2008	5,114	-72	1,139	631
Total Liabilities to Market Price	*(L-M)*	1994 - 2004	-124	-126	-24	-231
		1994 - 2007	294	-171	291	277
		1994 - 2008	1,001	-6	1,162	773
Net Income to Market Price	*(I-M)*	1994 - 2004	-52	-52	-59	62
		1994 - 2007	92	-71	-79	6,708
		1994 - 2008	-174	2,340	-147	-1,069

Table 4.13 Relative Delta Measures from Change in Accounting Totals and Market Price Return

Table Description

The Table 4.13 Panel A to Panel D columns represent the following:

The Year column represents the fiscal accounting year. Record Date is the date the variable values are recorded. *Obs.* represents the number of sample firms observed for the year.

For the Change in Variable (Variable Deltas) column:
E and $dE_{t-1,t}$ column represents the relative change in the total equity variable for the *year* time period $t-1$ to t calculated by applying equation (3.34); *A* and $dA_{t-1,t}$ column represents the log change in total assets for the *year* time period $t-1$ to t calculated by applying equation (3.33); *L* and $dL_{t-1,t}$ column represents the log change in total liabilities for the *year* time period $t-1$ to t calculated by applying equation (3.33); *I* and $dI_{t-1,t}$ column represents the relative change in the net income variable for the *year* time period $t-1$ to t calculated by applying equation (3.34); and *M* and $dM_{t-1,t}$ column represents the market price return specified by the log change in market price for the *year* time period $t-1$ to t and calculated by applying equation (3.35).

For the Relative Delta Measures column:
E-M column represents the Total Equity to Market Price Relative Delta for the *year* time period $t-1$ to t calculated by applying equation (3.38), and takes the general form:

$$\delta EM_{i,t} = dE_{i,t} - dM_{i,t}$$

Where: $\delta EM_{i,t}$ is the Total Equity to Market Price Relative Delta for the i^{th} firm at time t, $dE_{i,t}$ is the change in Total Equity ($dE_{t-1,t}$) for the i^{th} firm at time t, and $dM_{i,t}$ is the log change in market price ($dM_{t-1,t}$) for the i^{th} firm at time t.

A-M column represents the Total Assets to Market Price Relative Delta for the *year* time period $t-1$ to t calculated by applying equation (3.38), and takes the general form:

$$\delta AM_{i,t} = dA_{i,t} - dM_{i,t}$$

Where: $\delta AM_{i,t}$ is the Total Assets to Market Price Relative Delta for the i^{th} firm at time t, $dA_{i,t}$ is the log change in Total Assets ($dA_{t-1,t}$) for the i^{th} firm at time t, and $dM_{i,t}$ is the log change in market price ($dM_{t-1,t}$) for the i^{th} firm at time t.

L-M column represents the Total Liabilities to Market Price Relative Delta for the *year* time period $t-1$ to t calculated by applying equation (3.38), and takes the general form:

$$\delta LM_{i,t} = dL_{i,t} - dM_{i,t}$$

Where: $\delta LM_{i,t}$ is the Total Liabilities to Market Price Relative Delta for the i^{th} firm at time t, $dL_{i,t}$ is the log change in Total Liabilities ($dL_{t-1,t}$) for the i^{th} firm at time t, and $dM_{i,t}$ is the log change in market price ($dM_{t-1,t}$) for the i^{th} firm at time t.

I-M column represents the Net Income to Market Price Relative Delta for the *year* time period $t-1$ to t calculated by applying equation (3.38), and takes the general form:

$$\delta IM_{i,t} = dI_{i,t} - dM_{i,t}$$

Where: $\delta IM_{i,t}$ is the Net Income to Market Price Relative Delta for the i^{th} firm at time *t*, $dI_{i,t}$ is the change in Net Income ($dI_{t-1,t}$) for the i^{th} firm at time *t*, and $dM_{i,t}$ is the log change in market price ($dM_{t-1,t}$) for the i^{th} firm at time *t*.

Table 4.13 (Continued)

PANEL A

Relative Delta Measures for the Primary and Secondary Sample from Change in Accounting Totals and Market Price Return

Year	Record Date	*Obs.*	Change in Variables (Variable Delta)					*Relative Delta Measures*			
			E	*A*	*L*	*I*	*M*	*E-M*	*A-M*	*L-M*	*I-M*
			$dE_{t-1,t}$	$dA_{t-1,t}$	$dL_{t-1,t}$	$dI_{t-1,t}$	$dM_{t-1,t}$				
1994	30-Dec-1994	15	0.092	0.020	0.101	0.394	0.034	0.058	-0.014	0.068	0.360
1995	29-Dec-1995	16	0.409	0.206	0.216	0.508	0.213	0.196	-0.007	0.003	0.295
1996	31-Dec-1996	16	0.174	0.103	0.067	0.337	0.091	0.083	0.012	-0.024	0.246
1997	31-Dec-1997	16	0.223	0.119	0.062	-0.034	0.256	-0.033	-0.137	-0.194	-0.290
1998	31-Dec-1998	16	0.095	0.095	0.093	0.369	0.058	0.037	0.036	0.035	0.311
1999	31-Dec-1999	16	0.174	0.094	-0.004	0.207	0.259	-0.085	-0.165	-0.263	-0.052
2000	29-Dec-2000	16	0.420	0.157	0.201	0.172	0.177	0.244	-0.020	0.025	-0.004
2001	31-Dec-2001	16	0.084	0.063	0.130	-0.239	-0.160	0.244	0.222	0.289	-0.079
2002	31-Dec-2002	16	-0.018	-0.009	0.040	-0.133	-0.372	0.354	0.363	0.412	0.239
2003	31-Dec-2003	16	0.110	0.055	0.060	-2.762	0.233	-0.123	-0.178	-0.173	-2.994
2004	31-Dec-2004	16	0.052	0.095	0.070	0.258	0.086	-0.034	0.009	-0.016	0.172
2005	30-Dec-2005	16	0.270	0.307	0.355	4.809	0.203	0.066	0.104	0.152	4.606
2006	29-Dec-2006	16	0.127	0.114	0.053	1.134	0.154	-0.027	-0.041	-0.101	0.980
2007	31-Dec-2007	16	0.099	0.138	0.191	0.613	-0.077	0.176	0.215	0.268	0.690
2008	31-Dec-2008	16	0.046	0.066	0.113	-0.903	-0.636	0.682	0.702	0.749	-0.266

Panel notes: The Change in Variables are sample averages. The sample consists of a maximum of 16 observations per year from 16 firms in the LSE consisting of the 5 banks and 11 banking related firms that adopted the IFRS standards in 2005. The highlighted record identifies the samples IFRS accounting standards adoption year.

Table 4.13 (Continued)

PANEL B

Relative Delta Measures for the Control Group from Change in Accounting Totals and Market Price Return

Year	Record Date	*Obs.*	Change in Variables (Variable Delta)					*Relative Delta Measures*			
			E	*A*	*L*	*I*	*M*	*E-M*	*A-M*	*L-M*	*I-M*
			$dE_{t-1,t}$	$dA_{t-1,t}$	$dL_{t-1,t}$	$dI_{t-1,t}$	$dM_{t-1,t}$				
1994	30-Dec-1994	12	-0.020	0.008	0.268	-0.028	-0.092	0.073	0.100	0.360	0.065
1995	29-Dec-1995	12	0.164	0.127	0.313	0.081	0.103	0.062	0.024	0.210	-0.022
1996	31-Dec-1996	12	0.158	0.089	0.026	0.095	0.020	0.138	0.069	0.006	0.074
1997	31-Dec-1997	12	0.128	0.097	0.027	0.062	0.103	0.025	-0.006	-0.076	-0.040
1998	31-Dec-1998	12	-0.040	-0.040	0.214	0.248	-0.106	0.066	0.065	0.320	0.354
1999	31-Dec-1999	12	0.446	0.285	0.243	-0.903	0.355	0.091	-0.069	-0.112	-1.257
2000	29-Dec-2000	12	-0.032	-0.040	0.092	0.063	0.015	-0.048	-0.055	0.076	0.048
2001	31-Dec-2001	12	-0.196	-0.196	-0.197	0.001	-0.183	-0.013	-0.013	-0.014	0.184
2002	31-Dec-2002	12	-0.273	-0.275	-0.066	-0.360	-0.307	0.034	0.032	0.241	-0.054
2003	31-Dec-2003	12	0.277	0.188	-0.020	0.103	0.238	0.039	-0.050	-0.258	-0.135
2004	31-Dec-2004	12	0.119	0.091	0.030	0.154	0.124	-0.005	-0.033	-0.094	0.031
2005	30-Dec-2005	12	0.283	0.210	0.025	0.102	0.331	-0.048	-0.121	-0.306	-0.229
2006	29-Dec-2006	12	0.044	0.027	0.105	0.182	0.094	-0.050	-0.067	0.011	0.087
2007	31-Dec-2007	12	-0.032	-0.060	-0.234	0.039	0.020	-0.052	-0.080	-0.254	0.019
2008	31-Dec-2008	12	-0.341	-0.394	-0.084	1.165	-0.421	0.080	0.028	0.338	1.586

Panel notes: The Change in Variables are yearly averages from the Control group firms. The Control group consists of a maximum of 12 observations per year from 12 banking related firms in the LSE that did not adopt the IFRS standards in 2005. The highlighted record identifies the samples IFRS accounting standards adoption year.

Table 4.13 (Continued)

PANEL C

Relative Delta Measures for the Primary Sample from Change in Accounting Totals and Market Price Return

Year	Record Date	*Obs.*	Change in Variables (Variable Delta)					*Relative Delta Measures*			
			E	*A*	*L*	*I*	*M*	*E-M*	*A-M*	*L-M*	*I-M*
			$dE_{t-1,t}$	$dA_{t-1,t}$	$dL_{t-1,t}$	$dI_{t-1,t}$	$dM_{t-1,t}$				
1994	30-Dec-1994	4	0.129	0.062	0.060	1.173	-0.056	0.185	0.118	0.117	1.229
1995	29-Dec-1995	5	0.368	0.211	0.207	0.374	0.324	0.044	-0.112	-0.117	0.050
1996	31-Dec-1996	5	0.158	0.124	0.122	0.251	0.230	-0.072	-0.106	-0.108	0.021
1997	31-Dec-1997	5	-0.005	0.043	0.047	-0.150	0.226	-0.231	-0.183	-0.179	-0.375
1998	31-Dec-1998	5	0.029	0.014	0.013	0.034	-0.035	0.064	0.048	0.048	0.069
1999	31-Dec-1999	5	0.222	0.125	0.121	0.150	0.334	-0.111	-0.209	-0.213	-0.184
2000	29-Dec-2000	5	1.179	0.438	0.427	0.546	0.094	1.086	0.345	0.334	0.453
2001	31-Dec-2001	5	0.125	0.095	0.092	-0.066	-0.032	0.158	0.127	0.125	-0.033
2002	31-Dec-2002	5	-0.061	0.047	0.055	-0.600	-0.266	0.205	0.313	0.321	-0.334
2003	31-Dec-2003	5	0.113	0.070	0.068	0.623	0.175	-0.062	-0.105	-0.108	0.447
2004	31-Dec-2004	5	0.068	0.150	0.155	0.569	0.066	0.002	0.085	0.089	0.504
2005	30-Dec-2005	5	0.181	0.352	0.362	0.336	0.085	0.095	0.267	0.277	0.251
2006	29-Dec-2006	5	0.128	0.092	0.090	0.100	0.120	0.007	-0.028	-0.030	-0.021
2007	31-Dec-2007	5	0.193	0.286	0.287	0.089	-0.171	0.363	0.456	0.458	0.259
2008	31-Dec-2008	5	0.151	0.391	0.405	-1.647	-1.071	1.222	1.462	1.476	-0.576

Panel notes: The Change in Variables are sample averages. The sample consists of a maximum of 5 observations per year from the 5 banks in the LSE that adopted the IFRS standards in 2005. The highlighted record identifies the samples IFRS accounting standards adoption year.

Table 4.13 (Continued)

PANEL D

Relative Delta Measures for the Secondary Sample from Change in Accounting Totals and Market Price Return

Year	Record Date	*Obs.*	Change in Variables (Variable Delta) *E*	*A*	*L*	*I*	*M*	*Relative Delta Measures* *E-M*	*A-M*	*L-M*	*I-M*
			$dE_{t-1,t}$	$dA_{t-1,t}$	$dL_{t-1,t}$	$dI_{t-1,t}$	$dM_{t-1,t}$				
1994	30-Dec-1994	11	0.077	0.003	0.118	0.083	0.070	0.007	-0.067	0.048	0.013
1995	29-Dec-1995	11	0.425	0.204	0.219	0.561	0.169	0.256	0.035	0.051	0.392
1996	31-Dec-1996	11	0.179	0.096	0.046	0.369	0.040	0.139	0.055	0.006	0.328
1997	31-Dec-1997	11	0.307	0.147	0.068	0.008	0.267	0.039	-0.121	-0.200	-0.259
1998	31-Dec-1998	11	0.119	0.124	0.122	0.491	0.092	0.027	0.032	0.030	0.399
1999	31-Dec-1999	11	0.152	0.079	-0.061	0.233	0.225	-0.073	-0.146	-0.286	0.008
2000	29-Dec-2000	11	0.075	0.029	0.098	0.003	0.214	-0.139	-0.185	-0.116	-0.212
2001	31-Dec-2001	11	0.065	0.048	0.147	-0.318	-0.217	0.283	0.265	0.364	-0.100
2002	31-Dec-2002	11	0.002	-0.034	0.034	0.080	-0.420	0.422	0.386	0.454	0.500
2003	31-Dec-2003	11	0.108	0.048	0.057	-4.300	0.259	-0.150	-0.211	-0.202	-4.559
2004	31-Dec-2004	11	0.044	0.070	0.032	0.116	0.095	-0.051	-0.025	-0.063	0.021
2005	30-Dec-2005	11	0.310	0.287	0.352	6.843	0.257	0.053	0.030	0.095	6.586
2006	29-Dec-2006	11	0.127	0.124	0.036	1.604	0.170	-0.043	-0.046	-0.134	1.434
2007	31-Dec-2007	11	0.056	0.071	0.147	0.851	-0.034	0.090	0.105	0.181	0.885
2008	31-Dec-2008	11	-0.002	-0.082	-0.020	-0.564	-0.439	0.437	0.356	0.419	-0.126

Panel notes: The Change in Variables are sample averages. The sample consists of a maximum of 11 observations per year from 11 banking related firms in the LSE that adopted the IFRS standards in 2005. The highlighted 2005 record identified the IFRS implementation event year for the adopting firms.

Analysis

Table 4.13 presents results for the relative delta measure. In this table, for the Primary and Secondary sample there is a greater average difference between the change in accounting total variables and the change in the market price variable after the 2005 accounting change than before. In these results, some *difference component* levels exhibit material significance. However, for the Control group this average difference decreased after 2005 compared to before, other than for the total equity and net income to market price relative delta variables that registered an increase after 2005. The evidence from the relative percentage changes for before and after 2005, presented in Table 4.12, suggest support for these findings.

4.6 Regressions for Accounting Total to Market Price Relative Delta and Historical Value-at-Risk Actual

The analysis and detailed results for the *accounting total to market price relative delta* and the *Historical Value-at-Risk Actual* time series regressions are presented in this section. Appendix V.1 to Appendix V.4 presents analysis and detailed results for cross-sectional regressions using the same variable relationship. The regression analysis is conducted within the time range 1994 to 2008.

4.6.1 Regressions for Total Equity to Market Price Relative Delta and Historical Value-at-Risk Actual

The regression analysis for the total equity to market price relative delta and Historical Value-at-Risk Actual is presented for the time range 1994 to 2008 in Table 4.14 (and Table V.1). In the regressions, the Historical Value-at-Risk Actual variable is tested as the dependent variable, and the total equity to market price relative delta variable is tested as the independent variable.

Table 4.14 Time Series Regression Analysis for Total Equity to Market Price Relative Delta and Historical Value-at-Risk Actual

Time Series Regression

Table 4.14 Panel A to Panel D show the results for the time series regressions that test the total equity to market price relative delta and Historical Value-at-Risk Actual by applying the regression specified in equation (3.40). In this table, Panel A presents results for the Primary and Secondary sample; Panel B presents results for the Control group; Panel C presents results for the Primary sample; and, Panel D presents results for the Secondary sample.

Time Series Regression Table Description

The Table 4.14 columns represent the following:

The Total Period column presents the time series regression results for the year range 1994 to 2008, with a single year represented from 1st January to 31st December, with the 31st December selected as the variable record date. The Sub-Periods column presents the time series regression results for the year range 1994 to 2004, and for 1994 to 2007, with a single year represented from 1st January to 31st December, and a 31st December variable record date.

The Measure column represents the time series regression results for the total and sub-time periods and is represented by the following data panels:

The *Regression* panel presents the coefficients and related statistics for the regression specified in equation (3.40), and follows the model:

$$V_{N,\mathrm{t}} = a + b\ (dE - dM)_{N,t} + e_{N,t}$$

Where: $V_{N,t}$ is the Value-at-Risk (V_{t}) for N firms at time t, $(dE - dM)_{N,t}$ is the Total Equity to Market Price Relative Delta ($dE_{t-1,t} - dM_{t-1,t}$) for N firms at time t, and $e_{N,t}$ is the regression error term. The *Lower* and *Upper* are the corresponding coefficient levels predicted at a 99% confidence level.

The *Correlation* panel presents the correlation statistics for the relationship between the dependent and independent variables. The *Descriptive Statistics* panel presents for the variables tested, the average sample means calculated using equation (M.6); the standard deviation, *SD*, of sample means for the time series using equation (M.7); and, the standard error of means, *SE*, for the time series. The *Observations* panel presents: *Firms (n)* (term *N* in the regression) that represents the average number of sample firms in the time series regression (for the Primary and Secondary sample, for the time period 1994 to 2004, the number of firms are rounded down); *Years (T)* represents the number of time series years; *Total (n x T)* represents the number of averaged pooled time series regression observations.

Table 4.14 (Continued)

PANEL A

Time Series Regression Analysis for the Primary and Secondary Sample Total Equity to Market Price Relative Delta ($dE_{t-1,\,t}$ - $dM_{t-1,\,t}$) and Historical Value-at-Risk Actual (V_t)

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	-0.703*	-0.252	-0.320
		t (b)	-2.976	-0.667	-0.935
		p (b)	1.1E-02	5.2E-01	3.7E-01
		SE(b)	0.236	0.378	0.342
		Lower	-1.415	-1.479	-1.365
		Upper	0.009	0.975	0.725
	Intercept	*a*	-0.084	-0.141	-0.104
		t (a)	-1.520	-2.192	-1.905
		p (a)	1.5E-01	5.6E-02	8.1E-02
		SE(a)	0.055	0.064	0.054
		Lower	-0.250	-0.350	-0.270
		Upper	0.082	0.068	0.063
	Model	R^2	0.405	0.047	0.068
		s(e)	0.182	0.184	0.174
		df(e)	13	9	12
Correlation		*r*	-0.637**	-0.217	-0.261
		p(r)	5.4E-03	2.6E-01	1.8E-01
Descriptive Statistics		*dE-dM*	0.122	0.085	0.082
		SD (dE-dM)	0.206	0.154	0.141
		SE(dE-dM)	0.053	0.047	0.038
		V 95	-0.170	-0.162	-0.130
		SD (V 95)	0.228	0.179	0.173
		SE(V 95)	0.059	0.054	0.046
Observations		*Firms (n)*	16	15	16
		Years (T)	15	11	14
		Total (n x T)	233	169	217

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.
The sample consists of a maximum of 233 observations from 16 firms in the LSE consisting of the 5 banks and 11 banking related firms that adopted the IFRS standards in 2005. Observations are taken on a yearly basis from 1994 to 2008.
See main table notes for the regression model applied.
Regression coefficients and related statistics are calculated using OLS regression.

Table 4.14 (Continued)

PANEL B

Time Series Regression Analysis for the Control Group Total Equity to Market Price Relative Delta (*$dE_{t-1,\,t}$ - $dM_{t-1,\,t}$*) and Historical Value-at-Risk Actual (*V_t*)

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	-1.208	-0.009	-0.910
		t (b)	-1.208	-0.009	-0.910
		p (b)	1.3E-01	9.9E-01	2.4E-01
		SE(b)	0.751	0.992	0.729
		Lower	-3.470	-3.232	-3.136
		Upper	1.053	3.215	1.316
	Intercept	*a*	-0.125*	-0.176*	-0.114*
		t (a)	-2.621	-2.735	-2.522
		p (a)	2.1E-02	2.3E-02	2.7E-02
		SE(a)	0.048	0.064	0.045
		Lower	-0.268	-0.386	-0.252
		Upper	0.019	0.033	0.024
	Model	R^2	0.166	8.2E-06	0.115
		s(e)	0.168	0.163	0.158
		df(e)	13	9	12
Correlation		*r*	-0.408	-0.003	-0.339
		p(r)	6.6E-02	5.0E-01	1.2E-01
Descriptive Statistics		*dE-dM*	0.026	0.042	0.022
		SD (dE-dM)	0.060	0.052	0.060
		SE(dE-dM)	0.015	0.016	0.016
		V 95	-0.156	-0.177	-0.134
		SD (V 95)	0.177	0.155	0.161
		SE(V 95)	0.046	0.047	0.043
Observations		*Firms (n)*	12	12	12
		Years (T)	15	11	14
		Total (n x T)	180	132	168

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels.
The control consists of a maximum of 180 observations from 12 banking related firms in the LSE that did not adopt the IFRS standards in 2005. Observations are taken on a yearly basis from 1994 to 2008.
See main table notes for the regression model applied.
Regression coefficients and the related statistics are calculated using OLS regression.

Table 4.14 (Continued)

PANEL C

Time Series Regression Analysis for the Primary Sample Total Equity to Market Price Relative Delta ($dE_{t-1,\,t}$ - $dM_{t-1,\,t}$) and Historical Value-at-Risk Actual (V_t)

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	-0.519**	-0.204	-0.224
		t (b)	-3.969	-1.334	-1.617
		p (b)	1.6E-03	2.1E-01	1.3E-01
		SE(b)	0.131	0.153	0.139
		Lower	-0.913	-0.701	-0.647
		Upper	-0.125	0.293	0.199
	Intercept	*a*	-0.103	-0.138*	-0.115*
		t (a)	-1.757	-2.567	-2.524
		p (a)	1.0E-01	3.0E-02	2.7E-02
		SE(a)	0.058	0.054	0.045
		Lower	-0.279	-0.313	-0.253
		Upper	0.073	0.037	0.024
	Model	R^2	0.548	0.165	0.179
		s(e)	0.203	0.169	0.157
		df(e)	13	9	12
Correlation		*r*	-0.74**	-0.406	-0.423
		p(r)	8.0E-04	1.1E-01	6.6E-02
Descriptive Statistics		*dE-dM*	0.197	0.115	0.124
		SD (dE-dM)	0.415	0.349	0.315
		SE(dE-dM)	0.107	0.105	0.084
		V 95	-0.205	-0.162	-0.142
		SD (V 95)	0.291	0.175	0.167
		SE(V 95)	0.075	0.053	0.045
Observations		*Firms (n)*	5	5	5
		Years (T)	15	11	14
		Total (n x T)	75	55	70

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.
The sample consists of a maximum of 75 observations from the 5 banks in the LSE that adopted the IFRS standards in 2005. Observations are taken on a yearly basis from 1994 to 2008.
See main table notes for the regression model applied.
Regression coefficients and the related statistics are calculated using OLS regression.

Table 4.14 (Continued)

PANEL D

Time Series Regression Analysis for the Secondary Sample Total Equity to Market Price Relative Delta ($dE_{t-1,\,t}$ - $dM_{t-1,\,t}$) and Historical Value-at-Risk Actual (V_t)

Measure			Total Period 1994-2008	Sub-Periods 1994-2004	Sub-Periods 1994-2007
Regression	*Slope*	*b*	-0.590	-0.314	-0.372
		t (b)	-2.033	-0.872	-1.119
		p (b)	6.3E-02	4.1E-01	2.8E-01
		SE(b)	0.290	0.360	0.332
		Lower	-1.465	-1.483	-1.387
		Upper	0.284	0.855	0.643
	Intercept	*a*	-0.104	-0.142	-0.103
		t (a)	-1.796	-2.089	-1.813
		p (a)	9.6E-02	6.6E-02	9.5E-02
		SE(a)	0.058	0.068	0.057
		Lower	-0.279	-0.364	-0.276
		Upper	0.071	0.079	0.070
	Model	R^2	0.241	0.078	0.095
		s(e)	0.203	0.211	0.198
		df(e)	13	9	12
Correlation		*r*	-0.491*	-0.279	-0.307
		p(r)	3.1E-02	2.0E-01	1.4E-01
Descriptive Statistics		*dE-dM*	0.086	0.069	0.061
		SD (dE-dM)	0.186	0.185	0.165
		SE(dE-dM)	0.048	0.056	0.044
		V 95	-0.155	-0.164	-0.126
		SD (V 95)	0.224	0.208	0.200
		SE(V 95)	0.058	0.063	0.053
Observations		*Firms (n)*	11	11	11
		Years (T)	15	11	14
		Total (n x T)	165	121	154

Panel notes:
**, * Correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.
The sample consists of a maximum of 165 observations from 11 banking related firms in the LSE that adopted the IFRS standards in 2005. Observations are taken on a yearly basis from 1994 to 2008.
See main table notes for the regression model applied.
Regression coefficients and the related statistics are calculated using OLS regression.

Analysis

The Table 4.14 time series regression slopes show that the total equity to market price relative delta variable exhibits statistically significant explanatory power to the Historical Value-at-Risk Actual variable for the Primary and Secondary sample for the 1994 to 2008 time period. The Control group does not exhibit statistical significance for the three time series periods.

The Table 4.14 Panel A time series regression slope for the Primary and Secondary sample shows that before 2005 there is no statistical significance for the total equity to market price relative delta variable and the Historical Value-at-Risk Actual. After 2005, the regression slope shows that a 1% change in the total equity to market price relative delta variable translates to nearly a 1% (-0.703) increase[45] in the Historical Value-at-Risk Actual variable.

The time series slopes suggest that for the Primary and Secondary sample, the total equity to market price relative delta variable reacted significantly to the Historical Value-at-Risk Actual variable after the 2005 accounting change, and does not show a statistically significant reaction before the change. For the Control group the total equity to market price relative delta variable does not show a statistically significant reaction to the Historical Value-at-Risk Actual variable for before and after 2005.

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[45] The slope coefficient, although negative, is indicated as an increase due to the application of a decreasing scale to measure Value-at-Risk (Berkowitz and O'Brien 2002). Therefore, when applying this measurement approach, an *increasing* Value-at-Risk level is signified by a measure that is *negatively increasing*.

4.6.2 Regressions for Total Assets to Market Price Relative Delta and Historical Value-at-Risk Actual

The regression analysis for the total assets to market price relative delta and Historical Value-at-Risk Actual is presented for the time range 1994 to 2008 in Table 4.15 (and Table V.2). In the regressions, the Historical Value-at-Risk Actual variable is tested as the dependent variable, and the total assets to market price relative delta variable is tested as the independent variable.

Table 4.15 Time Series Regression Analysis for Total Assets to Market Price Relative Delta and Historical Value-at-Risk Actual

Time Series Regression

Table 4.15 Panel A to Panel D show the results for the time series regressions that test the total assets and market price relative delta and Historical Value-at-Risk Actual by applying the regression specified in equation (3.40). In this table, Panel A presents results for the Primary and Secondary sample; Panel B presents results for the Control group; Panel C presents results for the Primary sample; and, Panel D presents results for the Secondary sample.

Time Series Regression Table Description

The Table 4.15 columns represent the following:

The Total Period column presents the time series regression results for the year range 1994 to 2008, with a single year represented from 1st January to 31st December, with the 31st December selected as the variable record date. The Sub-Periods column presents the time series regression results for the year range 1994 to 2004, and for 1994 to 2007, with a single year represented from 1st January to 31st December, and a 31st December variable record date.

The Measure column represents the time series regression results for the total and sub-time periods and is represented by the following data panels:

The *Regression* panel presents the coefficients and related statistics for the regression specified in equation (3.40), and follows the model:

$$V_{N,\mathrm{t}} = a + b\ (dA - dM)_{N,t} + e_{N,t}$$

Where: $V_{N,t}$ is the Value-at-Risk (V_{t}) for N firms at time t, $(dA - dM)_{N,t}$ is the Total Assets to Market Price Relative Delta ($dA_{t-1,t} - dM_{t-1,t}$) for N firms at time t, and $e_{N,t}$ is the regression error term. The *Lower* and *Upper* are the corresponding coefficient levels predicted at a 99% confidence level.

The *Correlation* panel presents the correlation statistics for the relationship between the dependent and independent variables. The *Descriptive Statistics* panel presents for the variables tested, the average sample means calculated using equation (M.6); the standard deviation, *SD*, of sample means for the time series using equation (M.7); and, the standard error of means, *SE*, for the time series. The *Observations* panel presents: *Firms (n)* (term *N* in the regression) that represents the average number of sample firms in the time series regression (for the Primary and Secondary sample, for the time period 1994 to 2004, the number of firms are rounded down); *Years (T)* represents the number of time series years; *Total (n x T)* represents the number of averaged pooled time series regression observations.

Table 4.15 (Continued)

PANEL A

Time Series Regression Analysis for the Primary and Secondary Sample Total Assets to Market Price Relative Delta ($dA_{t-1,\,t}$ - $dM_{t-1,\,t}$) and Historical Value-at-Risk Actual (V_t)

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	-0.627*	-0.342	-0.266
		t (b)	-2.918	-0.969	-0.841
		p (b)	1.2E-02	3.6E-01	4.2E-01
		SE(b)	0.215	0.353	0.316
		Lower	-1.274	-1.487	-1.230
		Upper	0.020	0.804	0.699
	Intercept	*a*	-0.124*	-0.159*	-0.123*
		t (a)	-2.482	-2.919	-2.567
		p (a)	2.8E-02	1.7E-02	2.5E-02
		SE(a)	0.050	0.054	0.048
		Lower	-0.275	-0.335	-0.268
		Upper	0.027	0.018	0.023
	Model	R^2	0.396	0.095	0.056
		s(e)	0.184	0.180	0.175
		df(e)	13	9	12
Correlation		*r*	-0.629**	-0.307	-0.236
		p(r)	6.0E-03	1.8E-01	2.1E-01
Descriptive Statistics		*dA-dM*	0.073	0.011	0.029
		SD (dA-dM)	0.229	0.161	0.154
		SE(dA-dM)	0.059	0.049	0.041
		V 95	-0.170	-0.162	-0.130
		SD (V 95)	0.228	0.179	0.173
		SE(V 95)	0.059	0.054	0.046
Observations		*Firms (n)*	16	15	16
		Years (T)	15	11	14
		Total (n x T)	233	169	217

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.
The sample consists of a maximum of 233 observations from 16 firms in the LSE consisting of the 5 banks and 11 banking related firms that adopted the IFRS standards in 2005. Observations are taken on a yearly basis from 1994 to 2008.
See main table notes for the regression model applied.
Regression coefficients and related statistics are calculated using OLS regression.

Table 4.15 (Continued)

PANEL B

Time Series Regression Analysis for the Control Group Total Assets to Market Price Relative Delta ($dA_{t-1,\,t}$ - $dM_{t-1,\,t}$) and Historical Value-at-Risk Actual (V_t)

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	-0.907	0.219	-0.698
		t (b)	-0.907	0.219	-0.698
		p (b)	2.4E-01	8.1E-01	3.3E-01
		SE(b)	0.732	0.910	0.688
		Lower	-3.112	-2.737	-2.799
		Upper	1.297	3.176	1.404
	Intercept	*a*	-0.167**	-0.178**	-0.145**
		t (a)	-3.655	-3.612	-3.272
		p (a)	2.9E-03	5.6E-03	6.7E-03
		SE(a)	0.046	0.049	0.044
		Lower	-0.305	-0.338	-0.279
		Upper	-0.029	-0.018	-0.010
	Model	R^2	0.106	0.006	0.079
		s(e)	0.174	0.162	0.161
		df(e)	13	9	12
Correlation		*r*	-0.325	0.080	-0.281
		p(r)	1.2E-01	4.1E-01	1.7E-01
Descriptive Statistics		*dA-dM*	-0.012	0.006	-0.015
		SD (dA-dM)	0.063	0.056	0.065
		SE(dA-dM)	0.016	0.017	0.017
		V 95	-0.156	-0.177	-0.134
		SD (V 95)	0.177	0.155	0.161
		SE(V 95)	0.046	0.047	0.043
Observations		*Firms (n)*	12	12	12
		Years (T)	15	11	14
		Total (n x T)	180	132	168

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels.
The control consists of a maximum of 180 observations from 12 banking related firms in the LSE that did not adopt the IFRS standards in 2005. Observations are taken on a yearly basis from 1994 to 2008.
See main table notes for the regression model applied.
Regression coefficients and the related statistics are calculated using OLS regression.

Table 4.15 (Continued)

PANEL C

Time Series Regression Analysis for the Primary Sample Total Assets to Market Price Relative Delta ($dA_{t-1,\,t}$ - $dM_{t-1,\,t}$) and Historical Value-at-Risk Actual (V_t)

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	-0.575**	-0.375	-0.256
		t (b)	-5.047	-1.333	-1.180
		p (b)	2.2E-04	2.2E-01	2.6E-01
		SE(b)	0.114	0.281	0.217
		Lower	-0.918	-1.290	-0.917
		Upper	-0.232	0.539	0.406
	Intercept	*a*	-0.11*	-0.151*	-0.124*
		t (a)	-2.242	-2.927	-2.655
		p (a)	4.3E-02	1.7E-02	2.1E-02
		SE(a)	0.049	0.051	0.047
		Lower	-0.258	-0.318	-0.266
		Upper	0.038	0.017	0.019
	Model	R^2	0.662	0.165	0.104
		s(e)	0.176	0.169	0.164
		df(e)	13	9	12
Correlation		*r*	-0.814**	-0.406	-0.322
		p(r)	1.1E-04	1.1E-01	1.3E-01
Descriptive Statistics		*dA-dM*	0.165	0.029	0.073
		SD (dA-dM)	0.412	0.190	0.210
		SE(dA-dM)	0.106	0.057	0.056
		V 95	-0.205	-0.162	-0.142
		SD (V 95)	0.291	0.175	0.167
		SE(V 95)	0.075	0.053	0.045
Observations		*Firms (n)*	5	5	5
		Years (T)	15	11	14
		Total (n x T)	75	55	70

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.
The sample consists of a maximum of 75 observations from the 5 banks in the LSE that adopted the IFRS standards in 2005. Observations are taken on a yearly basis from 1994 to 2008.
See main table notes for the regression model applied.
Regression coefficients and the related statistics are calculated using OLS regression.

Table 4.15 (Continued)

PANEL D

Time Series Regression Analysis for the Secondary Sample Total Assets to Market Price Relative Delta ($dA_{t-1, t}$ - $dM_{t-1, t}$) and Historical Value-at-Risk Actual (V_t)

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	-0.577	-0.372	-0.356
		t (b)	-1.931	-1.056	-1.072
		p (b)	7.6E-02	3.2E-01	3.0E-01
		SE(b)	0.299	0.353	0.332
		Lower	-1.476	-1.518	-1.372
		Upper	0.323	0.774	0.659
	Intercept	*a*	-0.137*	-0.164*	-0.123*
		t (a)	-2.558	-2.621	-2.312
		p (a)	2.4E-02	2.8E-02	3.9E-02
		SE(a)	0.054	0.062	0.053
		Lower	-0.299	-0.366	-0.285
		Upper	0.024	0.039	0.039
	Model	R^2	0.223	0.110	0.087
		s(e)	0.205	0.207	0.199
		df(e)	13	9	12
Correlation		*r*	-0.472*	-0.332	-0.296
		p(r)	3.8E-02	1.6E-01	1.5E-01
Descriptive Statistics		*dA-dM*	0.031	0.002	0.008
		SD (dA-dM)	0.183	0.186	0.166
		SE(dA-dM)	0.047	0.056	0.044
		V 95	-0.155	-0.164	-0.126
		SD (V 95)	0.224	0.208	0.200
		SE(V 95)	0.058	0.063	0.053
Observations		*Firms (n)*	11	11	11
		Years (T)	15	11	14
		Total (n x T)	165	121	154

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.
The sample consists of a maximum of 165 observations from 11 banking related firms in the LSE that adopted the IFRS standards in 2005. Observations are taken on a yearly basis from 1994 to 2008.
See main table notes for the regression model applied.
Regression coefficients and the related statistics are calculated using OLS regression.

Analysis

The Table 4.15 time series regression slopes show that the total assets to market price relative delta variable exhibits statistically significant explanatory power to the Historical Value-at-Risk Actual variable for the Primary and Secondary sample for the 1994 to 2008 time period. The Control group does not exhibit statistical significance for the three time series periods.

The Table 4.15 Panel A time series regression slope for the Primary and Secondary sample shows that before 2005 there is no statistical significance for the total assets to market price relative delta variable and the Historical Value-at-Risk Actual variable. After 2005, the regression slope shows that a 1% change in the total assets to market price relative delta variable translates to nearly a 1% (-0.627) increase in the Historical Value-at-Risk Actual variable.

The time series slopes suggest that for the Primary and Secondary sample the total assets to market price relative delta variable reacted significantly to the Historical Value-at-Risk Actual variable after the 2005 accounting change, and does not show a statistically significant reaction before the change. For the Control group the total assets to market price relative delta variable does not show a statistically significant reaction to the Historical Value-at-Risk Actual variable for before and after 2005.

4.6.3 Regressions for Total Liabilities to Market Price Relative Delta and Historical Value-at-Risk Actual

The regression analysis for the total liabilities to market price relative delta and Historical Value-at-Risk Actual is presented for the time range 1994 to 2008 in Table 4.16 (and Table V.3). In the regressions, the Historical Value-at-Risk Actual variable is tested as the dependent variable, and the total liabilities to market price relative delta variable is tested as the independent variable.

Table 4.16 Time Series Regression Analysis for Total Liabilities to Market Price Relative Delta and Historical Value-at-Risk Actual

Time Series Regression

Table 4.16 Panel A to Panel D show the results for the time series regressions that test the total liabilities to market price relative delta and Historical Value-at-Risk Actual by applying the regression specified in equation (3.40). In this table, Panel A presents results for the Primary and Secondary sample; Panel B presents results for the Control group; Panel C presents results for the Primary sample; and, Panel D presents results for the Secondary sample.

Time Series Regression Table Description

The Table 4.16 columns represent the following:

The Total Period column presents the time series regression results for the year range 1994 to 2008, with a single year represented from 1st January to 31st December, with the 31st December selected as the variable record date. The Sub-Periods column presents the time series regression results for the year range 1994 to 2004, and for 1994 to 2007, with a single year represented from 1st January to 31st December, and a 31st December variable record date.

The Measure column represents the time series regression results for the total and sub-time periods and is represented by the following data panels:

The *Regression* panel presents the coefficients and related statistics for the regression specified in equation (3.40), and follows the model:

$$V_{N,\mathrm{t}} = a + b\ (dL - dM)_{N,t} + e_{N,t}$$

Where: $V_{N,t}$ is the Value-at-Risk (V_{t}) for N firms at time t, $(dL - dM)_{N,t}$ is the Total Liabilities to Market Price Relative Delta ($dL_{t-1,t} - dM_{t-1,t}$) for N firms at time t, and $e_{N,t}$ is the regression error term. The *Lower* and *Upper* are the corresponding coefficient levels predicted at a 99% confidence level.

The *Correlation* panel presents the correlation statistics for the relationship between the dependent and independent variables. The *Descriptive Statistics* panel presents for the variables tested, the average sample means calculated using equation (M.6); the standard deviation, *SD*, of sample means for the time series using equation (M.7); and, the standard error of means, *SE*, for the time series. The *Observations* panel presents: *Firms (n)* (term *N* in the regression) that represents the average number of sample firms in the time series regression (for the Primary and Secondary sample, for the time period 1994 to 2004, the number of firms are rounded down); *Years (T)* represents the number of time series years; *Total (n x T)* represents the number of averaged pooled time series regression observations.

Table 4.16 (Continued)

PANEL A

Time Series Regression Analysis for the Primary and Secondary Sample Total Liabilities to Market Price Relative Delta ($dL_{t-1,\,t}$ - $dM_{t-1,\,t}$) and Historical Value-at-Risk Actual (V_t)

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	-0.536*	-0.298	-0.239
		t (b)	-2.827	-1.052	-0.958
		p (b)	1.4E-02	3.2E-01	3.6E-01
		SE(b)	0.190	0.284	0.250
		Lower	-1.107	-1.220	-1.001
		Upper	0.035	0.623	0.523
	Intercept	*a*	-0.126*	-0.158*	-0.122*
		t (a)	-2.500	-2.931	-2.579
		p (a)	2.7E-02	1.7E-02	2.4E-02
		SE(a)	0.050	0.054	0.047
		Lower	-0.278	-0.333	-0.266
		Upper	0.026	0.017	0.022
	Model	R^2	0.381	0.110	0.071
		s(e)	0.186	0.178	0.174
		df(e)	13	9	12
Correlation		*r*	-0.617**	-0.331	-0.266
		p(r)	7.1E-03	1.6E-01	1.8E-01
Descriptive Statistics		*dL-dM*	0.082	0.015	0.034
		SD (dL-dM)	0.262	0.199	0.193
		SE(dL-dM)	0.068	0.060	0.052
		V 95	-0.170	-0.162	-0.130
		SD (V 95)	0.228	0.179	0.173
		SE(V 95)	0.059	0.054	0.046
Observations		*Firms (n)*	16	15	16
		Years (T)	15	11	14
		Total (n x T)	233	169	217

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.
The sample consists of a maximum of 233 observations from 16 firms in the LSE consisting of the 5 banks and 11 banking related firms that adopted the IFRS standards in 2005. Observations are taken on a yearly basis from 1994 to 2008.
See main table notes for the regression model applied.
Regression coefficients and related statistics are calculated using OLS regression.

Table 4.16 (Continued)

PANEL B

Time Series Regression Analysis for the Control Group Total Liabilities to Market Price Relative Delta ($dL_{t-1,\,t}$ - $dM_{t-1,\,t}$) and Historical Value-at-Risk Actual (V_t)

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	-0.275	0.042	-0.150
		t (b)	-0.275	0.042	-0.150
		p (b)	2.1E-01	8.7E-01	5.0E-01
		SE(b)	0.207	0.259	0.214
		Lower	-0.899	-0.799	-0.803
		Upper	0.349	0.884	0.503
	Intercept	*a*	-0.148**	-0.179**	-0.133*
		t (a)	-3.295	-3.482	-3.030
		p (a)	5.8E-03	6.9E-03	1.0E-02
		SE(a)	0.045	0.051	0.044
		Lower	-0.284	-0.346	-0.267
		Upper	-0.013	-0.012	0.001
	Model	R^2	0.119	0.003	0.040
		s(e)	0.173	0.163	0.164
		df(e)	13	9	12
Correlation		*r*	-0.345	0.055	-0.199
		p(r)	1.0E-01	4.4E-01	2.5E-01
Descriptive Statistics		*dL-dM*	0.030	0.060	0.008
		SD (dL-dM)	0.222	0.199	0.213
		SE(dL-dM)	0.057	0.060	0.057
		V 95	-0.156	-0.177	-0.134
		SD (V 95)	0.177	0.155	0.161
		SE(V 95)	0.046	0.047	0.043
Observations		*Firms (n)*	12	12	12
		Years (T)	15	11	14
		Total (n x T)	180	132	168

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels.
The control consists of a maximum of 180 observations from 12 banking related firms in the LSE that did not adopt the IFRS standards in 2005. Observations are taken on a yearly basis from 1994 to 2008.
See main table notes for the regression model applied.
Regression coefficients and the related statistics are calculated using OLS regression.

Table 4.16 (Continued)

PANEL C

Time Series Regression Analysis for the Primary Sample Total Liabilities to Market Price Relative Delta ($dL_{t-1, t}$ - $dM_{t-1, t}$) and Historical Value-at-Risk Actual (V_t)

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	-0.569**	-0.371	-0.248
		t (b)	-5.017	-1.315	-1.149
		p (b)	2.4E-04	2.2E-01	2.7E-01
		SE(b)	0.113	0.282	0.216
		Lower	-0.910	-1.287	-0.908
		Upper	-0.227	0.546	0.412
	Intercept	*a*	-0.111*	-0.151*	-0.124*
		t (a)	-2.246	-2.933	-2.663
		p (a)	4.3E-02	1.7E-02	2.1E-02
		SE(a)	0.049	0.052	0.047
		Lower	-0.259	-0.319	-0.267
		Upper	0.038	0.016	0.018
	Model	R^2	0.659	0.161	0.099
		s(e)	0.176	0.169	0.165
		df(e)	13	9	12
Correlation		*r*	-0.812**	-0.401	-0.315
		p(r)	1.2E-04	1.1E-01	1.4E-01
Descriptive Statistics		*dL-dM*	0.166	0.028	0.072
		SD (dL-dM)	0.416	0.190	0.212
		SE(dL-dM)	0.107	0.057	0.057
		V 95	-0.205	-0.162	-0.142
		SD (V 95)	0.291	0.175	0.167
		SE(V 95)	0.075	0.053	0.045
Observations		*Firms (n)*	5	5	5
		Years (T)	15	11	14
		Total (n x T)	75	55	70

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.
The sample consists of a maximum of 75 observations from the 5 banks in the LSE that adopted the IFRS standards in 2005. Observations are taken on a yearly basis from 1994 to 2008.
See main table notes for the regression model applied.
Regression coefficients and the related statistics are calculated using OLS regression.

Table 4.16 (Continued)

PANEL D

Time Series Regression Analysis for the Secondary Sample Total Liabilities to Market Price Relative Delta ($dL_{t-1,\,t}$ - $dM_{t-1,\,t}$) and Historical Value-at-Risk Actual (V_t)

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	-0.463	-0.319	-0.297
		t (b)	-1.934	-1.123	-1.146
		p (b)	7.5E-02	2.9E-01	2.7E-01
		SE(b)	0.240	0.284	0.259
		Lower	-1.185	-1.242	-1.090
		Upper	0.258	0.604	0.495
	Intercept	*a*	-0.135*	-0.162*	-0.121*
		t (a)	-2.509	-2.608	-2.282
		p (a)	2.6E-02	2.8E-02	4.2E-02
		SE(a)	0.054	0.062	0.053
		Lower	-0.298	-0.363	-0.283
		Upper	0.027	0.040	0.041
	Model	R^2	0.223	0.123	0.099
		s(e)	0.205	0.205	0.198
		df(e)	13	9	12
Correlation		*r*	-0.473*	-0.350	-0.314
		p(r)	3.8E-02	1.5E-01	1.4E-01
Descriptive Statistics		*dL-dM*	0.043	0.008	0.016
		SD (dL-dM)	0.229	0.229	0.211
		SE(dL-dM)	0.059	0.069	0.056
		V 95	-0.155	-0.164	-0.126
		SD (V 95)	0.224	0.208	0.200
		SE(V 95)	0.058	0.063	0.053
Observations		*Firms (n)*	11	11	11
		Years (T)	15	11	14
		Total (n x T)	165	121	154

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.
The sample consists of a maximum of 165 observations from 11 banking related firms in the LSE that adopted the IFRS standards in 2005. Observations are taken on a yearly basis from 1994 to 2008.
See main table notes for the regression model applied.
Regression coefficients and the related statistics are calculated using OLS regression.

Analysis

The Table 4.16 Panel A time series regression slope for the Primary and Secondary sample shows that before 2005 there is no statistical significance for the total liabilities to market price relative delta variable and the Historical Value-at-Risk Actual variable. After 2005, the regression slope shows that a 1% change in the total liabilities to market price relative delta variable translates to just above a 0.5% (-0.536) increase in the Historical Value-at-Risk Actual variable.

The time series slopes suggest that for the Primary and Secondary sample the total liabilities to market price relative delta variable reacted significantly to the Historical Value-at-Risk Actual variable after the 2005 accounting change, and does not show a statistically significant reaction before the change. For the Control group the total liabilities to market price relative delta variable does not show a statistically significant reaction to the Historical Value-at-Risk Actual variable before and after 2005.

4.6.4 Regressions for Net income to Market Price Relative Delta and Historical Value-at-Risk Actual

The regression analysis for the net income to market price relative delta and Historical Value-at-Risk Actual is presented for the time range 1994 to 2008 in Table 4.17 (and Table V.4). In the regressions, the Historical Value-at-Risk Actual variable is tested as the dependent variable, and the net income to market price relative delta variable is tested as the independent variable.

Table 4.17 Time Series Regression Analysis for Net Income to Market Price Relative Delta and Historical Value-at-Risk Actual

Time Series Regression

Table 4.17 Panel A to Panel D show the results for the time series regressions that test the net income to market price relative delta and Historical Value-at-Risk Actual by applying the regression specified in equation (3.40). In this table, Panel A presents results for the Primary and Secondary sample; Panel B presents results for the Control group; Panel C presents results for the Primary sample; and, Panel D presents results for the Secondary sample.

Time Series Regression Table Description

The Table 4.17 columns represent the following:

The Total Period column presents the time series regression results for the year range 1994 to 2008, with a single year represented from 1st January to 31st December, with the 31st December selected as the variable record date. The Sub-Periods column presents the time series regression results for the year range 1994 to 2004, and for 1994 to 2007, with a single year represented from 1st January to 31st December, and a 31st December variable record date.

The Measure column represents the time series regression results for the total and sub-time periods and is represented by the following data panels:

The *Regression* panel presents the coefficients and related statistics for the regression specified in equation (3.40), and follows the model:

$$V_{N,\mathrm{t}} = a + b\ (dI - dM)_{N,t} + e_{N,t}$$

Where: $V_{N,t}$ is the Value-at-Risk (V_{t}) for N firms at time t, $(dI - dM)_{N,t}$ is the Total Net Income to Market Price Relative Delta, $(dI_{t-1,t} - dM_{t-1,t})$, for N firms at time t, and $e_{N,t}$ is the regression error term. The *Lower* and *Upper* are the corresponding coefficient levels predicted at a 99% confidence level.

The *Correlation* panel presents the correlation statistics for the relationship between the dependent and independent variables. The *Descriptive Statistics* panel presents for the variables tested, the average sample means calculated using equation (M.6); the standard deviation, *SD*, of sample means for the time series using equation (M.7); and, the standard error of means, *SE*, for the time series. The *Observations* panel presents: *Firms (n)* (term *N* in the regression) that represents the average number of sample firms in the time series regression (for the Primary and Secondary sample, for the time period 1994 to 2004, the number of firms are rounded down); *Years (T)* represents the number of time series years; *Total (n x T)* represents the number of averaged pooled time series regression observations.

Table 4.17 (Continued)

PANEL A

Time Series Regression Analysis for the Primary and Secondary Sample Net Income to Market Price Relative Delta ($dI_{t-1,\,t}$ - $dM_{t-1,\,t}$) and Historical Value-at-Risk Actual (V_t)

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	0.076	0.119*	0.066*
		t (b)	2.054	2.500	2.490
		p (b)	6.1E-02	3.4E-02	2.8E-02
		SE(b)	0.037	0.048	0.026
		Lower	-0.035	-0.036	-0.015
		Upper	0.187	0.275	0.147
	Intercept	*a*	-0.191**	-0.143*	-0.151**
		t (a)	-3.542	-3.215	-3.773
		p (a)	3.6E-03	1.1E-02	2.7E-03
		SE(a)	0.054	0.044	0.040
		Lower	-0.354	-0.287	-0.274
		Upper	-0.029	0.002	-0.029
	Model	R^2	0.245	0.410	0.341
		s(e)	0.205	0.145	0.147
		df(e)	13	9	12
Correlation		*r*	0.495*	0.64*	0.584*
		p(r)	3.0E-02	1.7E-02	1.4E-02
Descriptive Statistics		*dI-dM*	0.281	-0.163	0.320
		SD (dI-dM)	1.489	0.961	1.538
		SE(dI-dM)	0.385	0.290	0.411
		V 95	-0.170	-0.162	-0.130
		SD (V 95)	0.228	0.179	0.173
		SE(V 95)	0.059	0.054	0.046
Observations		*Firms (n)*	16	15	16
		Years (T)	15	11	14
		Total (n x T)	233	169	217

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.
The sample consists of a maximum of 233 observations from 16 firms in the LSE consisting of the 5 banks and 11 banking related firms that adopted the IFRS standards in 2005. Observations are taken on a yearly basis from 1994 to 2008.
See main table notes for the regression model applied.
Regression coefficients and related statistics are calculated using OLS regression.

Table 4.17 (Continued)

PANEL B

Time Series Regression Analysis for the Control Group Net Income to Market Price Relative Delta ($dI_{t-1,\,t}$ - $dM_{t-1,\,t}$) and Historical Value-at-Risk Actual (V_t)

Measure			Total Period 1994-2008	Sub-Periods 1994-2004	Sub-Periods 1994-2007
Regression	*Slope*	*b*	-0.111	0.012	0.015
		t (b)	-0.111	0.012	0.015
		p (b)	2.0E-01	9.2E-01	9.0E-01
		SE(b)	0.083	0.124	0.126
		Lower	-0.361	-0.390	-0.368
		Upper	0.139	0.415	0.399
	Intercept	*a*	-0.151**	-0.176**	-0.133*
		t (a)	-3.384	-3.528	-2.933
		p (a)	4.9E-03	6.4E-03	1.3E-02
		SE(a)	0.045	0.050	0.045
		Lower	-0.286	-0.338	-0.272
		Upper	-0.017	-0.014	0.006
	Model	R^2	0.122	0.001	0.001
		s(e)	0.172	0.163	0.168
		df(e)	13	9	12
Correlation		*r*	-0.349	0.033	0.035
		p(r)	1.0E-01	4.6E-01	4.5E-01
Descriptive Statistics		*dI-dM*	0.047	-0.068	-0.063
		SD (dI-dM)	0.555	0.415	0.370
		SE(dI-dM)	0.143	0.125	0.099
		V 95	-0.156	-0.177	-0.134
		SD (V 95)	0.177	0.155	0.161
		SE(V 95)	0.046	0.047	0.043
Observations		*Firms (n)*	12	12	12
		Years (T)	15	11	14
		Total (n x T)	180	132	168

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels.
The control consists of a maximum of 180 observations from 12 banking related firms in the LSE that did not adopt the IFRS standards in 2005. Observations are taken on a yearly basis from 1994 to 2008.
See main table notes for the regression model applied.
Regression coefficients and the related statistics are calculated using OLS regression.

Table 4.17 (Continued)

PANEL C

Time Series Regression Analysis for the Primary Net Income to Market Price Relative Delta ($dI_{t-1,\,t}$ - $dM_{t-1,\,t}$) and Historical Value-at-Risk Actual (V_t)

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	0.237	0.009	-0.003
		t (b)	1.386	0.070	-0.029
		p (b)	1.9E-01	9.5E-01	9.8E-01
		SE(b)	0.171	0.126	0.117
		Lower	-0.278	-0.400	-0.360
		Upper	0.752	0.417	0.354
	Intercept	*a*	-0.233**	-0.163*	-0.142*
		t (a)	-3.082	-2.742	-2.818
		p (a)	8.7E-03	2.3E-02	1.6E-02
		SE(a)	0.076	0.059	0.050
		Lower	-0.460	-0.356	-0.295
		Upper	-0.005	0.030	0.012
	Model	R^2	0.129	0.001	7.1E-05
		s(e)	0.282	0.184	0.174
		df(e)	13	9	12
Correlation		*r*	0.359	0.023	-0.008
		p(r)	9.5E-02	4.7E-01	4.9E-01
Descriptive Statistics		*dI-dM*	0.117	0.168	0.167
		SD (dI-dM)	0.441	0.464	0.412
		SE(dI-dM)	0.114	0.140	0.110
		V 95	-0.205	-0.162	-0.142
		SD (V 95)	0.291	0.175	0.167
		SE(V 95)	0.075	0.053	0.045
Observations		*Firms (n)*	5	5	5
		Years (T)	15	11	14
		Total (n x T)	75	55	70

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels.
The sample consists of a maximum of 75 observations from the 5 banks in the LSE that adopted the IFRS standards in 2005. Observations are taken on a yearly basis from 1994 to 2008.
See main table notes for the regression model applied.
Regression coefficients and the related statistics are calculated using OLS regression.

Table 4.17 (Continued)

PANEL D

Time Series Regression Analysis for the Secondary Sample Net Income to Market Price Relative Delta ($dI_{t-1, t}$ - $dM_{t-1, t}$) and Historical Value-at-Risk Actual (V_t)

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	0.053	0.089*	0.05*
		t (b)	2.156	2.302	2.352
		p (b)	5.0E-02	4.7E-02	3.7E-02
		SE(b)	0.025	0.038	0.021
		Lower	-0.021	-0.036	-0.015
		Upper	0.127	0.214	0.115
	Intercept	*a*	-0.174**	-0.136*	-0.145**
		t (a)	-3.330	-2.530	-3.105
		p (a)	5.4E-03	3.2E-02	9.1E-03
		SE(a)	0.052	0.054	0.047
		Lower	-0.331	-0.311	-0.288
		Upper	-0.017	0.039	-0.002
	Model	R^2	0.263	0.371	0.316
		s(e)	0.2	0.174	0.172
		df(e)	13	9	12
Correlation		*r*	0.513*	0.609*	0.562*
		p(r)	2.5E-02	2.3E-02	1.8E-02
Descriptive Statistics		*dI-dM*	0.354	-0.315	0.388
		SD (dI-dM)	2.170	1.431	2.248
		SE(dI-dM)	0.560	0.431	0.601
		V 95	-0.155	-0.164	-0.126
		SD (V 95)	0.224	0.208	0.200
		SE(V 95)	0.058	0.063	0.053
Observations		*Firms (n)*	11	11	11
		Years (T)	15	11	14
		Total (n x T)	165	121	154

Panel notes:

**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.

The sample consists of a maximum of 165 observations from 11 banking related firms in the LSE that adopted the IFRS standards in 2005. Observations are taken on a yearly basis from 1994 to 2008.

See main table notes for the regression model applied.

Regression coefficients and the related statistics are calculated using OLS regression.

Analysis

The Table 4.17 time series regression slopes show that the net income to market price relative delta variable exhibits statistically significant explanatory power to the Historical Value-at-Risk Actual variable for the Primary and Secondary sample for the 1994 to 2004 and 1994 to 2007 time periods. The Control group does not exhibit statistical significance for the three time series periods.

The Table 4.17 panel A time series regression slope for the Primary and Secondary sample shows that before 2005, a 1% change in the net income to market price relative delta variable translates to just above a 0.1% (0.119) decrease in the Historical Value-at-Risk Actual variable. After 2005, the regression slope shows that for the 1994 to 2007 time period, a 1% change in the net income to market price relative delta variable relates to nearly a 0% (0.066) level in the Historical Value-at-Risk Actual variable.

The time series slopes suggest that for the Primary and Secondary sample the net income to market price relative delta variable reacted significantly to the Historical Value-at-Risk Actual variable before and just after the 2005 accounting change. For the Control group the net income to market price relative delta variable does not show a statistically significant reaction to the Historical Value-at-Risk Actual variable before and after 2005.

4.7 Accounting Value-at-Risk Estimates and Relationships

The analysis and detailed results for the *accounting Value-at-Risk*[46] estimates are presented in this section. In addition, an analysis for the relationship between accounting Value-at-Risk, market price return Value-at-Risk measured using the Historical Value-at-Risk Actual, and the relative delta is also presented.

4.7.1 Estimates for Accounting Value-at-Risk

The analysis and results for the accounting Value-at-Risk estimates are presented on a yearly basis for the time range 1994 to 2008 in Table 4.19. In this table, Panel A presents results for the Primary and Secondary sample; Panel B presents results for the

[46] This study refers to the *accounting Value-at-Risk* measure also as the *change in accounting total Value-at-Risk* or the *change in accounting totals Value-at-Risk*.

Control group; Panel C presents results for the Primary sample; and, Panel D presents results for the Secondary sample. Table 4.18 presents relative percentage change results for Table 4.19.

Table 4.18 Percentage Changes for Accounting Value-at-Risk Results from Table 4.19

Percentage Change Analysis Table Description

Accounting Value-at-Risk estimated levels in Table 4.19 for the samples and the control group, for the time period: 1994 to 2004 - before the 2005 accounting change, and the time periods: 1994 to 2007; and 1994 to 2008 - after the accounting change, analysed using relative percentage changes are presented in Table 4.18.

In Table 4.18, the Accounting Value-at-Risk column represents the Description and Symbol columns that describes and *codes* the accounting Value-at-Risk measures. The Year column represents the beginning (From) and ending (To) year applied to calculate the percentage changes presented in the Percentage Change column. The Percentage Change column represents the accounting Value-at-Risk percentage changes rounded to the nearest whole number. The PS column presents the percentage changes for the Primary and Secondary sample. The C column presents the percentage changes for the Control group. The P column presents the percentage changes for the Primary sample. The S column presents the percentage changes for the Secondary sample.

Accounting Value-at-Risk		Year	Percentage Change (%)			
Description	Symbol	From - To	PS	C	P	S
Total Equity Value-at-Risk	V_E	1994 - 2004	-228	52	-127	-328
		1994 - 2007	-36	-308	-17	-59
		1994 - 2008	-148	-1,436	-16	-286
Total Assets Value-at-Risk	V_A	1994 - 2004	-412	-2,100	-61	-4,433
		1994 - 2007	292	-6,600	133	1,533
		1994 - 2008	-208	-21,950	283	-6,967
Total Liabilities Value-at-Risk	V_L	1994 - 2004	-198	-139	-56	-255
		1994 - 2007	44	-216	140	7
		1994 - 2008	-81	-148	305	-234
Net Income Value-at-Risk	V_I	1994 - 2004	-80	170	-62	-217
		1994 - 2007	44	6	-97	970
		1994 - 2008	-348	3,500	-237	-1,001

Table 4.19 Estimates for Accounting Value-at-Risk from Relative Delta and Historical Value-at-Risk Actual

Table Description

The Table 4.19 columns represent the following:

The Year column represents the fiscal accounting year. Record Date is the date the variable values are recorded. *Obs.* represents the number of sample firms observed for the year.

For the Relative Delta Measures column:
E-M column represents the total equity to market price relative delta for the *year* time period $t-1$ to t calculated by applying equation (3.38); *A-M* column represents the total assets to market price relative delta for the *year* time period $t-1$ to t calculated by applying equation (3.38); *L-M* column represents the total liabilities to market price relative delta for the *year* time period $t-1$ to t calculated by applying equation (3.38); and, *I-M* column represents the net income to market price relative delta for the *year* time period $t-1$ to t calculated by applying equation (3.38).

The *V 95* column represents the Historical Value-at-Risk Actual, V_M, calculated at the 95% confidence level by applying equation (N.34).

For the Accounting V Estimates column:
V_E and *(E-M)+*V_M column represents the estimates for the Total Equity Value-at-Risk Actual at the 95% confidence level for the *year* time period $t-1$ to t calculated by applying equation (3.44), and takes the general form:

$$V_{E:i,t} = \delta EM_{i,t} + V_{M:i,t}$$

Where: $V_{E:i,t}$ is the Total Equity Value-at-Risk ($V_{E:t}$) for the i^{th} firms at time t, $\delta EM_{i,t}$ is the Total Equity to Market Price Relative Delta ($dE_{t-1,t} - dM_{t-1,t}$) for the i^{th} firm at time t, and $V_{M:i,t}$ is the Market Price Value-at-Risk (V_t) for the i^{th} firm at time t.

V_A and *(A-M)+*V_M column represents the estimates for the Total Assets Value-at-Risk Actual at the 95% confidence level for the *year* time period $t-1$ to t calculated by applying equation (3.44), and takes the general form:

$$V_{A:i,t} = \delta AM_{i,t} + V_{M:i,t}$$

Where: $V_{A:i,t}$ is the Total Assets Value-at-Risk ($V_{A:t}$) for the i^{th} firms at time t, $\delta AM_{i,t}$ is the Total Assets to Market Price Relative Delta ($dA_{t-1,t} - dM_{t-1,t}$) for the i^{th} firm at time t, and $V_{M:i,t}$ is the Market Price Value-at-Risk (V_t) for the i^{th} firm at time t.

V_L and *(L-M)+*V_M column represents the estimates for the Total Liabilities Value-at-Risk Actual at the 95% confidence level for the *year* time period $t-1$ to t calculated by applying equation (3.44), and takes the general form:

$$V_{L:i,t} = \delta LM_{i,t} + V_{M:i,t}$$

Where: $V_{L:i,t}$ is the Total Liabilities Value-at-Risk ($V_{L:t}$) for the i^{th} firms at time t, $\delta LM_{i,t}$ is the Total Liabilities to Market Price Relative Delta ($dL_{t-1,t} - dM_{t-1,t}$) for the i^{th} firm at time t, and $V_{M:i,t}$ is the Market Price Value-at-Risk (V_t) for the i^{th} firm at time t.

V_I and *(I-M)+*V_M column represents the estimates for the Net Income Value-at-Risk Actual at the 95% confidence level for the *year* time period $t-1$ to t calculated by applying equation (3.44), and takes the general form:

$$V_{I:i,t} = \delta IM_{i,t} + V_{M:i,t}$$

Where: $V_{I:i,t}$ is the Net Income Value-at-Risk ($V_{I:t}$) for the i^{th} firms at time t, $\delta IM_{i,t}$ is the Net Income to Market Price Relative Delta ($dI_{t-1,t} - dM_{t-1,t}$) for the i^{th} firm at time t, and $V_{M:i,t}$ is the Market Price Value-at-Risk (V_t) for the i^{th} firm at time t.

Table 4.19 (Continued)

PANEL A

Estimates for Accounting Value-at-Risk for the Primary and Secondary Sample from Relative Delta and Historical Value-at-Risk Actual

Year	Record Date	*Obs.*	*Relative Delta Measures*				*V 95*	*Accounting V Estimates*			
			E-M	*A-M*	*L-M*	*I-M*	V_M	V_E	V_A	V_L	V_I
								$(E\text{-}M)+V_M$	$(A\text{-}M)+V_M$	$(L\text{-}M)+V_M$	$(I\text{-}M)+V_M$
1994	30-Dec-1994	15	0.058	-0.014	0.068	0.360	0.040	0.098	0.026	0.108	0.401
1995	29-Dec-1995	16	0.196	-0.007	0.003	0.295	-0.183	0.012	-0.190	-0.181	0.111
1996	31-Dec-1996	16	0.083	0.012	-0.024	0.246	0.014	0.096	0.026	-0.011	0.260
1997	31-Dec-1997	16	-0.033	-0.137	-0.194	-0.290	0.007	-0.026	-0.130	-0.187	-0.283
1998	31-Dec-1998	16	0.037	0.036	0.035	0.311	-0.104	-0.068	-0.068	-0.070	0.207
1999	31-Dec-1999	16	-0.085	-0.165	-0.263	-0.052	-0.107	-0.192	-0.272	-0.370	-0.159
2000	29-Dec-2000	16	0.244	-0.020	0.025	-0.004	-0.135	0.109	-0.155	-0.110	-0.139
2001	31-Dec-2001	16	0.244	0.222	0.289	-0.079	-0.296	-0.053	-0.074	-0.007	-0.376
2002	31-Dec-2002	16	0.354	0.363	0.412	0.239	-0.414	-0.060	-0.051	-0.002	-0.175
2003	31-Dec-2003	16	-0.123	-0.178	-0.173	-2.994	-0.517	-0.640	-0.695	-0.690	-3.512
2004	31-Dec-2004	16	-0.034	0.009	-0.016	0.172	-0.090	-0.125	-0.081	-0.106	0.081
2005	30-Dec-2005	16	0.066	0.104	0.152	4.606	0.014	0.080	0.118	0.166	4.619
2006	29-Dec-2006	16	-0.027	-0.041	-0.101	0.980	0.063	0.036	0.023	-0.038	1.043
2007	31-Dec-2007	16	0.176	0.215	0.268	0.690	-0.113	0.063	0.102	0.155	0.577
2008	31-Dec-2008	16	0.682	0.702	0.749	-0.266	-0.730	-0.047	-0.028	0.020	-0.996

Panel notes: The *Relative Delta Measures* and the *V 95* measure are based on sample averages. The sample consists of a maximum of 16 observations per year from 16 firms in the LSE consisting of the 5 banks and 11 banking related firms that adopted the IFRS standards in 2005. The highlighted record identifies the samples IFRS accounting standards adoption year.

Table 4.19 (Continued)

PANEL B

Estimates for Accounting Value-at-Risk for the Control Group from Relative Delta and Historical Value-at-Risk Actual

Year	Record Date	*Obs.*	*Relative Delta Measures*				*V 95*	*Accounting V Estimates*			
			E-M	*A-M*	*L-M*	*I-M*	V_M	V_E $(E\text{-}M)+V_M$	V_A $(A\text{-}M)+V_M$	V_L $(L\text{-}M)+V_M$	V_I $(I\text{-}M)+V_M$
1994	30-Dec-1994	12	0.073	0.100	0.360	0.065	-0.098	-0.025	0.002	0.262	-0.033
1995	29-Dec-1995	12	0.062	0.024	0.210	-0.022	-0.188	-0.126	-0.164	0.022	-0.210
1996	31-Dec-1996	12	0.138	0.069	0.006	0.074	-0.031	0.107	0.038	-0.025	0.044
1997	31-Dec-1997	12	0.025	-0.006	-0.076	-0.040	-0.049	-0.023	-0.054	-0.125	-0.089
1998	31-Dec-1998	12	0.066	0.065	0.320	0.354	-0.240	-0.174	-0.174	0.080	0.114
1999	31-Dec-1999	12	0.091	-0.069	-0.112	-1.257	-0.172	-0.081	-0.242	-0.284	-1.430
2000	29-Dec-2000	12	-0.048	-0.055	0.076	0.048	-0.016	-0.064	-0.072	0.060	0.031
2001	31-Dec-2001	12	-0.013	-0.013	-0.014	0.184	-0.303	-0.316	-0.316	-0.317	-0.119
2002	31-Dec-2002	12	0.034	0.032	0.241	-0.054	-0.383	-0.349	-0.351	-0.142	-0.436
2003	31-Dec-2003	12	0.039	-0.050	-0.258	-0.135	-0.456	-0.416	-0.505	-0.713	-0.591
2004	31-Dec-2004	12	-0.005	-0.033	-0.094	0.031	-0.007	-0.012	-0.040	-0.101	0.023
2005	30-Dec-2005	12	-0.048	-0.121	-0.306	-0.229	0.057	0.009	-0.064	-0.249	-0.172
2006	29-Dec-2006	12	-0.050	-0.067	0.011	0.087	0.054	0.005	-0.012	0.065	0.142
2007	31-Dec-2007	12	-0.052	-0.080	-0.254	0.019	-0.050	-0.102	-0.130	-0.304	-0.031
2008	31-Dec-2008	12	0.080	0.028	0.338	1.586	-0.464	-0.384	-0.437	-0.127	1.122

Panel notes: The *Relative Delta Measures* and the *V 95* measure are based on the Control group averages. The Control group consists of a maximum of 12 observations per year from 12 banking related firms in the LSE that did not adopt the IFRS standards in 2005. The highlighted record identifies the samples IFRS accounting standards adoption year.

Table 4.19 (Continued)

PANEL C

Estimates for Accounting Value-at-Risk for the Primary Sample from Relative Delta and Historical Value-at-Risk Actual

Year	Record Date	*Obs.*	*Relative Delta Measures*				*V 95*	*Accounting V Estimates*			
			E-M	*A-M*	*L-M*	*I-M*	V_M	V_E $(E\text{-}M)+V_M$	V_A $(A\text{-}M)+V_M$	V_L $(L\text{-}M)+V_M$	V_I $(I\text{-}M)+V_M$
1994	30-Dec-1994	4	0.185	0.118	0.117	1.229	-0.019	0.166	0.099	0.097	1.210
1995	29-Dec-1995	5	0.044	-0.112	-0.117	0.050	-0.222	-0.178	-0.335	-0.339	-0.172
1996	31-Dec-1996	5	-0.072	-0.106	-0.108	0.021	0.118	0.046	0.012	0.010	0.139
1997	31-Dec-1997	5	-0.231	-0.183	-0.179	-0.375	0.056	-0.175	-0.127	-0.123	-0.319
1998	31-Dec-1998	5	0.064	0.048	0.048	0.069	-0.371	-0.307	-0.323	-0.323	-0.303
1999	31-Dec-1999	5	-0.111	-0.209	-0.213	-0.184	-0.116	-0.227	-0.325	-0.328	-0.300
2000	29-Dec-2000	5	1.086	0.345	0.334	0.453	-0.312	0.773	0.032	0.021	0.140
2001	31-Dec-2001	5	0.158	0.127	0.125	-0.033	-0.162	-0.004	-0.035	-0.037	-0.195
2002	31-Dec-2002	5	0.205	0.313	0.321	-0.334	-0.323	-0.117	-0.010	-0.001	-0.656
2003	31-Dec-2003	5	-0.062	-0.105	-0.108	0.447	-0.382	-0.444	-0.487	-0.490	0.065
2004	31-Dec-2004	5	0.002	0.085	0.089	0.504	-0.045	-0.044	0.039	0.043	0.458
2005	30-Dec-2005	5	0.095	0.267	0.277	0.251	-0.007	0.089	0.261	0.271	0.244
2006	29-Dec-2006	5	0.007	-0.028	-0.030	-0.021	0.017	0.025	-0.011	-0.013	-0.003
2007	31-Dec-2007	5	0.363	0.456	0.458	0.259	-0.225	0.138	0.231	0.233	0.034
2008	31-Dec-2008	5	1.222	1.462	1.476	-0.576	-1.083	0.139	0.379	0.393	-1.659

Panel notes: The *Relative Delta Measures* and the *V 95* measure are based on sample averages. The sample consists of a maximum of 5 observations per year from the 5 banks in the LSE that adopted the IFRS standards in 2005. The highlighted record identifies the samples IFRS accounting standards adoption year.

Table 4.19 (Continued)

PANEL D

Estimates for Accounting Value-at-Risk for the Secondary Sample from Relative Delta and Historical Value-at-Risk Actual

Year	Record Date	*Obs.*	*Relative Delta Measures*				*V 95*	*Accounting V Estimates*			
			E-M	*A-M*	*L-M*	*I-M*	V_M	V_E $(E\text{-}M)+V_M$	V_A $(A\text{-}M)+V_M$	V_L $(L\text{-}M)+V_M$	V_I $(I\text{-}M)+V_M$
1994	30-Dec-1994	11	0.007	-0.067	0.048	0.013	0.064	0.071	-0.003	0.112	0.077
1995	29-Dec-1995	11	0.256	0.035	0.051	0.392	-0.168	0.088	-0.133	-0.117	0.225
1996	31-Dec-1996	11	0.139	0.055	0.006	0.328	-0.024	0.115	0.031	-0.018	0.304
1997	31-Dec-1997	11	0.039	-0.121	-0.200	-0.259	-0.011	0.029	-0.131	-0.210	-0.270
1998	31-Dec-1998	11	0.027	0.032	0.030	0.399	-0.007	0.020	0.025	0.023	0.392
1999	31-Dec-1999	11	-0.073	-0.146	-0.286	0.008	-0.103	-0.176	-0.249	-0.389	-0.095
2000	29-Dec-2000	11	-0.139	-0.185	-0.116	-0.212	-0.054	-0.193	-0.240	-0.170	-0.266
2001	31-Dec-2001	11	0.283	0.265	0.364	-0.100	-0.357	-0.075	-0.092	0.007	-0.458
2002	31-Dec-2002	11	0.422	0.386	0.454	0.500	-0.456	-0.034	-0.070	-0.002	0.044
2003	31-Dec-2003	11	-0.150	-0.211	-0.202	-4.559	-0.579	-0.729	-0.790	-0.781	-5.138
2004	31-Dec-2004	11	-0.051	-0.025	-0.063	0.021	-0.111	-0.162	-0.136	-0.174	-0.090
2005	30-Dec-2005	11	0.053	0.030	0.095	6.586	0.023	0.076	0.053	0.118	6.608
2006	29-Dec-2006	11	-0.043	-0.046	-0.134	1.434	0.084	0.042	0.038	-0.049	1.519
2007	31-Dec-2007	11	0.090	0.105	0.181	0.885	-0.061	0.029	0.043	0.120	0.824
2008	31-Dec-2008	11	0.437	0.356	0.419	-0.126	-0.569	-0.132	-0.212	-0.150	-0.694

Panel notes: The *Relative Delta Measures* and the *V 95* measure are based on sample averages. The sample consists of a maximum of 11 observations per year from 11 banking related firms in the LSE that adopted the IFRS standards in 2005. The highlighted 2005 record identified the IFRS implementation event year for the adopting firms.

Analysis

Table 4.19 presents estimates for the accounting Historical Value-at-Risk Actual measure, referred to as the accounting Value-at-Risk. The accounting Value-at-Risk measure estimated in this study by definition is an equivalent measurement to the market price return Historical Value-at-Risk Actual specified in Appendix N.8.

The Table 4.19 Primary and Secondary sample accounting Value-at-Risk estimates suggest that, after the 2005 accounting change compared to before, there was a marginally significant decrease in average accounting Value-at-Risk estimates. The only exception is the net income Value-at-Risk estimates that shows a significant material increase. The market price return Historical Value-at-Risk Actual generally exhibits varying levels after 2005. However, materially significant increases are reported after 2005.

The Control group estimates of accounting Value-at-Risk exhibit varying levels after 2005, with a significant material decrease reported for the net income Value-at-Risk in 2008. The market price return Historical Value-at-Risk Actual also exhibits varying levels. However, a materially significant increase after 2005, in 2008, is reported.

Further examination of these results suggest that generally for the Primary and Secondary sample there is a wider and materially significant difference between accounting Value-at-Risk and market price Value-at-Risk after the 2005 accounting change than before. The Control group, however, shows that the accounting Value-at-Risk better reflects the market price Value-at-Risk after 2005 compared to before. The exception for both the samples and the control group is the difference between net income Value-at-Risk and market price Value-at-Risk that exhibits a *widening* after 2005. The evidence from the relative percentage changes for before and after 2005, presented in Table 4.18, suggest support for these findings.

4.7.2 Relationship Between Accounting Value-at-Risk, Historical Value-at-Risk Actual and Relative Delta

The arithmetic difference between accounting Value-at-Risk and market price Value-at-Risk and the relationship of this *arithmetic difference* to the relative delta measure is presented, on a yearly basis for the time range 1994 to 2008, in Table 4.20. In this table, Panel A presents results for the Primary and Secondary sample; Panel B presents results for the Control group; Panel C presents results for the Primary sample; and, Panel D presents results for the Secondary sample.

Table 4.20 Relationship Between the Difference in Accounting Value-at-Risk and Historical Value-at-Risk Actual to Relative Delta

Table Description

The Table 4.20 Panel A to Panel D columns represent the following:

The Year column represents the fiscal accounting year. Record Date is the date the variable values are recorded. *Obs.* represents the number of sample firms observed for the year.

For the *Accounting V* column:
V_E column represents the estimates for the Total Equity Value-at-Risk Actual at the 95% confidence level for the *year* time period $t-1$ to t calculated by applying equation (3.44); V_A column represents the estimates for the Total Assets Value-at-Risk Actual at the 95% confidence level for the *year* time period $t-1$ to t calculated by applying equation (3.44); V_L column represents the estimates for the Total Liabilities Value-at-Risk Actual at the 95% confidence level for the year time period $t-1$ to t calculated by applying equation (3.44); and, V_I column represents the estimates for the Net Income Value-at-Risk Actual at the 95% confidence level for the *year* time period $t-1$ to t calculated by applying equation (3.44).

The *V 95* column represents the Historical Value-at-Risk Actual, V_M, calculated at the 95% confidence level by applying equation (N.34).

V_E-V_M and *E-M* column represents the Total Equity to Market Price Relative Delta for the *year* time period $t-1$ to t calculated by applying equation (3.45), and takes the general form:

$$V_{E:i,t} - V_{M:i,t} = \delta EM_{i,t}$$

Where: $V_{E:i,t}$ is the Total Equity Value-at-Risk ($V_{E:t}$) for the i^{th} firms at time t, $V_{M:i,t}$ is the Market Price Value-at-Risk (V_t) for the i^{th} firms at time t, and $\delta EM_{i,t}$ is the Total Equity to Market Price Relative Delta ($dE_{t-1,t} - dM_{t-1,t}$) for the i^{th} firm at time t.

V_A-V_M and *A-M* column represents the Total Assets to Market Price Relative Delta for the *year* time period $t-1$ to t calculated by applying equation (3.45), and takes the general form:

$$V_{A:i,t} - V_{M:i,t} = \delta AM_{i,t}$$

Where: $V_{A:i,t}$ is the Total Assets Value-at-Risk ($V_{A:t}$) for the i^{th} firms at time t, $V_{M:i,t}$ is the Market Price Value-at-Risk (V_t) for the i^{th} firms at time t, and $\delta AM_{i,t}$ is the Total Assets to Market Price Relative Delta ($dA_{t-1,t} - dM_{t-1,t}$) for the i^{th} firm at time t.

V_L-V_M and *L-M* column represents the Total Liabilities to Market Price Relative Delta for the *year* time period $t-1$ to t calculated by applying equation (3.45), and takes the general form:

$$V_{L:i,t} - V_{M:i,t} = \delta LM_{i,t}$$

Where: $V_{L:i,t}$ is the Total Liabilities Value-at-Risk ($V_{L:t}$) for the i^{th} firms at time t, $V_{M:i,t}$ is the Market Price Value-at-Risk (V_t) for the i^{th} firms at time t, and $\delta LM_{i,t}$ is the Total Liabilities to Market Price Relative Delta ($dL_{t-1,t} - dM_{t-1,t}$) for the i^{th} firm at time t.

V_I-V_M and *I-M* column represents the Net Income to Market Price Relative Delta for the *year* time period $t-1$ to t calculated by applying equation (3.45), and takes the general form:

$$V_{I:i,t} - V_{M:i,t} = \delta IM_{i,t}$$

Where: $V_{I:i,t}$ is the Net Income Value-at-Risk ($V_{I:t}$) for the i^{th} firms at time t, $V_{M:i,t}$ is the Market Price Value-at-Risk (V_t) for the i^{th} firms at time t, and $\delta IM_{i,t}$ is the Net Income to Market Price Relative Delta ($dI_{t-1,1} - dM_{t-1,t}$) for the i^{th} firm at time t.

Table 4.20 (Continued)

PANEL A

Relationship for the Primary and Secondary Sample Between the Difference in Accounting Value-at-Risk and Historical Value-at-Risk Actual to Relative Delta

			Accounting V				*V 95*	*Accounting V - Market V*			
Year	Record Date	*Obs.*	V_E	V_A	V_L	V_I	V_M	V_E-V_M	V_A-V_M	V_L-V_M	V_I-V_M
								E-M	*A-M*	*L-M*	*I-M*
1994	30-Dec-1994	15	0.098	0.026	0.108	0.401	0.040	0.058	-0.014	0.068	0.360
1995	29-Dec-1995	16	0.012	-0.190	-0.181	0.111	-0.183	0.196	-0.007	0.003	0.295
1996	31-Dec-1996	16	0.096	0.026	-0.011	0.260	0.014	0.083	0.012	-0.024	0.246
1997	31-Dec-1997	16	-0.026	-0.130	-0.187	-0.283	0.007	-0.033	-0.137	-0.194	-0.290
1998	31-Dec-1998	16	-0.068	-0.068	-0.070	0.207	-0.104	0.037	0.036	0.035	0.311
1999	31-Dec-1999	16	-0.192	-0.272	-0.370	-0.159	-0.107	-0.085	-0.165	-0.263	-0.052
2000	29-Dec-2000	16	0.109	-0.155	-0.110	-0.139	-0.135	0.244	-0.020	0.025	-0.004
2001	31-Dec-2001	16	-0.053	-0.074	-0.007	-0.376	-0.296	0.244	0.222	0.289	-0.079
2002	31-Dec-2002	16	-0.060	-0.051	-0.002	-0.175	-0.414	0.354	0.363	0.412	0.239
2003	31-Dec-2003	16	-0.640	-0.695	-0.690	-3.512	-0.517	-0.123	-0.178	-0.173	-2.994
2004	31-Dec-2004	16	-0.125	-0.081	-0.106	0.081	-0.090	-0.034	0.009	-0.016	0.172
2005	30-Dec-2005	16	0.080	0.118	0.166	4.619	0.014	0.066	0.104	0.152	4.606
2006	29-Dec-2006	16	0.036	0.023	-0.038	1.043	0.063	-0.027	-0.041	-0.101	0.980
2007	31-Dec-2007	16	0.063	0.102	0.155	0.577	-0.113	0.176	0.215	0.268	0.690
2008	31-Dec-2008	16	-0.047	-0.028	0.020	-0.996	-0.730	0.682	0.702	0.749	-0.266

Panel notes: The *Accounting V* and *V95* measures are based on sample averages. The sample consists of a maximum of 16 observations per year from 16 firms in the LSE consisting of the 5 banks and 11 banking related firms that adopted the IFRS standards in 2005. The highlighted record identifies the samples IFRS accounting standards adoption year.

Table 4.20 (Continued)

PANEL B

Relationship for the Control Group Between the Difference in Accounting Value-at-Risk and Historical Value-at-Risk Actual to Relative Delta

Year	Record Date	*Obs.*	*Accounting V*				*V 95*	*Accounting V - Market V*			
			V_E	V_A	V_L	V_I	V_M	V_E-V_M *E-M*	V_A-V_M *A-M*	V_L-V_M *L-M*	V_I-V_M *I-M*
1994	30-Dec-1994	12	-0.025	0.002	0.262	-0.033	-0.098	0.073	0.100	0.360	0.065
1995	29-Dec-1995	12	-0.126	-0.164	0.022	-0.210	-0.188	0.062	0.024	0.210	-0.022
1996	31-Dec-1996	12	0.107	0.038	-0.025	0.044	-0.031	0.138	0.069	0.006	0.074
1997	31-Dec-1997	12	-0.023	-0.054	-0.125	-0.089	-0.049	0.025	-0.006	-0.076	-0.040
1998	31-Dec-1998	12	-0.174	-0.174	0.080	0.114	-0.240	0.066	0.065	0.320	0.354
1999	31-Dec-1999	12	-0.081	-0.242	-0.284	-1.430	-0.172	0.091	-0.069	-0.112	-1.257
2000	29-Dec-2000	12	-0.064	-0.072	0.060	0.031	-0.016	-0.048	-0.055	0.076	0.048
2001	31-Dec-2001	12	-0.316	-0.316	-0.317	-0.119	-0.303	-0.013	-0.013	-0.014	0.184
2002	31-Dec-2002	12	-0.349	-0.351	-0.142	-0.436	-0.383	0.034	0.032	0.241	-0.054
2003	31-Dec-2003	12	-0.416	-0.505	-0.713	-0.591	-0.456	0.039	-0.050	-0.258	-0.135
2004	31-Dec-2004	12	-0.012	-0.040	-0.101	0.023	-0.007	-0.005	-0.033	-0.094	0.031
2005	30-Dec-2005	12	0.009	-0.064	-0.249	-0.172	0.057	-0.048	-0.121	-0.306	-0.229
2006	29-Dec-2006	12	0.005	-0.012	0.065	0.142	0.054	-0.050	-0.067	0.011	0.087
2007	31-Dec-2007	12	-0.102	-0.130	-0.304	-0.031	-0.050	-0.052	-0.080	-0.254	0.019
2008	31-Dec-2008	12	-0.384	-0.437	-0.127	1.122	-0.464	0.080	0.028	0.338	1.586

Panel notes: The *Accounting V* and *V95* measures are based on the Control group averages. The Control group consists of a maximum of 12 observations per year from 12 banking related firms in the LSE that did not adopt the IFRS standards in 2005. The highlighted record identifies the samples IFRS accounting standards adoption year.

Table 4.20 (Continued)

PANEL C

Relationship for the Primary Sample Between the Difference in Accounting Value-at-Risk and Historical Value-at-Risk Actual to Relative Delta

Year	Record Date	*Obs.*	*Accounting V*				*V 95*	*Accounting V - Market V*			
			V_E	V_A	V_L	V_I	V_M	V_E-V_M *E-M*	V_A-V_M *A-M*	V_L-V_M *L-M*	V_I-V_M *I-M*
1994	30-Dec-1994	4	0.166	0.099	0.097	1.210	-0.019	0.185	0.118	0.117	1.229
1995	29-Dec-1995	5	-0.178	-0.335	-0.339	-0.172	-0.222	0.044	-0.112	-0.117	0.050
1996	31-Dec-1996	5	0.046	0.012	0.010	0.139	0.118	-0.072	-0.106	-0.108	0.021
1997	31-Dec-1997	5	-0.175	-0.127	-0.123	-0.319	0.056	-0.231	-0.183	-0.179	-0.375
1998	31-Dec-1998	5	-0.307	-0.323	-0.323	-0.303	-0.371	0.064	0.048	0.048	0.069
1999	31-Dec-1999	5	-0.227	-0.325	-0.328	-0.300	-0.116	-0.111	-0.209	-0.213	-0.184
2000	29-Dec-2000	5	0.773	0.032	0.021	0.140	-0.312	1.086	0.345	0.334	0.453
2001	31-Dec-2001	5	-0.004	-0.035	-0.037	-0.195	-0.162	0.158	0.127	0.125	-0.033
2002	31-Dec-2002	5	-0.117	-0.010	-0.001	-0.656	-0.323	0.205	0.313	0.321	-0.334
2003	31-Dec-2003	5	-0.444	-0.487	-0.490	0.065	-0.382	-0.062	-0.105	-0.108	0.447
2004	31-Dec-2004	5	-0.044	0.039	0.043	0.458	-0.045	0.002	0.085	0.089	0.504
2005	30-Dec-2005	5	0.089	0.261	0.271	0.244	-0.007	0.095	0.267	0.277	0.251
2006	29-Dec-2006	5	0.025	-0.011	-0.013	-0.003	0.017	0.007	-0.028	-0.030	-0.021
2007	31-Dec-2007	5	0.138	0.231	0.233	0.034	-0.225	0.363	0.456	0.458	0.259
2008	31-Dec-2008	5	0.139	0.379	0.393	-1.659	-1.083	1.222	1.462	1.476	-0.576

Panel notes: The *Accounting V* and *V95* measures are based on sample averages. The sample consists of a maximum of 5 observations per year from the 5 banks in the LSE that adopted the IFRS standards in 2005. The highlighted record identifies the samples IFRS accounting standards adoption year.

Table 4.20 (Continued)

PANEL D

Relationship for the Secondary Sample Between the Difference in Accounting Value-at-Risk and Historical Value-at-Risk Actual to Relative Delta

Year	Record Date	*Obs.*	*Accounting V*				*V 95*	*Accounting V - Market V*			
			V_E	V_A	V_L	V_I	V_M	V_E-V_M	V_A-V_M	V_L-V_M	V_I-V_M
								E-M	*A-M*	*L-M*	*I-M*
1994	30-Dec-1994	11	0.071	-0.003	0.112	0.077	0.064	0.007	-0.067	0.048	0.013
1995	29-Dec-1995	11	0.088	-0.133	-0.117	0.225	-0.168	0.256	0.035	0.051	0.392
1996	31-Dec-1996	11	0.115	0.031	-0.018	0.304	-0.024	0.139	0.055	0.006	0.328
1997	31-Dec-1997	11	0.029	-0.131	-0.210	-0.270	-0.011	0.039	-0.121	-0.200	-0.259
1998	31-Dec-1998	11	0.020	0.025	0.023	0.392	-0.007	0.027	0.032	0.030	0.399
1999	31-Dec-1999	11	-0.176	-0.249	-0.389	-0.095	-0.103	-0.073	-0.146	-0.286	0.008
2000	29-Dec-2000	11	-0.193	-0.240	-0.170	-0.266	-0.054	-0.139	-0.185	-0.116	-0.212
2001	31-Dec-2001	11	-0.075	-0.092	0.007	-0.458	-0.357	0.283	0.265	0.364	-0.100
2002	31-Dec-2002	11	-0.034	-0.070	-0.002	0.044	-0.456	0.422	0.386	0.454	0.500
2003	31-Dec-2003	11	-0.729	-0.790	-0.781	-5.138	-0.579	-0.150	-0.211	-0.202	-4.559
2004	31-Dec-2004	11	-0.162	-0.136	-0.174	-0.090	-0.111	-0.051	-0.025	-0.063	0.021
2005	30-Dec-2005	11	0.076	0.053	0.118	6.608	0.023	0.053	0.030	0.095	6.586
2006	29-Dec-2006	11	0.042	0.038	-0.049	1.519	0.084	-0.043	-0.046	-0.134	1.434
2007	31-Dec-2007	11	0.029	0.043	0.120	0.824	-0.061	0.090	0.105	0.181	0.885
2008	31-Dec-2008	11	-0.132	-0.212	-0.150	-0.694	-0.569	0.437	0.356	0.419	-0.126

Panel notes: The *Accounting V* and *V95* are based on sample averages. The sample consists of a maximum of 11 observations per year from 11 banking related firms in the LSE that adopted the IFRS standards in 2005. The highlighted 2005 record identified the IFRS implementation event year for the adopting firms.

Analysis

Table 4.20 presents results for the difference between the accounting totals Historical Value-at-Risk Actual estimates and the market price return Historical Value-at-Risk Actual and its relation to the accounting total to market price relative delta. Examining Table 4.20, it is evident that a measure for the difference between the accounting Value-at-Risk and market price return Value-at-Risk is shown to be equivalent to the relative delta measure.

The results presented in Table 4.20 are produced from the accounting Historical Value-at-Risk Actual estimates presented in Table 4.19 and the accounting to market price relative delta results presented in Table 4.13.

4.8 Relative Delta Measures for UK Banks

The analysis and results for the change in key accounting variables, market price returns and the relative delta measure for the UK banks are presented on a yearly basis for the time range 1994 to 2008 in this section. In this section, Table 4.22 Panel A presents results for HSBC Holdings PLC; Panel B presents results for Barclays PLC; Panel C presents results for The Royal Bank of Scotland Group PLC; Panel D presents results for Lloyds Banking Group PLC; and, Panel E presents results for Standard Chartered PLC. Table 4.21 presents relative percentage change results for Table 4.22.

Table 4.21 Percentage Changes for Relative Delta Measure Results for UK Banks from Table 4.22

Percentage Change Analysis Table Description

The banks' relative delta levels in Table 4.22 for time period: 1994 to 2004 - before the 2005 accounting change, and the time periods: 1994 to 2007; and 1994 to 2008 - after the accounting change, analysed using relative percentage changes are presented in Table 4.21.

In Table 4.21, the Relative Delta column represents the Description and Symbol columns that describes and *codes* the relative delta measures. The Year column represents the beginning (From) and ending (To) year applied to calculate the percentage changes presented in the Percentage Change column. The Percentage Change column represents the relative delta percentage changes rounded to the nearest whole number. The H column presents the percentage changes for HSBC Holdings PLC. The B column presents the percentage changes for Barclays PLC. The R column presents the percentage changes for The Royal Bank of Scotland Group PLC. The L column presents the percentage changes for Lloyds Banking Group PLC. The S column presents the percentage changes for Standard Chartered PLC.

Relative Delta		Year	Percentage Change (%)				
Description	Symbol	From - To	H	B	R	L	S
Total Equity to Market Price	*(E-M)*	1994 - 2004	-83	-149	133	-100	-110
		1994 - 2007	-45	172	431	8	-98
		1994 - 2008	-52	685	1,077	321	285
Total Assets to Market Price	*(A-M)*	1994 - 2004	-53	-95	1,263	-100	-74
		1994 - 2007	6	2,942	7,481	50	-109
		1994 - 2008	113	8,726	14,169	947	608
Total Liabilities to Market Price	*(L-M)*	1994 - 2004	-50	-73	3,317	-100	-71
		1994 - 2007	12	3,760	19,867	55	-109
		1994 - 2008	127	11,120	37,867	994	633
Net Income to Market Price	*(I-M)*	1994 - 2004	-88	-101	137	-100	-62
		1994 - 2007	-39	-94	-51	2	-100
		1994 - 2008	-322	-41	-556	61	142

Table 4.22 Relative Delta Measures for UK Banks

Table Description

The Table 4.22 Panel A to Panel E columns represent the following:

The Year column represents the fiscal accounting year. Record Date is the date the variable values are recorded. *Obs.* represents the number of sample firms observed for the year.

For the Change in Variables (Variable Delta) column:
E and $dE_{t-1,t}$ column represents the relative change in the total equity variable for the *year* time period $t-1$ to t calculated by applying equation (3.34); *A* and $dA_{t-1,t}$ column represents the log change in total assets for the *year* time period $t-1$ to t calculated by applying equation (3.33); *L* and $dL_{t-1,t}$ column represents the log change in total liabilities for the *year* time period $t-1$ to t calculated by applying equation (3.33); *I* and $dI_{t-1,t}$ column represents the relative change in the net income variable for the *year* time period $t-1$ to t calculated by applying equation (3.34); and *M* and $dM_{t-1,t}$ column represents the market price return specified by the log change in market price for the *year* time period $t-1$ to t and calculated by applying equation (3.35).

For the Relative Delta Measures column:
E-M column represents the total Equity to Market Price Relative Delta for the *year* time period $t-1$ to t calculated by applying equation (3.38) for one firm, and takes the general form:

$$\delta EM_t = dE_{i,t} - dM_t$$

Where: δEM_t is the Total Equity to Market Price Relative Delta at time t, dE_t is the change in Total Equity ($dE_{t-1,t}$) at time t, and dM_t is the log change in market price ($dM_{t-1,t}$) at time t.

A-M column represents the Total Assets to Market Price Relative Delta for the *year* time period $t-1$ to t calculated by applying equation (3.38) for one firm, and takes the general form:

$$\delta AM_t = dA_t - dM_t$$

Where: δAM_t is the Total Assets to Market Price Relative Delta at time t, dA_t is the log change in Total Assets ($dA_{t-1,t}$) at time t, and dM_t is the log change in market price ($dM_{t-1,t}$) at time t.

L-M column represents the Total Liabilities to Market Price Relative Delta for the *year* time period $t-1$ to t calculated by applying equation (3.38) for one firm, and takes the general form:

$$\delta LM_t = dL_t - dM_t$$

Where: δLM_t is the Total Liabilities to Market Price Relative Delta at time t, dL_t is the log change in Total Liabilities ($dL_{t-1,t}$) at time t, and dM_t is the log change in market price ($dM_{t-1,t}$) at time t.

I-M column represents the net income to market price relative delta for the *year* time period $t-1$ to t calculated by applying equation (3.38) for one firm, and takes the general form:

$$\delta IM_t = dI_t - dM_t$$

Where: δIM_t is the Net Income to Market Price Relative Delta at time *t*, dI_t is the change in Net Income ($dI_{t-1,t}$) at time *t*, and dM_t is the log change in market price ($dM_{t-1,t}$) at time *t*.

Table 4.22 (Continued)

PANEL A
Relative Delta Measures for HSBC Holdings PLC

Year	Record Date	Change in Variables (Variable Delta)					*Relative Delta Measures*			
		E	*A*	*L*	*I*	*M*	*E-M*	*A-M*	*L-M*	*I-M*
		$dE_{t-1,t}$	$dA_{t-1,t}$	$dL_{t-1,t}$	$dI_{t-1,t}$	$dM_{t-1,t}$				
1994	30-Dec-1994	0.156	-0.022	-0.032	0.137	-0.285	0.477	0.299	0.289	0.458
1995	29-Dec-1995	0.927	0.558	0.552	0.896	0.363	0.573	0.205	0.198	0.542
1996	31-Dec-1996	0.251	0.140	0.134	0.258	0.272	-0.010	-0.121	-0.127	-0.003
1997	31-Dec-1997	-0.368	-0.347	-0.338	-0.315	0.183	-0.545	-0.524	-0.516	-0.493
1998	31-Dec-1998	0.002	0.014	0.015	-0.227	0.054	-0.042	-0.030	-0.028	-0.270
1999	31-Dec-1999	0.258	0.196	0.194	0.293	1.624	-0.204	-0.267	-0.269	-0.170
2000	29-Dec-2000	0.454	0.244	0.230	0.323	0.222	0.322	0.112	0.098	0.190
2001	31-Dec-2001	0.036	0.058	0.061	-0.163	-0.190	0.236	0.258	0.262	0.038
2002	31-Dec-2002	0.033	-0.014	-0.017	-0.528	-0.148	0.193	0.146	0.144	-0.368
2003	31-Dec-2003	0.291	0.202	0.196	0.459	0.392	0.045	-0.044	-0.050	0.213
2004	31-Dec-2004	0.085	0.142	0.146	0.054	0.020	0.083	0.140	0.145	0.053
2005	30-Dec-2005	0.193	0.275	0.288	0.654	0.074	0.134	0.215	0.229	0.594
2006	29-Dec-2006	0.028	0.083	0.087	-0.232	0.019	0.030	0.085	0.089	-0.230
2007	31-Dec-2007	0.163	0.218	0.222	0.179	-0.079	0.263	0.318	0.323	0.279
2008	31-Dec-2008	-0.012	0.396	0.415	-1.256	-0.217	0.229	0.636	0.656	-1.016

Panel note: The highlighted record identifies the IFRS accounting standards 2005 adoption year.

Table 4.22 (Continued)

PANEL B
Relative Delta Measures for Barclays PLC

Year	Record Date	Change in Variables (Variable Delta)					*Relative Delta Measures*			
		E	*A*	*L*	*I*	*M*	*E-M*	*A-M*	*L-M*	*I-M*
		$dE_{t-1,t}$	$dA_{t-1,t}$	$dL_{t-1,t}$	$dI_{t-1,t}$	$dM_{t-1,t}$				
1994	30-Dec-1994	0.160	-0.022	-0.026	2.767	-0.033	0.201	0.019	0.015	2.808
1995	29-Dec-1995	0.141	0.039	0.035	0.157	0.183	-0.050	-0.152	-0.156	-0.034
1996	31-Dec-1996	0.034	0.097	0.100	0.202	0.252	-0.269	-0.206	-0.203	-0.101
1997	31-Dec-1997	0.043	0.232	0.240	-0.311	0.469	-0.438	-0.249	-0.241	-0.791
1998	31-Dec-1998	0.040	-0.067	-0.071	0.181	-0.230	0.262	0.155	0.151	0.403
1999	31-Dec-1999	0.076	0.149	0.152	0.318	0.308	-0.243	-0.169	-0.166	-0.001
2000	29-Dec-2000	0.555	0.216	0.203	0.406	0.258	0.404	0.065	0.053	0.255
2001	31-Dec-2001	0.100	0.120	0.121	-0.003	0.098	0.007	0.027	0.027	-0.097
2002	31-Dec-2002	0.045	0.122	0.131	-0.596	-0.391	0.435	0.512	0.521	-0.205
2003	31-Dec-2003	0.081	0.095	0.096	0.365	0.240	-0.177	-0.163	-0.162	0.107
2004	31-Dec-2004	0.064	0.164	0.166	0.140	0.145	-0.099	0.001	0.004	-0.022
2005	30-Dec-2005	0.001	0.571	0.579	0.035	0.047	-0.041	0.529	0.538	-0.007
2006	29-Dec-2006	0.136	0.075	0.074	0.410	0.185	-0.042	-0.103	-0.104	0.232
2007	31-Dec-2007	0.176	0.208	0.209	-0.212	-0.360	0.547	0.578	0.579	0.158
2008	31-Dec-2008	0.415	0.514	0.520	0.494	-0.952	1.578	1.677	1.683	1.657

Panel note: The highlighted record identifies the IFRS accounting standards 2005 adoption year.

Table 4.22 (Continued)

PANEL C

Relative Delta Measures for The Royal Bank of Scotland Group PLC

Year	Record Date	Change in Variables (Variable Delta)					*Relative Delta Measures*			
		E	*A*	*L*	*I*	*M*	*E-M*	*A-M*	*L-M*	*I-M*
		$dE_{t-1,t}$	$dA_{t-1,t}$	$dL_{t-1,t}$	$dI_{t-1,t}$	$dM_{t-1,t}$				
1994	30-Sep-1994	0.021	0.222	0.232	1.381	0.247	-0.218	-0.016	-0.006	1.143
1995	29-Sep-1995	0.118	0.119	0.119	0.063	0.087	0.037	0.038	0.038	-0.018
1996	30-Sep-1996	0.159	0.180	0.179	0.247	0.095	0.076	0.097	0.096	0.164
1997	30-Sep-1997	0.212	0.172	0.171	0.041	0.403	-0.133	-0.173	-0.174	-0.304
1998	30-Sep-1998	-0.029	0.093	0.100	0.394	-0.018	0.001	0.123	0.130	0.424
1999	30-Sep-1999	0.423	0.109	0.098	0.218	0.684	-0.242	-0.556	-0.567	-0.447
2000	29-Dec-2000	4.501	1.281	1.255	0.905	1.294	4.229	1.010	0.983	0.633
2001	31-Dec-2001	0.195	0.142	0.139	0.264	0.118	0.140	0.087	0.084	0.209
2002	31-Dec-2002	-0.021	0.111	0.118	-0.660	-0.102	0.096	0.227	0.234	-0.543
2003	31-Dec-2003	0.039	0.100	0.103	-0.102	0.125	-0.062	-0.001	0.002	-0.203
2004	31-Dec-2004	0.134	0.248	0.255	2.772	0.131	0.072	0.186	0.193	2.710
2005	30-Dec-2005	0.112	0.286	0.300	0.329	0.006	0.110	0.284	0.298	0.328
2006	29-Dec-2006	0.135	0.115	0.111	0.128	0.115	0.008	-0.012	-0.016	0.001
2007	31-Dec-2007	0.318	0.778	0.783	0.163	-0.345	0.721	1.181	1.186	0.565
2008	31-Dec-2008	0.110	0.233	0.248	-7.226	-0.824	2.129	2.251	2.266	-5.208

Panel note: The highlighted record identifies the IFRS accounting standards 2005 adoption year.

Table 4.22 (Continued)

PANEL D
Relative Delta Measures for Lloyds Banking Group PLC

Year	Record Date	Change in Variables (Variable Delta)					*Relative Delta Measures*			
		E	*A*	*L*	*I*	*M*	*E-M*	*A-M*	*L-M*	*I-M*
		$dE_{t-1,t}$	$dA_{t-1,t}$	$dL_{t-1,t}$	$dI_{t-1,t}$	$dM_{t-1,t}$				
1994	30-Sep-1994	-	-	-	-	-	-	-	-	-
1995	29-Sep-1995	-	-	-	-	-	-	-	-	-
1996	30-Sep-1996	-	-	-	-	-	-	-	-	-
1997	30-Sep-1997	-	-	-	-	-	-	-	-	-
1998	31-Dec-1998	-	-	-	-	-	-	-	-	-
1999	31-Dec-1999	0.162	0.047	0.042	0.186	-0.092	0.260	0.146	0.141	0.285
2000	29-Dec-2000	0.121	0.213	0.216	0.084	-0.085	0.211	0.303	0.306	0.173
2001	31-Dec-2001	0.106	0.082	0.079	-0.082	0.066	0.054	0.029	0.027	-0.135
2002	31-Dec-2002	-0.259	0.066	0.082	-0.733	-0.513	0.255	0.581	0.597	-0.218
2003	31-Dec-2003	0.210	-0.003	-0.010	2.142	0.006	0.205	-0.007	-0.014	2.138
2004	31-Dec-2004	0.037	0.105	0.108	-0.363	0.055	-0.018	0.050	0.054	-0.417
2005	30-Dec-2005	0.022	0.102	0.105	-0.028	0.033	-0.010	0.069	0.073	-0.060
2006	29-Dec-2006	0.094	0.104	0.105	0.221	0.163	-0.063	-0.053	-0.052	0.064
2007	31-Dec-2007	0.088	0.028	0.026	0.101	-0.189	0.280	0.219	0.218	0.292
2008	31-Dec-2008	-0.226	0.208	0.222	-0.861	-0.904	1.094	1.529	1.542	0.460

Panel note: The highlighted record identifies the IFRS accounting standards 2005 adoption year.

Table 4.22 (Continued)

PANEL E
Relative Delta Measures for Standard Chartered PLC

Year	Record Date	Change in Variables (Variable Delta)					*Relative Delta Measures*			
		E	*A*	*L*	*I*	*M*	*E-M*	*A-M*	*L-M*	*I-M*
		$dE_{t-1,t}$	$dA_{t-1,t}$	$dL_{t-1,t}$	$dI_{t-1,t}$	$dM_{t-1,t}$				
1994	30-Dec-1994	0.180	0.071	0.067	0.406	-0.095	0.281	0.172	0.168	0.508
1995	29-Dec-1995	0.288	0.129	0.123	0.379	0.676	-0.382	-0.540	-0.547	-0.291
1996	31-Dec-1996	0.187	0.079	0.074	0.297	0.284	-0.084	-0.193	-0.198	0.026
1997	31-Dec-1997	0.091	0.113	0.115	-0.014	-0.091	0.192	0.214	0.215	0.087
1998	31-Dec-1998	0.105	0.014	0.009	-0.213	0.077	0.035	-0.055	-0.060	-0.282
1999	31-Dec-1999	0.194	0.123	0.120	-0.266	0.380	-0.128	-0.199	-0.202	-0.588
2000	29-Dec-2000	0.266	0.237	0.232	1.015	0.065	0.262	0.233	0.228	1.012
2001	31-Dec-2001	0.190	0.073	0.062	-0.343	-0.159	0.353	0.235	0.224	-0.181
2002	31-Dec-2002	-0.103	-0.052	-0.040	-0.484	-0.116	0.047	0.098	0.110	-0.334
2003	31-Dec-2003	-0.053	-0.044	-0.046	0.250	0.272	-0.320	-0.311	-0.314	-0.017
2004	31-Dec-2004	0.019	0.094	0.097	0.243	0.052	-0.029	0.045	0.049	0.194
2005	30-Dec-2005	0.575	0.529	0.538	0.690	0.389	0.285	0.238	0.248	0.399
2006	29-Dec-2006	0.244	0.082	0.073	-0.029	0.204	0.103	-0.060	-0.068	-0.171
2007	31-Dec-2007	0.216	0.196	0.197	0.214	0.228	0.005	-0.015	-0.015	0.002
2008	31-Dec-2008	0.470	0.604	0.618	0.615	-0.448	1.082	1.217	1.231	1.227

Panel note: The highlighted record identifies the IFRS accounting standards 2005 adoption year.

Analysis

Table 4.22 present accounting totals to market price relative delta results for the UK banks.

These tables bank level relative delta measures suggest that there is a greater average difference between the change in accounting total variables and the change in the market price variable after the 2005 accounting change than before. In these results, some *difference component* levels exhibit material significance. For after 2005, the only decrease in this *difference component* is reported from the net income to market price relative delta measure for HSBC Holdings PLC, The Royal Bank of Scotland Group PLC and Lloyds Banking Group PLC.

Examining the *absolute* average bank level relative deltas in Table 4.22 Panel A to Panel E for before and after 2005 suggest that the banks experienced, in general, greater materially significant levels of the *difference component* after the 2005 accounting change than before. The evidence from the relative percentage changes for before and after 2005, presented in Table 4.21, suggest support for this finding.

4.9 Estimates of Accounting Value-at-Risk for UK Banks

The accounting Value-at-Risk estimates are presented for the UK banks on a yearly basis for the time range 1994 to 2008 in Table 4.24. Table 4.24 Panel A presents results for HSBC Holdings PLC; Panel B presents results for Barclays PLC; Panel C presents results for The Royal Bank of Scotland Group PLC; Panel D presents results for Lloyds Banking Group PLC; and, Panel E presents results for Standard Chartered PLC. Table 4.23 presents relative percentage change results for Table 4.24.

Table 4.23 Percentage Changes for Accounting Value-at-Risk Results for UK Banks from Table 4.24

Percentage Change Analysis Table Description

The banks accounting Value-at-Risk estimates in Table 4.24 for the time period: 1994 to 2004 - before the 2005 accounting change, and the time periods: 1994 to 2007; and 1994 to 2008 - after the accounting change, analysed using relative percentage changes are presented in Table 4.23.

In Table 4.23, the Accounting Value-at-Risk column represents the Description and Symbol columns that describes and *codes* the relative delta measures. The Year column represents the beginning (From) and ending (To) year applied to calculate the percentage changes presented in the Percentage Change column. The Percentage Change column represents the accounting Value-at-Risk percentage changes rounded to the nearest whole number. The H column presents the percentage changes for HSBC Holdings PLC. The B column presents the percentage changes for Barclays PLC. The R column presents the percentage changes for The Royal Bank of Scotland Group PLC. The L column presents the percentage changes for Lloyds Banking Group PLC. The S column presents the percentage changes for Standard Chartered PLC.

Accounting Value-at-Risk		Year	Percentage Change (%)				
Description	Symbol	From - To	H	B	R	L	S
Total Equity Value-at-Risk	V_E	1994 - 2004	-70	-171	-128	-249	-100
		1994 - 2007	-39	19	524	-19	-113
		1994 - 2008	-100	142	204	-233	45
Total Assets Value-at-Risk	V_A	1994 - 2004	98	21	-59	-1,229	-30
		1994 - 2007	212	1,284	202	486	-145
		1994 - 2008	526	2,695	6	4,257	326
Total Liabilities Value-at-Risk	V_L	1994 - 2004	144	48	-58	-650	-23
		1994 - 2007	278	1,083	192	317	-147
		1994 - 2008	675	2,265	8	2,633	357
Net Income Value-at-Risk	V_I	1994 - 2004	-82	-101	87	-524	-49
		1994 - 2007	-27	-107	-91	-24	-107
		1994 - 2008	-656	-83	-612	-690	3
Market Price Value-at-Risk	V_M	1994 - 2004	95	58	-132	6	141
		1994 - 2007	51	-829	-265	-25	53
		1994 - 2008	2	-3,018	-856	-709	-1,037

Table 4.24 Estimates of Accounting Value-at-Risk from Relative Delta and Historical Value-at-Risk Actual for UK Banks

Table Description

The Table 4.24 Panel A to Panel E columns represent the following:

The Year column represents the fiscal accounting year. Record Date is the date the variable values are recorded. *Obs.* represents the number of sample firms observed for the year.

For the Relative Delta Measures column:
E-M column represents the total equity to market price relative delta for the *year* time period $t-1$ to t calculated by applying equation (3.38) for one firm; *A-M* column represents the total assets to market price relative delta for the *year* time period $t-1$ to t calculated by applying equation (3.38) for one firm; *L-M* column represents the total liabilities to market price relative delta for the *year* time period $t-1$ to t calculated by applying equation (3.38) for one firm; and, *I-M* column represents the net income to market price relative delta for the *year* time period $t-1$ to t calculated by applying equation (3.38) for one firm.

The *V 95* column represents the Historical Value-at-Risk Actual, V_M, calculated at the 95% confidence level by applying equation (N.34).

For the Accounting V Estimates column:
V_E column represents the estimates for the Total Equity Value-at-Risk Actual at the 95% confidence level for the *year* time period $t-1$ to t calculated by applying equation (3.44), and takes the general form:

$$V_{E:t} = \delta EM_t + V_{M:t}$$

Where: $V_{E:t}$ is the Total Equity Value-at-Risk at time t, δEM_t is the Total Equity to Market Price Relative Delta $(dE_{t-1,t} - dM_{t-1,t})$ at time t, and $V_{M:i,t}$ is the Market Price Value-at-Risk (V_t) at time t.

V_A column represents the estimates for the Total Assets Value-at-Risk Actual at the 95% confidence level for the *year* time period $t-1$ to t calculated by applying equation (3.44), and takes the general form:

$$V_{A:t} = \delta AM_t + V_{M:t}$$

Where: $V_{A:t}$ is the Total Assets Value-at-Risk at time t, δAM_t is the Total Assets to Market Price Relative Delta $(dA_{t-1,t} - dM_{t-1,t})$ at time t, and $V_{M:i,t}$ is the Market Price Value-at-Risk (V_t) at time t.

V_L column represents the estimates for the Total Liabilities Value-at-Risk Actual at the 95% confidence level for the *year* time period $t-1$ to t calculated by applying equation (3.44), and takes the general form:

$$V_{L:t} = \delta LM_t + V_{M:t}$$

Where: $V_{L:t}$ is the Total Liabilities Value-at-Risk at time t, δLM_t is the Total Liabilities to Market Price Relative Delta $(dL_{t-1,t} - dM_{t-1,t})$ at time t, and $V_{M:t}$ is the Market Price Value-at-Risk (V_t) at time t.

V_I column represents the estimates for the Net Income Value-at-Risk Actual at the 95% confidence level for the *year* time period $t-1$ to t calculated by applying equation (3.44), and takes the general form:

$$V_{I:t} = \delta IM_t + V_{M:t}$$

Where: $V_{I:t}$ is the Net Income Value-at-Risk at time t, δIM_t is the Net Income to Market Price Relative Delta $(dI_{t-1,t} - dM_{t-1,t})$ at time t, and $V_{M:t}$ is the Market Price Value-at-Risk (V_t) at time t.

Table 4.24 (Continued)

PANEL A

Estimates for HSBC Holdings PLC Accounting Value-at-Risk from Relative Delta and Historical Value-at-Risk Actual

Year	Record Date	*Relative Delta Accounting V - Market V*				*V 95*	*Accounting V*			
		E-M	*A-M*	*L-M*	*I-M*					
		V_E-V_M	V_A-V_M	V_L-V_M	V_I-V_M	V_M	V_E	V_A	V_L	V_I
1994	30-Dec-1994	0.477	0.299	0.289	0.458	-0.234	0.243	0.065	0.055	0.224
1995	29-Dec-1995	0.573	0.205	0.198	0.542	-0.404	0.169	-0.200	-0.206	0.138
1996	31-Dec-1996	-0.010	-0.121	-0.127	-0.003	0.158	0.148	0.037	0.032	0.156
1997	31-Dec-1997	-0.545	-0.524	-0.516	-0.493	0.140	-0.405	-0.384	-0.375	-0.352
1998	31-Dec-1998	-0.042	-0.030	-0.028	-0.270	-0.588	-0.630	-0.619	-0.617	-0.859
1999	31-Dec-1999	-0.204	-0.267	-0.269	-0.170	-0.074	-0.279	-0.342	-0.343	-0.244
2000	29-Dec-2000	0.322	0.112	0.098	0.190	-0.077	0.244	0.035	0.021	0.113
2001	31-Dec-2001	0.236	0.258	0.262	0.038	-0.314	-0.077	-0.055	-0.052	-0.276
2002	31-Dec-2002	0.193	0.146	0.144	-0.368	-0.285	-0.092	-0.139	-0.141	-0.653
2003	31-Dec-2003	0.045	-0.044	-0.050	0.213	-0.217	-0.173	-0.261	-0.267	-0.004
2004	31-Dec-2004	0.083	0.140	0.145	0.053	-0.011	0.072	0.129	0.134	0.041
2005	30-Dec-2005	0.134	0.215	0.229	0.594	-0.018	0.115	0.197	0.210	0.576
2006	29-Dec-2006	0.030	0.085	0.089	-0.230	-0.008	0.023	0.078	0.081	-0.237
2007	31-Dec-2007	0.263	0.318	0.323	0.279	-0.115	0.148	0.203	0.208	0.164
2008	31-Dec-2008	0.229	0.636	0.656	-1.016	-0.230	-0.001	0.407	0.426	-1.245

Panel note: The highlighted record identifies the IFRS accounting standards 2005 adoption year.

Table 4.24 (Continued)

PANEL B

Estimates for Barclays PLC Accounting Value-at-Risk from Relative Delta and Historical Value-at-Risk Actual

Year	Record Date	*Relative Delta Accounting V - Market V*				*V 95*	*Accounting V*			
		E-M V_E-V_M	*A-M* V_A-V_M	*L-M* V_L-V_M	*I-M* V_I-V_M	V_M	V_E	V_A	V_L	V_I
1994	30-Dec-1994	0.201	0.019	0.015	2.808	-0.038	0.163	-0.019	-0.023	2.770
1995	29-Dec-1995	-0.050	-0.152	-0.156	-0.034	-0.054	-0.104	-0.206	-0.210	-0.088
1996	31-Dec-1996	-0.269	-0.206	-0.203	-0.101	0.094	-0.175	-0.113	-0.110	-0.008
1997	31-Dec-1997	-0.438	-0.249	-0.241	-0.791	0.249	-0.189	0.001	0.008	-0.542
1998	31-Dec-1998	0.262	0.155	0.151	0.403	-0.413	-0.151	-0.258	-0.262	-0.010
1999	31-Dec-1999	-0.243	-0.169	-0.166	-0.001	-0.296	-0.539	-0.465	-0.463	-0.297
2000	29-Dec-2000	0.404	0.065	0.053	0.255	-0.201	0.203	-0.136	-0.149	0.054
2001	31-Dec-2001	0.007	0.027	0.027	-0.097	0.006	0.013	0.033	0.034	-0.090
2002	31-Dec-2002	0.435	0.512	0.521	-0.205	-0.360	0.075	0.153	0.161	-0.565
2003	31-Dec-2003	-0.177	-0.163	-0.162	0.107	-0.450	-0.627	-0.613	-0.612	-0.343
2004	31-Dec-2004	-0.099	0.001	0.004	-0.022	-0.016	-0.115	-0.015	-0.012	-0.038
2005	30-Dec-2005	-0.041	0.529	0.538	-0.007	0.002	-0.039	0.531	0.539	-0.005
2006	29-Dec-2006	-0.042	-0.103	-0.104	0.232	0.018	-0.024	-0.085	-0.086	0.250
2007	31-Dec-2007	0.547	0.578	0.579	0.158	-0.353	0.194	0.225	0.226	-0.195
2008	31-Dec-2008	1.578	1.677	1.683	1.657	-1.185	0.394	0.493	0.498	0.472

Panel note: The highlighted record identifies the IFRS accounting standards 2005 adoption year.

Table 4.24 (Continued)

PANEL C

Estimates for The Royal Bank of Scotland PLC Accounting Value-at-Risk from Relative Delta and Historical Value-at-Risk Actual

Year	Record Date	*Relative Delta Accounting V - Market V*				*V 95*	*Accounting V*			
		E-M	*A-M*	*L-M*	*I-M*	V_M	V_E	V_A	V_L	V_I
		V_E-V_M	V_A-V_M	V_L-V_M	V_I-V_M					
1994	30-Sep-1994	-0.218	-0.016	-0.006	1.143	0.263	0.046	0.247	0.257	1.406
1995	29-Sep-1995	0.037	0.038	0.038	-0.018	-0.208	-0.171	-0.170	-0.170	-0.225
1996	30-Sep-1996	0.076	0.097	0.096	0.164	0.048	0.125	0.145	0.145	0.212
1997	30-Sep-1997	-0.133	-0.173	-0.174	-0.304	-0.104	-0.237	-0.277	-0.278	-0.408
1998	30-Sep-1998	0.001	0.123	0.130	0.424	0.162	0.163	0.285	0.292	0.586
1999	30-Sep-1999	-0.242	-0.556	-0.567	-0.447	0.052	-0.190	-0.504	-0.515	-0.395
2000	29-Dec-2000	4.229	1.010	0.983	0.633	-0.521	3.709	0.489	0.462	0.112
2001	31-Dec-2001	0.140	0.087	0.084	0.209	0.007	0.147	0.094	0.091	0.216
2002	31-Dec-2002	0.096	0.227	0.234	-0.543	-0.197	-0.101	0.031	0.037	-0.740
2003	31-Dec-2003	-0.062	-0.001	0.002	-0.203	-0.275	-0.337	-0.276	-0.273	-0.478
2004	31-Dec-2004	0.072	0.186	0.193	2.710	-0.084	-0.013	0.101	0.108	2.625
2005	30-Dec-2005	0.110	0.284	0.298	0.328	-0.048	0.063	0.237	0.250	0.280
2006	29-Dec-2006	0.008	-0.012	-0.016	0.001	-0.027	-0.019	-0.039	-0.043	-0.026
2007	31-Dec-2007	0.721	1.181	1.186	0.565	-0.434	0.287	0.747	0.751	0.131
2008	31-Dec-2008	2.129	2.251	2.266	-5.208	-1.989	0.140	0.262	0.277	-7.196

Panel note: The highlighted record identifies the IFRS accounting standards 2005 adoption year.

Table 4.24 (Continued)

PANEL D

Estimates for Lloyds Banking Group PLC Accounting Value-at-Risk from Relative Delta and Historical Value-at-Risk Actual

Year	Record Date	*Relative Delta Accounting V - Market V*				*V 95*	*Accounting V*			
		E-M V_E-V_M	*A-M* V_A-V_M	*L-M* V_L-V_M	*I-M* V_I-V_M	V_M	V_E	V_A	V_L	V_I
1994	30-Sep-1994	-	-	-	-	-	-	-	-	-
1995	29-Sep-1995	-	-	-	-	-	-	-	-	-
1996	30-Sep-1996	-	-	-	-	-	-	-	-	-
1997	30-Sep-1997	-	-	-	-	-	-	-	-	-
1998	31-Dec-1998	-	-	-	-	-	-	-	-	-
1999	31-Dec-1999	0.260	0.146	0.141	0.285	-0.153	0.108	-0.007	-0.012	0.132
2000	29-Dec-2000	0.211	0.303	0.306	0.173	-0.500	-0.289	-0.197	-0.195	-0.327
2001	31-Dec-2001	0.054	0.029	0.027	-0.135	-0.119	-0.065	-0.089	-0.092	-0.253
2002	31-Dec-2002	0.255	0.581	0.597	-0.218	-0.462	-0.207	0.118	0.134	-0.681
2003	31-Dec-2003	0.205	-0.007	-0.014	2.138	-0.767	-0.562	-0.775	-0.782	1.370
2004	31-Dec-2004	-0.018	0.050	0.054	-0.417	-0.144	-0.161	-0.093	-0.090	-0.560
2005	30-Dec-2005	-0.010	0.069	0.073	-0.060	0.004	-0.007	0.073	0.077	-0.056
2006	29-Dec-2006	-0.063	-0.053	-0.052	0.064	0.022	-0.041	-0.031	-0.030	0.086
2007	31-Dec-2007	0.280	0.219	0.218	0.292	-0.192	0.088	0.027	0.026	0.100
2008	31-Dec-2008	1.094	1.529	1.542	0.460	-1.238	-0.144	0.291	0.304	-0.779

Panel note: The highlighted record identifies the IFRS accounting standards 2005 adoption year.

Table 4.24 (Continued)

PANEL E

Estimates for Standard Chartered PLC Accounting Value-at-Risk from Relative Delta and Historical Value-at-Risk Actual

Year	Record Date	*Relative Delta Accounting V - Market V*				*V 95*	*Accounting V*			
		E-M V_E-V_M	*A-M* V_A-V_M	*L-M* V_L-V_M	*I-M* V_I-V_M	V_M	V_E	V_A	V_L	V_I
1994	30-Dec-1994	0.281	0.172	0.168	0.508	-0.068	0.213	0.104	0.100	0.439
1995	29-Dec-1995	-0.382	-0.540	-0.547	-0.291	-0.223	-0.605	-0.764	-0.770	-0.514
1996	31-Dec-1996	-0.084	-0.193	-0.198	0.026	0.172	0.088	-0.021	-0.026	0.198
1997	31-Dec-1997	0.192	0.214	0.215	0.087	-0.060	0.132	0.154	0.155	0.027
1998	31-Dec-1998	0.035	-0.055	-0.060	-0.282	-0.646	-0.610	-0.701	-0.706	-0.928
1999	31-Dec-1999	-0.128	-0.199	-0.202	-0.588	-0.106	-0.235	-0.305	-0.309	-0.695
2000	29-Dec-2000	0.262	0.233	0.228	1.012	-0.261	0.001	-0.029	-0.033	0.750
2001	31-Dec-2001	0.353	0.235	0.224	-0.181	-0.391	-0.039	-0.156	-0.167	-0.572
2002	31-Dec-2002	0.047	0.098	0.110	-0.334	-0.308	-0.261	-0.210	-0.199	-0.643
2003	31-Dec-2003	-0.320	-0.311	-0.314	-0.017	-0.201	-0.521	-0.512	-0.515	-0.218
2004	31-Dec-2004	-0.029	0.045	0.049	0.194	0.028	-0.001	0.073	0.077	0.222
2005	30-Dec-2005	0.285	0.238	0.248	0.399	0.028	0.313	0.266	0.276	0.427
2006	29-Dec-2006	0.103	-0.060	-0.068	-0.171	0.081	0.184	0.021	0.013	-0.089
2007	31-Dec-2007	0.005	-0.015	-0.015	0.002	-0.032	-0.027	-0.047	-0.047	-0.030
2008	31-Dec-2008	1.082	1.217	1.231	1.227	-0.773	0.309	0.443	0.457	0.454

Panel note: The highlighted record identifies the IFRS accounting standards 2005 adoption year.

Analysis

Table 4.24 Panel A to Panel E present *accounting Historical Value-at-Risk Actual*, referred to as the *accounting Value-at-Risk*, estimates for the UK banks. As stated earlier in Section 4.7.1, Analysis, the banks accounting Value-at-Risk measure estimated in this study by definition, is an equivalent measurement to the market price return Historical Value-at-Risk Actual specified in Appendix N.8.

The Table 4.24 bank accounting Value-at-Risk estimates suggest varying accounting Value-at-Risk levels for before and after the 2005 accounting change. The results suggest that the banks experienced significant material decreases in total assets Value-at-Risk and total liabilities Value-at-Risk after 2005 compared to before. The total equity Value-at-Risk and net-income Value-at-Risk levels, however, exhibited both increases and decreases.

Generally, all the banks exhibited increases in market price return Historical Value-at-Risk Actual and mainly decreases in accounting Value-at-Risk after 2005 compared to before. The evidence from the relative percentage changes for before and after 2005, presented in Table 4.23, suggest support for this finding

4.10 Regulatory Relative Delta Framework: Estimates for Minimum Regulatory Capital for UK Banks

The adjusted Basel (2011) minimum regulatory capital requirement, estimated by the proposed regulatory relative delta framework (see Sections 3.9.6, Appendix K and Appendix L), is presented for the UK banks on a yearly basis for the time range 1994 to 2008 in Table 4.27. In this table, Panel A presents results for HSBC Holdings PLC; Panel B presents results for Barclays PLC; Panel C presents results for The Royal Bank of Scotland PLC; Panel D presents results for Lloyds Banking Group PLC; and, Panel E presents results for Standard Chartered PLC.

Table 4.25 presents, for the banks, the adjusted Basel minimum regulatory capital level estimated on a yearly basis from 2004 to 2008 using the average total equity to market price regulatory relative delta component from Table 4.27. Table 4.26 presents relative percentage change results for Table 4.27.

Table 4.25 Adjusted Minimum Basel Regulatory Capital from Total Equity for UK Banks

The table shows the estimated average change to the minimum Basel regulatory capital requirement, adjusted by the level of difference between the change in total equity and change in market price for banks registered with the LSE's UK banking sector. The Time column presents the Year and Period columns. The Year and Period columns present the corresponding year and time period, respectively, for the regulatory relative delta measure presented in the ΔR column. The *Change in 8% Capital Requirement (%)* column presents the adjustment applied to the Basel minimum regulatory capital, at the 8% level, using the formula: $8\% \times (1 + \Delta R)$ formula. The Increase (%) column presents the percentage increase from the 8% minimum capital requirement level to the adjusted level presented in the *Change in 8% Capital Requirement (%)* column.

Time		ΔR[a]	*Change in 8% Capital Requirement (%)*	Increase (%)
Year	Period		$8\% \times (1 + \Delta R)$	
2004	01-Jan-04 to 31 Dec-04	0.002	8.02	0.2
2005	01-Jan-05 to 31-Dec-05	0.095	8.76	9.5
2006	01-Jan-06 to 31-Dec-06	0.007	8.06	0.7
2007	01-Jan-07 to 31-Dec-07	0.363	10.90	36.3
2008	01-Jan-08 to 31-Dec-08	1.222	17.78	122.2

Table note: [a] ΔR is the total equity to market price regulatory relative delta calculated by applying equation (3.51).

The increases presented in Table 4.25 also signify the level of exposure to financial distress risk experienced by the UK banks during 2004 to 2008. Appendix L presents the approach this study applied to develop the regulatory relative delta estimates in Table 4.25.

Examining the results for the system of accounting totals, the Table 4.27 bank regulatory relative delta measures, suggest that 80% (4 banks from 5) exhibit materially significant levels for the absolute maximum accounting totals to market price relative delta after the 2005 accounting change when compared to before.

That is, the primary UK banks experienced a materially significant increase in the level of the absolute maximum difference between the change in accounting total variables and the change in the market price variable after the 2005 accounting standards change compared to before. The evidence from the relative percentage changes for before and after 2005, presented in Table 4.26, suggest support for this finding.

Table 4.26 Percentage Changes for Regulatory Relative Delta Results for UK Banks from Table 4.27

Percentage Change Analysis Table Description

The banks regulatory relative delta, ΔR, levels in Table 4.27 for time period: 1994 to 2004 - before the 2005 accounting change, and the time periods: 1994 to 2007; and 1994 to 2008 - after the accounting change, analysed using relative percentage changes are presented in Table 4.26.[a]

In Table 4.26, the Description and Symbol columns describes and *codes* the regulatory relative delta measure. The Year column represents the beginning (From) and ending (To) year applied to calculate the percentage changes presented in the Percentage Change column. The Percentage Change column represents the regulatory relative delta percentage changes rounded to the nearest whole number. The H column presents the percentage changes for HSBC Holdings PLC. The B column presents the percentage changes for Barclays PLC. The R column presents the percentage changes for The Royal Bank of Scotland Group PLC. The L column presents the percentage changes for Lloyds Banking Group PLC. The S column presents the percentage changes for Standard Chartered PLC.

Description	Symbol	Year	Percentage Change (%)				
		From - To	H	B	R	L	S
Regulatory Relative Delta	ΔR	1994 - 2004	-70	-96	137	46	-62
		1994 - 2007	-32	-79	4	2	-97
		1994 - 2008	113	-40	356	441	142

Table note: [a] Although Table 4.26 attempts to present for the banks summary information, it is recommended that Table 4.27 is examined for a more *accurate* view of the regulatory relative delta results.

Table 4.27 Regulatory Relative Delta Framework: Estimates for Minimum Regulatory Capital for UK Banks from the Maximum Absolute Relative Delta Adjusted to Specified Threshold Levels

Table Description

The Table 4.27 Panel A to Panel E columns represent the following:

The Year column represents the fiscal accounting year. Record Date is the date the variable values are recorded. *Obs.* represents the number of sample firms observed for the year.

For the Relative Delta Measures (δ) column:
E-M column represents the total equity to market price relative delta for the *year* time period $t-1$ to t calculated by applying equation (3.38); *A-M* column represents the total assets to market price relative delta for the *year* time period $t-1$ to t calculated by applying equation (3.38); *L-M* column represents the total liabilities to market price relative delta for the *year* time period $t-1$ to t calculated by applying equation (3.38); and, *I-M* column represents the net income to market price relative delta for the *year* time period $t-1$ to t calculated by applying equation (3.38).

The *Regulatory Relative Delta* $(\Delta R_{t-1,t})$ column represents the regulatory relative delta measure calculated by applying equation (3.51), and takes the general form:

$$\Delta R_t = |dAC - dM|_{t:\,max}$$

Where: ΔR_t is the Regulatory Relative Delta at time t, $|dAC - dM|_{t:\,max}$ is the absolute maximum of the *E-M* , *A-M* , *L-M*, and *I-M* relative delta levels at time t.

The *Regulatory Relative Delta Thresholds Levels* (λ) column presents illustrative threshold levels: 0%; 10%; 20%; 30%; 40%; 50% and 100% that may be applied to determine the activation level for the proposed regulatory relative delta adjustment. The *Adjusted Minimum Capital Requirement:* $8\% \times (1 + \Delta R_{t-1,t})$ column represents the adjusted minimum capital requirement estimates for corresponding threshold levels calculated by applying expression (3.55), and takes the general form:

$$if\ \Delta R_t \leq \lambda\ then$$
$$Minimum\ (Min.)Regulatory\ Capital = 8\%$$

$$if\ \Delta R_t > \lambda\ then$$
$$Adjusted\ Min.Regulatory\ Capital = 8\% \times (1 + \Delta R_{t-1,t})$$

Table 4.27 (Continued)

PANEL A

Regulatory Relative Delta Framework for HSBC Holdings PLC to Estimate Changes to the Regulatory Minimum Capital Requirement Levels Calculated from the Maximum Absolute Relative Delta Measure Adjusted to Specified Threshold Levels

Year	Record Date	*Relative Delta Measure* (δ)				*Regulatory Relative Delta* $(\Delta R_{t-1,t})$	*Regulatory Relative Delta Thresholds Levels* (λ)						
							0%	*10%*	*20%*	*30%*	*40%*	*50%*	*100%*
		E-M	*A-M*	*L-M*	*I-M*		*Adjusted Minimum Capital Requirement*: $8\% \times (1 + \Delta R_{t-1,t})$						
1994	30-Dec-1994	0.477	0.299	0.289	0.458	0.477	11.82	11.82	11.82	11.82	11.82	8	8
1995	29-Dec-1995	0.573	0.205	0.198	0.542	0.573	12.58	12.58	12.58	12.58	12.58	12.58	8
1996	31-Dec-1996	-0.010	-0.121	-0.127	-0.003	0.127	9.01	9.01	8	8	8	8	8
1997	31-Dec-1997	-0.545	-0.524	-0.516	-0.493	0.545	12.36	12.36	12.36	12.36	12.36	12.36	8
1998	31-Dec-1998	-0.042	-0.030	-0.028	-0.270	0.270	10.16	10.16	10.16	8	8	8	8
1999	31-Dec-1999	-0.204	-0.267	-0.269	-0.170	0.269	10.15	10.15	10.15	8	8	8	8
2000	29-Dec-2000	0.322	0.112	0.098	0.190	0.322	10.57	10.57	10.57	10.57	8	8	8
2001	31-Dec-2001	0.236	0.258	0.262	0.038	0.262	10.09	10.09	10.09	8	8	8	8
2002	31-Dec-2002	0.193	0.146	0.144	-0.368	0.368	10.94	10.94	10.94	10.94	8	8	8
2003	31-Dec-2003	0.045	-0.044	-0.050	0.213	0.213	9.71	9.71	9.71	8	8	8	8
2004	31-Dec-2004	0.083	0.140	0.145	0.053	0.145	9.16	9.16	8	8	8	8	8
2005	30-Dec-2005	0.134	0.215	0.229	0.594	0.594	12.75	12.75	12.75	12.75	12.75	12.75	8
2006	29-Dec-2006	0.030	0.085	0.089	-0.230	0.230	9.84	9.84	9.84	8	8	8	8
2007	31-Dec-2007	0.263	0.318	0.323	0.279	0.323	10.58	10.58	10.58	10.58	8	8	8
2008	31-Dec-2008	0.229	0.636	0.656	-1.016	1.016	16.13	16.13	16.13	16.13	16.13	16.13	16.13

Panel notes: The vertical level highlighted in the *Relative Delta Measure* (δ) column is the absolute maximum relative delta levels for the corresponding year. The highlighted record identifies the IFRS accounting standards 2005 adoption year.

Table 4.27 (Continued)

PANEL B

Regulatory Relative Delta Framework for Barclays PLC to Estimate Changes to the Regulatory Minimum Capital Requirement Levels Calculated from the Maximum Absolute Relative Delta Measure Adjusted to Specified Threshold Levels

Year	Record Date	*Relative Delta Measure* (δ)				*Regulatory Relative Delta* ($\Delta R_{t-1,t}$)	*Regulatory Relative Delta Thresholds* (λ)						
							0%	*10%*	*20%*	*30%*	*40%*	*50%*	*100%*
		E-M	*A-M*	*L-M*	*I-M*		*Adjusted Minimum Capital Requirement:* $8\% \times (1 + \Delta R_{t-1,t})$						
1994	30-Dec-1994	0.201	0.019	0.015	2.808	2.808	30.46	30.46	30.46	30.46	30.46	30.46	30.46
1995	29-Dec-1995	-0.050	-0.152	-0.156	-0.034	0.156	9.25	9.25	8	8	8	8	8
1996	31-Dec-1996	-0.269	-0.206	-0.203	-0.101	0.269	10.15	10.15	10.15	8	8	8	8
1997	31-Dec-1997	-0.438	-0.249	-0.241	-0.791	0.791	14.33	14.33	14.33	14.33	14.33	14.33	8
1998	31-Dec-1998	0.262	0.155	0.151	0.403	0.403	11.23	11.23	11.23	11.23	11.23	8	8
1999	31-Dec-1999	-0.243	-0.169	-0.166	-0.001	0.243	9.94	9.94	9.94	8	8	8	8
2000	29-Dec-2000	0.404	0.065	0.053	0.255	0.404	11.23	11.23	11.23	11.23	11.23	8	8
2001	31-Dec-2001	0.007	0.027	0.027	-0.097	0.097	8.77	8	8	8	8	8	8
2002	31-Dec-2002	0.435	0.512	0.521	-0.205	0.521	12.17	12.17	12.17	12.17	12.17	12.17	8
2003	31-Dec-2003	-0.177	-0.163	-0.162	0.107	0.177	9.42	9.42	8	8	8	8	8
2004	31-Dec-2004	-0.099	0.001	0.004	-0.022	0.099	8.79	8	8	8	8	8	8
2005	30-Dec-2005	-0.041	0.529	0.538	-0.007	0.538	12.30	12.30	12.30	12.30	12.30	12.30	8
2006	29-Dec-2006	-0.042	-0.103	-0.104	0.232	0.232	9.85	9.85	9.85	8	8	8	8
2007	31-Dec-2007	0.547	0.578	0.579	0.158	0.579	12.63	12.63	12.63	12.63	12.63	12.63	8
2008	31-Dec-2008	1.578	1.677	1.683	1.657	1.683	21.46	21.46	21.46	21.46	21.46	21.46	21.46

Panel notes: The vertical level highlighted in the *Relative Delta Measure* (δ) column is the absolute maximum relative delta levels for the corresponding year. The highlighted record identifies the IFRS accounting standards 2005 adoption year.

Table 4.27 (Continued)

PANEL C

Regulatory Relative Delta Framework for The Royal Bank of Scotland PLC to Estimate Changes to the Regulatory Minimum Capital Requirement Levels Calculated from the Maximum Absolute Relative Delta Measure Adjusted to Specified Threshold Levels

Year	Record Date	*Relative Delta Measure* (δ)				*Regulatory Relative Delta* $(\Delta R_{t-1,t})$	*Regulatory Relative Delta Thresholds* (λ)						
							0%	*10%*	*20%*	*30%*	*40%*	*50%*	*100%*
		E-M	*A-M*	*L-M*	*I-M*		*Adjusted Minimum Capital Requirement:* $8\% \times (1 + \Delta R_{t-1,t})$						
1994	30-Sep-1994	-0.218	-0.016	-0.006	1.143	1.143	17.14	17.14	17.14	17.14	17.14	17.14	17.14
1995	29-Sep-1995	0.037	0.0379	0.0383	-0.018	0.038	8.31	8	8	8	8	8	8
1996	30-Sep-1996	0.076	0.097	0.096	0.164	0.164	9.31	9.31	8	8	8	8	8
1997	30-Sep-1997	-0.133	-0.173	-0.174	-0.304	0.304	10.43	10.43	10.43	10.43	8	8	8
1998	30-Sep-1998	0.001	0.123	0.130	0.424	0.424	11.39	11.39	11.39	11.39	11.39	8	8
1999	30-Sep-1999	-0.242	-0.556	-0.567	-0.447	0.567	12.54	12.54	12.54	12.54	12.54	12.54	8
2000	29-Dec-2000	4.229	1.010	0.983	0.633	4.229	41.83	41.83	41.83	41.83	41.83	41.83	41.83
2001	31-Dec-2001	0.140	0.087	0.084	0.209	0.209	9.67	9.67	9.67	8	8	8	8
2002	31-Dec-2002	0.096	0.227	0.234	-0.543	0.543	12.35	12.35	12.35	12.35	12.35	12.35	8
2003	31-Dec-2003	-0.062	-0.001	0.002	-0.203	0.203	9.63	9.63	9.63	8	8	8	8
2004	31-Dec-2004	0.072	0.186	0.193	2.710	2.710	29.68	29.68	29.68	29.68	29.68	29.68	29.68
2005	30-Dec-2005	0.110	0.284	0.298	0.328	0.328	10.62	10.62	10.62	10.62	8	8	8
2006	29-Dec-2006	0.008	-0.012	-0.016	0.001	0.016	8.13	8	8	8	8	8	8
2007	31-Dec-2007	0.721	1.181	1.186	0.565	1.186	17.48	17.48	17.48	17.48	17.48	17.48	17.48
2008	31-Dec-2008	2.129	2.251	2.266	-5.208	5.208	49.66	49.66	49.66	49.66	49.66	49.66	49.66

Panel notes: The vertical level highlighted in the *Relative Delta Measure* (δ) column is the absolute maximum relative delta levels for the corresponding year. The highlighted record identifies the IFRS accounting standards 2005 adoption year.

Table 4.27 (Continued)

PANEL D

Regulatory Relative Delta Framework for Lloyds Banking Group PLC to Estimate Changes to the Regulatory Minimum Capital Requirement Levels Calculated from the Maximum Absolute Relative Delta Measure Adjusted to Specified Threshold Levels

Year	Record Date	*Relative Delta Measure* (δ)				*Regulatory Relative Delta* $(\Delta R_{t-1,t})$	*Regulatory Relative Delta Thresholds* (λ)						
							0%	*10%*	*20%*	*30%*	*40%*	*50%*	*100%*
		E-M	*A-M*	*L-M*	*I-M*		*Adjusted Minimum Capital Requirement:* $8\% \times (1 + \Delta R_{t-1,t})$						
1994	30-Sep-1994	-	-	-	-	-	-	-	-	-	-	-	-
1995	29-Sep-1995	-	-	-	-	-	-	-	-	-	-	-	-
1996	30-Sep-1996	-	-	-	-	-	-	-	-	-	-	-	-
1997	30-Sep-1997	-	-	-	-	-	-	-	-	-	-	-	-
1998	31-Dec-1998	-	-	-	-	-	-	-	-	-	-	-	-
1999	31-Dec-1999	0.260	0.146	0.141	0.285	0.285	10.28	10.28	10.28	8	8	8	8
2000	29-Dec-2000	0.211	0.303	0.306	0.173	0.306	10.45	10.45	10.45	10.45	8	8	8
2001	31-Dec-2001	0.054	0.029	0.027	-0.135	0.135	9.08	9.08	8	8	8	8	8
2002	31-Dec-2002	0.255	0.581	0.597	-0.218	0.597	12.77	12.77	12.77	12.77	12.77	12.77	8
2003	31-Dec-2003	0.205	-0.007	-0.014	2.138	2.138	25.10	25.10	25.10	25.10	25.10	25.10	25.10
2004	31-Dec-2004	-0.018	0.050	0.054	-0.417	0.417	11.33	11.33	11.33	11.33	11.33	8	8
2005	30-Dec-2005	-0.010	0.069	0.073	-0.060	0.073	8.58	8	8	8	8	8	8
2006	29-Dec-2006	-0.063	-0.053	-0.052	0.064	0.064	8.52	8	8	8	8	8	8
2007	31-Dec-2007	0.280	0.219	0.218	0.292	0.292	10.34	10.34	10.34	8	8	8	8
2008	31-Dec-2008	1.094	1.529	1.542	0.460	1.542	20.34	20.34	20.34	20.34	20.34	20.34	20.34

Panel notes: The vertical level highlighted in the *Relative Delta Measure* (δ) column is the absolute maximum relative delta levels for the corresponding year. The highlighted record identifies the IFRS accounting standards 2005 adoption year.

Table 4.27 (Continued)

PANEL E

Regulatory Relative Delta Framework for Standard Chartered PLC to Estimate Changes to the Regulatory Minimum Capital Requirement Levels Calculated from the Maximum Absolute Relative Delta Measure Adjusted to Specified Threshold Levels

Year	Record Date	*Relative Delta Measure* (δ)				*Regulatory Relative Delta* $(\Delta R_{t-1,t})$	*Regulatory Relative Delta Thresholds* (λ)						
							0%	*10%*	*20%*	*30%*	*40%*	*50%*	*100%*
		E-M	*A-M*	*L-M*	*I-M*		*Adjusted Minimum Capital Requirement:* $8\% \times (1 + \Delta R_{t-1,t})$						
1994	30-Dec-1994	0.281	0.172	0.168	0.508	0.508	12.06	12.06	12.06	12.06	12.06	12.06	8
1995	29-Dec-1995	-0.382	-0.540	-0.547	-0.291	0.547	12.37	12.37	12.37	12.37	12.37	12.37	8
1996	31-Dec-1996	-0.084	-0.193	-0.198	0.026	0.198	9.58	9.58	8	8	8	8	8
1997	31-Dec-1997	0.192	0.214	0.215	0.087	0.215	9.72	9.72	9.72	8	8	8	8
1998	31-Dec-1998	0.035	-0.055	-0.060	-0.282	0.282	10.26	10.26	10.26	8	8	8	8
1999	31-Dec-1999	-0.128	-0.199	-0.202	-0.588	0.588	12.70	12.70	12.70	12.70	12.70	12.70	8
2000	29-Dec-2000	0.262	0.233	0.228	1.012	1.012	16.09	16.09	16.09	16.09	16.09	16.09	16.09
2001	31-Dec-2001	0.353	0.235	0.224	-0.181	0.353	10.82	10.82	10.82	10.82	8	8	8
2002	31-Dec-2002	0.047	0.098	0.110	-0.334	0.334	10.67	10.67	10.67	10.67	8	8	8
2003	31-Dec-2003	-0.320	-0.311	-0.314	-0.017	0.320	10.56	10.56	10.56	10.56	8	8	8
2004	31-Dec-2004	-0.029	0.045	0.049	0.194	0.194	9.55	9.55	8	8	8	8	8
2005	30-Dec-2005	0.285	0.238	0.248	0.399	0.399	11.19	11.19	11.19	11.19	8	8	8
2006	29-Dec-2006	0.103	-0.060	-0.068	-0.171	0.171	9.36	9.36	8	8	8	8	8
2007	31-Dec-2007	0.005	-0.015	-0.015	0.002	0.015	8.12	8	8	8	8	8	8
2008	31-Dec-2008	1.082	1.217	1.231	1.227	1.231	17.84	17.84	17.84	17.84	17.84	17.84	17.84

Panel notes: The vertical level highlighted in the *Relative Delta Measure* (δ) column is the absolute maximum relative delta levels for the corresponding year. The highlighted record identifies the IFRS accounting standards 2005 adoption year.

Analysis

Table 4.27 presents the regulatory relative delta measurement framework's results for the UK banks. This framework operates by adjusting the minimum regulatory capital levels using the absolute maximum relative delta measure from the key accounting totals. This regulatory relative delta framework is proposed in this study to inform the regulatory risk monitoring and management framework at firmwide and regional levels.

Examining Table 4.27 for the fiscal years 2004 to 2008, the regulatory relative delta component, ΔR, for the banks *E-M* relative delta measure reveals the changes presented in Table 4.25. Effectively, Table 4.25 shows the adjustments, based on the levels exhibited from the *total equity to market price relative delta* component, applied to the 8% Basel minimum capital requirement.

Table 4.25 shows that this capital adjustment alters the 8% capital requirement for the 2004 year by 0.2%. For years 2005, 2007 and 2008 the adjustment effectively increases the minimum capital reserve requirement by 9.5%, 36.3% and 122.2% respectively.

4.11 Regulatory Capital Measurement and the Technology Framework

As part of this research's discovery, this study proposes the relative delta measure to inform the regulatory framework of a firm's or a portfolio of firms' exposure to financial distress and other risks arising from accounting and market price information. It is proposed that these risks have the ability to be aggregated and reported at national, regional and the global regulatory levels.

Table 4.13 and Table 4.22 present results for the relative delta measure that are calculated by extending the Fama and French (2008) time dependent treatment for the book-to-market ratio measure. As referred to earlier, such an approach, by just measuring the equity to market component alone, substantiates the promise to measure levels of exposure to financial distress risk of a single firm or a portfolio of firms. This study proposes that monitoring the information exhibited in Table 4.13, at an intra-yearly or even an intra-daily frequency, would provide an effective model to help measure, at minimum, exposures to financial distress risk at the firmwide and regulatory levels. Effectively this study proposes extending the Fama and French (2008) book-to-market ratio to a model that is able to monitor the system of relative deltas based on: total equity to market price, total assets to market price, total liabilities to market price and net income to market price. In addition, the proposed measurement model is specified to measure differences in accounting Value-at-Risk and market price return Value-at-Risk. This proposed Value-at-Risk measurement model is similar to that exhibited in Table 4.19 and Table 4.24. As detailed in Section 4.7.2, this model reports the same levels quantified by the system of relative deltas.

This system of relative deltas is applied in this study to develop the regulatory relative delta framework specified in Section 3.9.6. The regulatory relative delta framework is proposed to measure the potential *add-on* effects to the minimum regulatory capital requirement as a consequence of the levels recorded from the accounting to market price relative delta measures. In effect, the regulatory relative delta framework proposes to report information similar to that presented in Table 4.27.

To effectively implement the proposed relative delta, Value-at-Risk and regulatory relative delta frameworks, this study recommends monitoring accounting totals and market price information on a less than a yearly frequency. This study proposes that the technology framework applied to monitor accounting and market price information should ideally report information at a *real-time* or *near real-time* basis.

Adding to this research's findings, a schematic overview of an ideal bank technology framework presented in Figure 4.1 is proposed. The principal feature of this framework is the application of a real-time pricing process to the contemporary technology framework presented in Section 2.13, Figure 2.1.

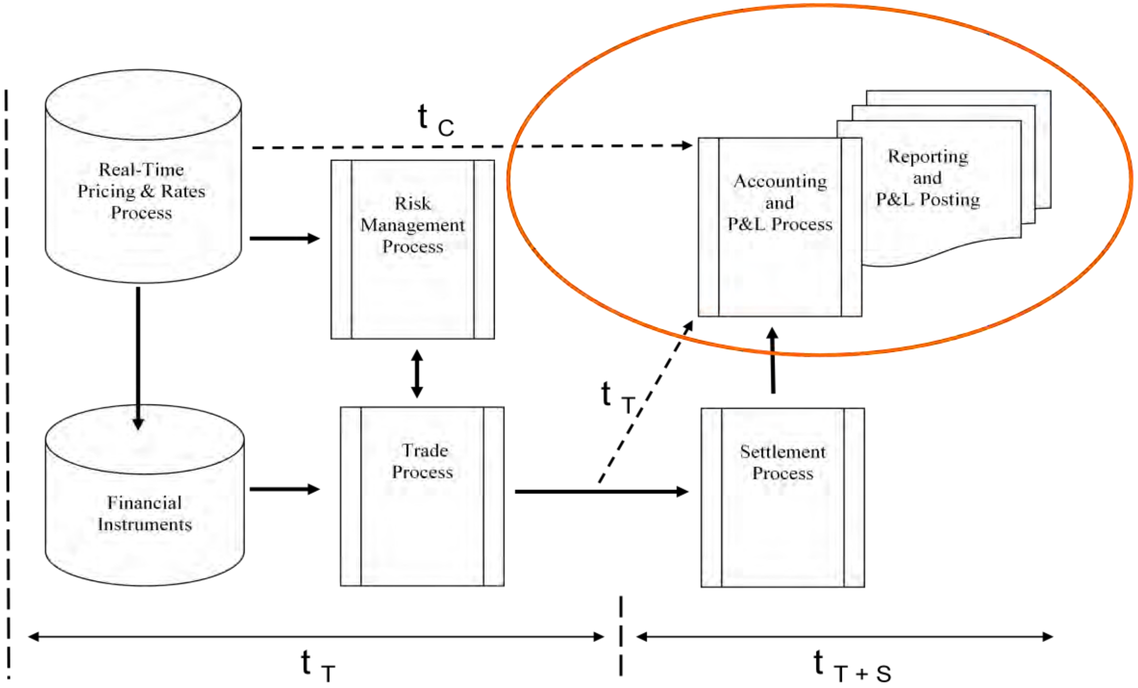
The proposed framework presented in Figure 4.1 shows that at time $t = T$, denoted by t_T (Transaction/Trade time), transacted items from the trade process are posed to both the settlement process and the accounting process simultaneously. The *pre-settlement* items posted directly on to the accounting system at time t_T are updated with current or *real-time* price information at time $t = C$, denoted by t_C (Current time, effectively the time stamp $t_T = t_C$). At time t_{T+S} the settled items are posted to the accounting system, and reconciled with the corresponding items posted to the accounting process prior to settlement at time $t_T = t_C$. The *reconciled* items recorded on the accounting system continue to be updated at time t_C with current price information, until the items are derecognised and archived.

Such a framework is proposed to allow the measurement of individual financial items, accounting totals and the market price information, on a *real-time* or close to real-time basis. This real-time valuation process attached to the accounting process would avoid any potential delays during the settlement process and provide an instantaneous view of a firm's accounting quality and exposure to risks arising from accounting and market price information bias. For settled items, the *valuation* or *pricing* process would remain to permit the instantaneous monitoring of post settlement exposures to these risks.

From this research's findings, the proposed framework presented in Figure 4.1 is expected to be forward looking, secure and highly transparent to both financial products and technology. It is proposed to be an adaptable system to changes in financial instrument products and technology interfaces, platforms and processes. That is, the proposed system possesses qualities that enable an encouragingly manageable integration and replacement of financial instruments and other bank product lifecycles, and the technology product lifecycles.

Figure 4.1 Proposed Bank Technology Framework Overview

Proposed banking technology framework for financial instrument and financial item: pricing, trade, risk management, and accounting.



4.12 Summary

This chapter has presented the results and analyses from the tests specified in Chapter 3. These tests were applied to determine the level of verifiability, or conversely falsifiability, for this study's null hypothesis, presented in Section 3.3.1, and the detailed set of null hypotheses, presented in Section 3.3.2.

From the basis of tests applied at both the individual bank and Primary sample levels, the results show that the UK banks, after 2005, were exposed to market price volatility, increased Value-at-Risk and an increase to the Basel minimum capital requirement. When testing accounting totals, the levels for total equity, total assets and total liabilities exhibited materially and statistically significant increases after 2005. The exception is the net income total that generally exhibited varying levels after 2005. These results indicate that after 2005 the banks became exposed to increased levels of financial distress risk and experienced deterioration in accounting quality, and thus experienced an increase in the level of exposure to accounting quality risk. The same tests conducted on the Secondary sample largely confirmed these findings. The control group of firms, tested to control for the 2005 accounting change, mostly exhibited variable levels that were significantly different to the Primary and Secondary sample, especially for the time period 2005 to 2007. For this time period, generally the control group exhibited lower levels of financial distress risk and improved accounting quality.

An interesting finding is that the tests conducted for GDP and selected market indices, produced similar results before and after 2005 for both the samples and the control group market price variable. These results indicate an arguable finding that the bank market price volatility observed after 2005, especially between 2005 and 2007, were unlikely to have been due to reactions to these economic and market indicators.

From the basis of these results, there is evidence to suggest that the relative delta, accounting Value-at-Risk and regulatory relative delta measures, that are applied to test this study's null hypothesis, has the proposed potential to report risks that arise from accounting and market price information bias. From this finding, a technology architecture that has the capability to report these measures effectively at the bank and regulatory levels is prescribed in this chapter.

Chapter 5 Conclusion

This research set out to examine whether accounting quality improved for the UK banks that adopted in 2005 the IASB framework's IFRS accounting standards (see Chapter 1). This study has quantified the changes in the level of accounting quality experienced by UK banks after the 2005 accounting change, its relation to levels of Value-at-Risk, and its effect on the Basel minimum regulatory capital levels. The theoretical and empirical literature in this subject area that is reviewed in Chapter 2, generally examines European firms during this adoption event. This study extends this literature by focusing examination on the UK banking sector. In so doing, this study begins by first *formulating* and then asking the question:

> *Does accounting quality improve for UK banks that adopted the IFRS accounting standards in 2005?*

In order to address this research question, in Chapter 3, Section 3.3.1, the following null hypothesis is formally introduced:

> *Accounting quality in UK banks was not affected by the adoption of the IFRS accounting standards in 2005. For the UK banks that adopted the new accounting standards in 2005, there is no significant difference between the change in accounting totals and the change in market price after 2005 when compared to before.*

Chapter 3 then specifies the methodological approach and details the tests applied to determine the level of verifiability or falsifiability of the null hypothesis. The results from these tests are presented at summary and detailed levels in Chapter 4.

Section 4.2.6, Table 4.4 Panel B, and Section 4.8, Table 4.22, present at summary and detailed levels respectively, *key* results for the relative delta measure specified in Section 3.2.4 that is applied to test the set of detailed null hypotheses specified in Section 3.3.2.

The evidence from this test, focusing on the *total equity to market price relative delta* applied to examine the null hypothesis, shows an interesting result. For the time range 1993 to 2008, the evidence favours more, at approximately the 80% level, the research hypothesis (see Section 3.4.1). This result, concluded in the first panel in Table 5.6, weakens the null hypothesis and finds that the adopting UK banks did not show an improvement in accounting quality after 2005.

Critical examination of this result shows that the banks did not exhibit an improvement in accounting quality and suggests that they experienced a significant deterioration in accounting quality between 2005 and 2008. This evidence, from the UK banking sector, supports the findings from the sampled firms in Europe reported by Platikanova and Nobes (2006), Paananen and Lin (2009) and Morais and Curto (2008). This result also suggests that within the risk management framework a strong implicit accounting role became evident after 2005, as opposed to the normal explicit role that financial accounting is expected to play.

However, this 80% null hypothesis falsification level is based entirely on the individual bank's *total equity to market price relative delta measure* results applied to test the corresponding *detailed null hypothesis* in equation (3.23). It does not signify evidence from the other tests conducted on the individual banks singularly or as a primary sample, nor does this falsification level take into consideration the secondary sample results. Importantly, this result does not take into account the control sample's reactions before and after 2005.

To attempt to strengthen the null hypothesis, and to examine the important requirements set by the EC (1992) and IASB (2009), further analysis is performed by testing the statements that after 2005: *market price returns increased*; *market price return volatility levels decreased*; and *market price Value-at-Risk decreased*. The outcomes to these statements are presented in Table 5.1. The conclusion drawn from Table 5.1 is that the null hypothesis is further weakened and the research hypothesis further strengthened.

To build evidence to show that significant effects were experienced by the sample market price variable after 2005 due to normal economic and financial market conditions, the statements presented in Table 5.2 are determined. It may be contended that for these statements to add strength to the null hypothesis, it is expected that the

Control group would show significantly different results when compared to the samples after 2005. Such an outcome, would suggest that any periods of volatility experienced by the UK banks arose as a consequence of normal economic and market conditions, and not as a consequence to other influences such as the IFRS accounting standards adoption.

Conversely, if the same level of reaction were signified by the samples and the control group after 2005 for a tested statement, the study would find that the economic factors (tested using GDP levels) and market factors would not have influenced the samples' market prices to a significant level compared to the Control group's market prices before and after 2005. Such an outcome would falsify the tested statement and thus weaken the null hypothesis.

From Table 5.2 the conclusion drawn is that the statements evaluated to corroborate the null hypothesis based on economic and market conditions are falsified. This conclusion deduces that any significant sample differences between the accounting and market price change variables, and thus significant bank *difference component* levels, after 2005 would be as a consequence of factors external to the tested statements. The conclusion drawn from this test is the same as the previous test, resulting in the null hypothesis being further weakened and the research hypothesis strengthened.

The *statement based conclusive evidence* provided thus far has focused on the *market price variable* and the *market price Value-at-Risk variable*. To build definitive evidence to verify the null hypothesis and to claim that the null hypothesis has been wrongly weakened, that is, being subject to a *Type I statistical error*, conclusions are now drawn from tests performed on the accounting and market price variables.

To build evidence to strengthen the null hypothesis, it is expected for the samples and the control group to report significantly similar levels of differences between the accounting and the market price variables after the 2005 accounting standards change. When systematically examining evidence for this study's *null hypothesis* on the basis of statements evaluated to corroborate the *detailed null hypotheses*, the following outcome is expected:

Given that the market price returns did not increase after 2005, the percentage change in accounting totals was not significant from before to after 2005 for the Primary and the Secondary sample compared to the Control group

Testing this statement, the outcomes presented in Table 5.3 conclude that each of the detailed null hypotheses has become weakened. That is, compared to the Control group, the accounting total levels for the samples exhibit a significant increase after 2005. Proceeding then to examine the evidence drawn from the statements based on the *relative delta* and *regulatory relative delta* measures, presented in Table 5.4 to Table 5.11, an arguable conclusion is revealed. This general conclusion arguably further weakens the null hypothesis and strengthens the alternative research hypothesis from the approximate 80% to an approximate 90% level.

It had been expected that the objectives of the EC (1992) and IASB (2009) to increase market stability and increase value relevance - reflected by an improvement in accounting quality, would have been realised in the UK banking sector after the 2005 accounting change. Instead, this study reveals that accounting quality for the UK banks had declined significantly from 2005 to 2008.

This conclusion suggests that within the risk management framework a strong implicit accounting role became evident for the UK banks after 2005, as opposed to financial accounting's expected explicit role.

However, what requires further investigation is whether this observed decline in accounting quality after 2005 had any part to play in the observed volatility after 2005. In Section 2.9.3, it is stated that a decrease in accounting quality is revealed when an increase in financial distress risk is evident. Based on this reasoning and drawing from the conclusion reported in Table 5.11 and principally the evidence from Table 4.25, it is evident that the level of exposure to financial distress risk experienced by UK banks increased from a 0.2% level in 2004 before the accounting change, to a 9.5% level in 2005. This exposure increased significantly to 36.3% and 122.2% in 2007 and 2008 respectively. This gradually increasing level of financial distress risk from 2005 to 2008, reflected by declining accounting quality, may be contended to have produced investor uncertainty. This uncertainty, in turn, may be argued to have contributed to the observed market price volatility, especially from 2005 to 2007.

5.1 Conclusive Statement Analysis

Table 5.1 to Table 5.11, present a sequence of concluding statements that are aligned to this study's null hypothesis. The statements are constructed in such a way that they are easily testable and are similar to the statements termed 'predictions' by Popper (1992, p 33). These statements present evidence that conclusively examines the null hypothesis specified in Section 3.3.1 and equation (3.22) and the detailed null hypotheses specified in Section 3.3.2 and equations (3.23) to (3.26).

Table 5.1 to Table 5.11 are organised to first present the concluding statements being evaluated, and when presented, followed by corresponding variables and equations. The table then indicates whether the findings drawn in this study result in evidence to verify or falsify these statements. The tables also record the literature supported by this evidence. In addition, the tables present a description of the analysis method applied and the *results tables* used to produce the concluding evidence.

Table 5.1 Conclusions for Market Price Returns, Market Price Return Volatility and Market Price Return Value-at-Risk

The table shows in the Statement Tested column the statement examined to determine if the evidence from this study's results provide strength to verify or falsify the statement. The Verified or Falsified column presents the conclusion met, based on the analysis of the results. The Literature Supported column presents the literature that this study supports based on the evidence of the statement tested. The Analysis column presents the quantitative analytical method applied to test the statement. The Tables column presents the result tables analysed.

Statement Tested	Verified or Falsified	Literature Supported	Analysis Method	Tables
Market price returns increased after 2005	falsified	-	Mean	
Market price return volatility levels decreased after 2005	falsified	Walton and Aerts (2006) Walton (2004) Cheney (2008) IASB1 (2008)	Standard Deviation	Table 4.1 Table P.1
Market price Return Value-at-Risk decreased after 2005	falsified	Wild and Poole (2008) Leone (2008) Platikanova and Nobes (2006)	VaR models: Var-covar, Historical, MCS	Table 4.2 Table P.2

Table 5.2 Conclusions for GDP and General Market Conditions to the Samples and the Control Group Market Price Returns and Value-at-Risk

The table shows in the Statement Tested column the statement examined to determine if the evidence from this study's results provide strength to verify or falsify the statement. The Verified or Falsified column presents the conclusion met, based on the analysis of the results. The Literature Supported column presents the literature that this study supports based on the evidence of the statement tested. The Analysis column presents the quantitative analytical method applied to test the statement. The Tables column presents the result tables analysed.

Statement Tested	Verified or Falsified	Literature Supported	Analysis Method	Tables
Selected *GDP* levels showed significantly different magnitude and direction effects with the *Primary and Secondary sample* when compared with the *Control group* returns and VaR	partially falsified	Walton and Aerts (2006) Walton (2004) Cheney (2008) IASB1 (2008) Wild and Poole (2008) Leone (2008) Platikanova and Nobes (2006)	Time series regression	Table P.8 Table P.9
Selected *stock market indices* levels showed significantly different magnitude and direction effects with the *Primary and Secondary sample* when compared with the *Control group* returns and VaR	falsified			Table P.11 Table P.12
Selected *LIBOR rates* showed significantly different magnitude and direction effects with the *Primary and Secondary sample* when compared with the *Control group* returns and VaR	falsified			Table P.13 Table P.14
Selected *GILT Government bond rates* showed significantly different magnitude and direction effects with the *Primary and Secondary sample* when compared with the *Control group* returns and VaR	partially falsified			Table P.15 Table P.16
Selected *foreign exchange rates* showed significantly different magnitude and direction effects with the *Primary and Secondary sample* when compared with the *Control group* returns and VaR	partially falsified			Table P.17 Table P.18

Table 5.3 Conclusions for Null Hypothesis Tests Based on Accounting Totals

The table shows in the Statement Tested column the statement examined to determine if the evidence from this study's results provide strength to verify or falsify the statement. The Accounting Total Tested column presents the accounting total variable that is tested with the market price variable. The Detailed Null Hypothesis Tested column presents the equation for the detailed null hypothesis tested. The Verified or Falsified column presents the conclusion met, based on the analysis of the results. The Literature Supported column presents the literature that this study supports based on the evidence of the statement tested. The Analysis column presents the quantitative analytical method applied to test the statement. The Tables column presents the result tables analysed.

Statement Tested	**Accounting Total Tested**	**Detailed Null Hypothesis Tested**	**Verified or Falsified**	**Literature Supported**	**Analysis Method**	**Tables**
Given that the *market price returns* did not increase after 2005, the percentage change in *accounting totals* was not significant from before to after 2005 for the Primary and Secondary sample compared to the Control group	Total Equity	$H_{0:E}: \delta EM_{t \leq 2004} = \delta EM_{t \geq 2005}$	falsified	Platikanova and Nobes (2006)	Descriptive Statistics	Table 4.3 Table R.4
	Total Assets	$H_{0:A}: \delta AM_{t \leq 2004} = \delta AM_{t \geq 2005}$	falsified	Paananen and Lin (2009)		
	Total Liabilities	$H_{0:L}: \delta LM_{t \leq 2004} = \delta LM_{t \geq 2005}$	falsified			
	Net Income	$H_{0:I}: \delta IM_{t \leq 2004} = \delta IM_{t \geq 2005}$	falsified	Morais and Curto (2008)		

Table 5.4 Conclusions for Null Hypothesis Tests Based on the Change in Accounting Totals to Change in Market Price

The table shows in the Statement Tested column the statement examined to determine if the evidence from this study's results provide strength to verify or falsify the statement. The Accounting Total Tested column presents the accounting total variable that is tested with the market price variable. The Detailed Null Hypothesis Tested column presents the equation for the detailed null hypothesis tested. The Verified or Falsified column presents the conclusion met, based on the analysis of the results. The Literature Supported column presents the literature that this study supports based on the evidence of the statement tested. The Analysis column presents the quantitative analytical method applied to test the statement. The Tables column presents the result tables analysed.

Statement Tested	**Accounting Total Tested**	**Detailed Null Hypothesis Tested**	**Verified or Falsified**	**Literature Supported**	**Analysis Method**	**Tables**	
The difference between the change in accounting totals were not significantly different to the change in market price after 2005 for the Primary and Secondary sample and this difference was less than the Control group	Total Equity	$H_{0:E}: \delta EM_{t \leq 2004} = \delta EM_{t \geq 2005}$	falsified	Platikanova and Nobes (2006) Paananen and Lin (2009) Morais and Curto (2008)	Time series and Cross-sectional regression	Table 4.6 Table U.1	Table 4.11
	Total Assets	$H_{0:A}: \delta AM_{t \leq 2004} = \delta AM_{t \geq 2005}$	falsified			Table 4.8 Table U.3	
	Total Liabilities	$H_{0:L}: \delta LM_{t \leq 2004} = \delta LM_{t \geq 2005}$	-			Table 4.9 Table U.4	
	Net Income	$H_{0:I}: \delta IM_{t \leq 2004} = \delta IM_{t \geq 2005}$	-			Table 4.10 Table U.5	

Table 5.5 Conclusions for Null Hypothesis Tests Based on Accounting to Market Price Relative Delta

The table shows in the Statement Tested column the statement examined to determine if the evidence from this study's results provide strength to verify or falsify the statement. The Accounting Total Tested column presents the accounting total variable that is tested with the market price variable. The Detailed Null Hypothesis Tested column presents the equation for the detailed null hypothesis tested. The Verified or Falsified column presents the conclusion met, based on the analysis of the results. The Literature Supported column presents the literature that this study supports based on the evidence of the statement tested. The Analysis column presents the quantitative analytical method applied to test the statement. The Tables column presents the result tables analysed.

Statement Tested	Accounting Total Tested	Detailed Null Hypothesis Tested	Verified or Falsified	Literature Supported	Analysis Method	Tables
Using the Relative Delta Measure - The difference between the change in accounting totals was not significantly different to the change in market price after 2005 for the Primary and Secondary sample and this difference was less than that of the Control group	Total Equity	$H_{0:E}: \delta EM_{t \leq 2004} = \delta EM_{t \geq 2005}$	falsified	Platikanova and Nobes (2006) Paananen and Lin (2009) Morais and Curto (2008)	Relative changes	Table 4.4 (Panel A) Table 4.12 Table 4.13
	Total Assets	$H_{0:A}: \delta AM_{t \leq 2004} = \delta AM_{t \geq 2005}$	falsified			
	Total Liabilities	$H_{0:L}: \delta LM_{t \leq 2004} = \delta LM_{t \geq 2005}$	falsified			
	Net Income	$H_{0:I}: \delta IM_{t \leq 2004} = \delta IM_{t \geq 2005}$	partially falsified			

Table 5.6 Conclusions for Null Hypothesis Tests Based on Accounting to Market Price Relative Delta for UK Banks

The table shows in the Statement Tested column the statement examined to determine if the evidence from this study's results provide strength to verify or falsify the statement. The Accounting Total Tested column presents the accounting total variable that is tested with the market price variable. The Detailed Null Hypothesis Tested column presents the equation for the detailed null hypothesis tested. The Falsification Level column presents the conclusion met, based on the analysis of the results with the number of banks that falsified the statement. The Literature Supported column presents the literature that this study supports based on the evidence of the statement tested. The Analysis column presents the quantitative analytical method applied to test the statement. The Tables column presents the result tables analysed.

Statement Tested	Accounting Total Tested	Detailed Null Hypothesis Tested	Falsification Level	Literature Supported	Analysis Method	Tables
For the UK banks, using the Relative Delta Measure - The difference between the change in accounting totals was not significantly different to the change in market price after 2005	Total Equity	$H_{0:E}: \delta EM_{t \leq 2004} = \delta EM_{t \geq 2005}$	falsified 4 banks from 5	Platikanova and Nobes (2006) Paananen and Lin (2009) Morais and Curto (2008)	Relative changes	Table 4.4 (Panel B) Table 4.21 Table 4.22
	Total Assets	$H_{0:A}: \delta AM_{t \leq 2004} = \delta AM_{t \geq 2005}$	falsified 5 banks from 5			
	Total Liabilities	$H_{0:L}: \delta LM_{t \leq 2004} = \delta LM_{t \geq 2005}$	falsified 5 banks from 5			
	Net Income	$H_{0:I}: \delta IM_{t \leq 2004} = \delta IM_{t \geq 2005}$	falsified 4 banks from 5			

Table 5.7 Conclusions for Null Hypothesis Tests Based on Relative Delta and Market Price Value-at-Risk

The table shows in the Statement Tested column the statement examined to determine if the evidence from this study's results provide strength to verify or falsify the statement. The Accounting Total Tested column presents the accounting total variable that is tested with the market price variable. The Detailed Null Hypothesis Tested column presents the equation for the detailed null hypothesis tested. The Verified or Falsified column presents the conclusion met, based on the analysis of the results. The Literature Supported column presents the literature that this study supports based on the evidence of the statement tested. The Analysis column presents the quantitative analytical method applied to test the statement. The Tables column presents the result tables analysed.

Statement Tested	Accounting Total Tested	Detailed Null Hypothesis Tested	Verified or Falsified	Literature Supported	Analysis Method	Tables
The relative delta measure showed no significance to market price Value-at-Risk after 2005 for the Primary and Secondary sample and for the Control group	Total Equity	$H_{0:E}: \delta EM_{t \leq 2004} = \delta EM_{t \geq 2005}$	falsified	Platikanova and Nobes (2006) Paananen and Lin (2009) Morais and Curto (2008)	Time series and Cross-sectional regression	Table 4.5 (Panel A) Table 4.14
	Total Assets	$H_{0:A}: \delta AM_{t \leq 2004} = \delta AM_{t \geq 2005}$	falsified			Table 4.5 (Panel A) Table 4.15
	Total Liabilities	$H_{0:L}: \delta LM_{t \leq 2004} = \delta LM_{t \geq 2005}$	falsified			Table 4.5 (Panel A) Table 4.16
	Net Income	$H_{0:I}: \delta IM_{t \leq 2004} = \delta IM_{t \geq 2005}$	falsified			Table 4.5 (Panel A) Table 4.17

Table 5.8 Conclusions for Null Hypothesis Tests Based on Relative Delta and Market Price Value-at-Risk for UK Banks

The table shows in the Statement Tested column the statement examined to determine if the evidence from this study's results provide strength to verify or falsify the statement. The Accounting Total Tested column presents the accounting total variable that is tested with the market price variable. The Detailed Null Hypothesis Tested column presents the equation for the detailed null hypothesis tested. The Falsification Level column presents the conclusion met, based on the analysis of the results with the number of banks that falsified the statement. The Literature Supported column presents the literature that this study supports based on the evidence of the statement tested. The Analysis column presents the quantitative analytical method applied to test the statement. The Tables column presents the result tables analysed.

Statement Tested	Accounting Total Tested	Detailed Null Hypothesis Tested	Falsification Level	Literature Supported	Analysis Method	Tables
For the UK banks, the relative delta measure showed no significance to market price Value-at-Risk after 2005	Total Equity	$H_{0:E}: \delta EM_{t \leq 2004} = \delta EM_{t \geq 2005}$	partially falsified 3 banks from 5	Platikanova and Nobes (2006)	Time series and Cross-sectional regression	Table 4.5 (Panel B) Table V.5 to Table V.9
	Total Assets	$H_{0:A}: \delta AM_{t \leq 2004} = \delta AM_{t \geq 2005}$	falsified 5 banks from 5	Paananen and Lin (2009)		
	Total Liabilities	$H_{0:L}: \delta LM_{t \leq 2004} = \delta LM_{t \geq 2005}$	partially falsified 3 banks from 5	Morais and Curto (2008)		
	Net Income	$H_{0:I}: \delta IM_{t \leq 2004} = \delta IM_{t \geq 2005}$	partially verified 1 bank from 5	EC (2002) IASB (2009)		

Table 5.9 Conclusions for Null Hypothesis Tests Based on Accounting Value-at-Risk and Market Price Value-at-Risk

The table shows in the Statement Tested column the statement examined to determine if the evidence from this study's results provide strength to verify or falsify the statement. The Accounting Total Tested column presents the accounting total variable that is tested with the market price variable. The Detailed Null Hypothesis Tested column presents the equation for the detailed null hypothesis tested. The Verified or Falsified column presents the conclusion met, based on the analysis of the results. The Literature Supported column presents the literature that this study supports based on the evidence of the statement tested. The Analysis column presents the quantitative analytical method applied to test the statement. The Tables column presents the result tables analysed.

Statement Tested	**Accounting Total Tested**	**Detailed Null Hypothesis Tested**	**Verified or Falsified**	**Literature Supported**	**Analysis Method**	**Tables**
For the Primary and Secondary sample the accounting VaR showed similar levels to the Market Price VaR after 2005	Total Equity	$H_{0:E}: \delta EM_{t \leq 2004} = \delta EM_{t \geq 2005}$	falsified	Platikanova and Nobes (2006)	Material differences	Table 4.18 Table 4.19
	Total Assets	$H_{0:A}: \delta AM_{t \leq 2004} = \delta AM_{t \geq 2005}$	falsified	Paananen and Lin (2009)		
	Total Liabilities	$H_{0:L}: \delta LM_{t \leq 2004} = \delta LM_{t \geq 2005}$	falsified			
	Net Income	$H_{0:I}: \delta IM_{t \leq 2004} = \delta IM_{t \geq 2005}$	partially falsified	Morais and Curto (2008)		

Table 5.10 Conclusions for Null Hypothesis Tests Based on Accounting Value-at-Risk and Market Price Value-at-Risk for UK Banks

The table shows in the Statement Tested column the statement examined to determine if the evidence from this study's results provide strength to verify or falsify the statement. The Accounting Total Tested column presents the accounting total variable that is tested with the market price variable. The Detailed Null Hypothesis Tested column presents the equation for the detailed null hypothesis tested. The Falsification Level column presents the conclusion met, based on the analysis of the results with the number of banks that falsified the statement. The Literature Supported column presents the literature that this study supports based on the evidence of the statement tested. The Analysis column presents the quantitative analytical method applied to test the statement. The Tables column presents the result tables analysed.

Statement Tested	Accounting Total Tested	Detailed Null Hypothesis Tested	Falsification Level	Literature Supported	Analysis Method	Tables
For the UK banks the accounting VaR showed similar levels to the Market Price VaR after 2005	Total Equity	$H_{0:E}: \delta EM_{t \leq 2004} = \delta EM_{t \geq 2005}$	partially falsified 3 banks from 5	Platikanova and Nobes (2006) Paananen and Lin (2009) Morais and Curto (2008)	Material differences	Table 4.23 Table 4.24
	Total Assets	$H_{0:A}: \delta AM_{t \leq 2004} = \delta AM_{t \geq 2005}$	falsified 4 banks from 5			
	Total Liabilities	$H_{0:L}: \delta LM_{t \leq 2004} = \delta LM_{t \geq 2005}$	falsified 4 banks from 5			
	Net Income	$H_{0:I}: \delta IM_{t \leq 2004} = \delta IM_{t \geq 2005}$	partially falsified 4 banks from 5			

Table 5.11 Conclusions for Null Hypothesis Tests Based on Regulatory Relative Relative Delta for UK Banks

The table shows in the Statement Tested column the statement examined to determine if the evidence from this study's results provide strength to verify or falsify the statement. The Null Hypothesis Tested column presents the equation for the detailed null hypothesis tested. The Verified or Falsified column presents the conclusion met, based on the analysis of the results. The Literature Supported column presents the literature that this study supports based on the evidence of the statement tested. The Analysis column presents the quantitative analytical method applied to test the statement. The Tables column presents the result tables analysed.

Statement Tested	**Null Hypothesis Tested**	**Verified or Falsified**	**Literature Supported**	**Analysis Method**	**Table**
For the UK banks, the level of minimum regulatory capital did not increase after 2005 when applying the regulatory relative delta adjustment	$H_0: \delta_{t \leq 2004} = \delta_{t \geq 2005}$	falsified	Platikanova and Nobes (2006) Paananen and Lin (2009) Morais and Curto (2008)	Relative changes	Table 4.25 Table 4.26 Table 4.27

5.2 Extension to the Fama and French Time Dependent Treatment for the Book-to-Market Ratio

This study has extended and applied the Fama and French (2008) book-to-market ratio's time dependent treatment by developing a system of equations that measures the difference between the change in the financial statement accounting totals: total equity, total assets, total liabilities and net income, to the change in market price. This measure of *difference* represented by the *difference component* is termed the *relative delta measure*. The relative delta measure has been developed to provide direct tests for the series of detailed null hypotheses specified in Section 3.3.2. Founded on the results from these direct tests, this study has built evidence to determine the level of acceptance or rejection for its null hypothesis (see Sections 4.2.6, 4.5, 4.8 and Table 5.7 and Table 5.8). This study has also extended the Fama and French (2008) book-to-market ratio treatment, together with the Basel regulatory policy (Basel 2011), to produce the regulatory relative delta framework. As presented in Section 4.10, the regulatory relative delta framework has been applied to test directly the individual banks in the UK banking sector. The conclusion from this test is tabulated in Table 5.11.

5.3 Fama and French Baseline Regression and its Inference to this Study

Table Q.1 presents the Fama and French (2008) baseline regression results for the book-to-market ratio and market price return applied to the Primary and Secondary sample and the Control group. These results exhibit a similar pattern when compared to the Fama and French (2008, p 2979, *Table I*) results. However, this study's predictions for expected market price returns using the market value alone do not exhibit strong explanatory evidence.

The Fama and French (2008) sample consisted of all the stocks in the New York Stock Exchange (NYSE) from 1927 to 2006. From the Fama and French results it is determined that the larger the magnitude of the regression slope the higher the returns, and the higher the book-to-market ratio measure, and thus the greater the difference between its book value and market value. Fama and French exhibits a significant slope at 0.21 for stocks listed on the NYSE from 1927 to 2006 that are above the 20th percentile of capitalisation (termed *high capped* stocks). With a slope of 0.3 for stocks *below* the 20th percentile of capitalisation (termed *low capped* stocks).

The baseline regression in this study includes the application of *financially distressed* 2008 stock prices to predict expected market price returns using the market value and the book-to-market ratio measured during 2007. Together with the market value effects, the slopes exhibit evidence of *skewing the 2005 accounting change effect* to produce a higher baseline book-to-market ratio slope for returns before 2005 than after. Taking this effect into account, this study's results produce a slope with a magnitude of 0.667 after 2005 and 0.728 before 2005 for the Primary and Secondary sample; and, 0.767 before 2005 and 0.710 after 2005 for the Control group. If evaluating the regression slopes to be comparative to the difference between the change in *total equity per share* and the change in market price, then this study exhibits greater levels of *difference* than the slopes from the Fama and French baseline regression. The time range applied in this study for its baseline regression is from 1992 to 2007.

By examining the results in Table P.11, it is observed that the relationship between market price returns for the NYSE Dow Jones Industrials index and the LSE FTSE indices is statistically significant from 1994 to 2008. In general, if it may be implied that this same relationship was exhibited from 1927 to 2006 between the indices, then it may be contended that a relationship for the book-to-market ratio observed for stocks registered on the NYSE exchange would have a similar relative relationship for the book-to-market ratio measured for stocks registered on the LSE exchange. If this reasoning is to hold true then it may be said that the levels observed for the book-to-market ratio slopes for the samples and the control group that comprise firms from the LSE, observed an average level of *difference* after 2005 that is greater than the level observed from 1927 to 2006. Therefore, it may be suggested that the levels of difference between the accounting and market price change variables reported in this study, including the *differences* presented in Table 4.25, may be greater than those observed since 1927. In Chapter 6, it is recommended to test the historical effects implied in this section by testing historical data that extends further than 1994.

5.4 Regulatory and Firmwide Technology Framework Findings

This study proposes to inform the banking regulatory authorities by implementing the regulatory relative delta measurement framework, specified in Section 3.9.6 and detailed in Appendix K. This regulatory relative delta framework is proposed to better monitor regulatory capital levels. In addition, the regulatory relative delta framework and the relative delta measure are proposed in this study to provide firms with risk management tools to better facilitate regulatory and firmwide risk management aims. These aims aligned to accurately monitor, maintain and report minimum regulatory capital requirements.

In addition, this study proposes the relative delta measure to inform the accounting standards and firmwide supervisory authorities. The relative delta measure is, in this instance, proposed to report accounting quality, by measuring accounting totals reported by firms under accounting guidelines and investor reactions to these totals reported by the market price.

This study has approached the implementation for such a reporting framework by specifying a technology framework that is intended to integrate more closely the entire banking transaction function. This study proposes that such a system has the ability to synchronise financial instrument and item prices at a *real-time* or *near real-time basis* to its accounting function. The overview for this system is introduced in Section 4.11 and its schematic overview presented in Figure 4.1.

It was stated in the introduction to this thesis that accounting has two roles it may play in risk management: the explicit and the implicit accounting roles. Implementing the accounting total to market price relative delta measures, introduces a third role accounting may play in risk management. This role being a hybrid of the explicit and implicit roles where the function of accounting is applied to help monitor potential financial risks that are attributed to accounting quality.

5.5 Policy Implications

The Basel III regulatory policy (Basel 2011) is the principal banking regulatory framework applied by regional regulators. These regulations are aimed at quantifying a bank's ability to handle potential financial loss by measuring a bank's capital adequacy level. Since its formal inception in 1988 (Basel 1998), the Basel policies have evolved by addressing *credit risk*, *market risk* and aspects of *operational risk*. The measurement framework that Basel regulations apply is based on, in principle, the accounting measures: *Total Assets* whose items are primarily applied to calculate the Basel *risk weighted assets* component; and, *Total Shareholders' Equity* whose items are primarily applied to calculate a bank's capital adequacy level. Although the Basel framework is heavily reliant on accounting based measurements, the policy does not factor adjustments to address accounting quality issues.

The findings from this thesis show that the *regulatory relative delta measure* has the ability to adjust the Basel minimum regulatory capital levels. In so doing, the effects from *measurement bias* between accounting and market valuations would be factored into the Basel regulatory framework. This study recommends that a measure in keeping with the sophisticated measurement framework proposed by the *regulatory relative delta* be applied within the regulatory policy framework. This study recommends, from its findings, that by incorporating such a measurement into policy would provide both regulators and firmwide risk managers a more accurate perspective to the risks faced by a banking institution.

In addition, it is proposed that *unregulated* internal firmwide risk management policies should also incorporate the measure termed the *relative delta*. This measure is developed in this thesis as a measure of the *difference* between the change in accounting totals and the change in market price. This *difference component* also quantifying a firm's level of exposure to financial distress risk. Incorporating the relative delta measure would inform the risk management processes of bias between accounting totals and market valuations. In addition, the measure would guide risk managers to the financial instrument level, where the *difference component* and thus risk exposures are reported to be the highest.

From this research's findings, it is also evident that informing the accounting framework of accounting total and market price *difference* levels is just as important as informing the regulatory and firmwide risk management frameworks. Therefore, it is also proposed that accounting standard policies and standard setters would find it beneficial to stipulate the measures specified principally by the *relative delta* and also the *regulatory relative delta*.

The findings in this research also have implications for policies created by Governments, the European Community and other global regional communities. Administered by central financial regulatory bodies and central banks, the governing bodies now have a process that contributes to help determine the level of effectiveness economic policy has when aimed at stabalising regional and global financial markets.

In summary, such policy implementations are proposed in order to bring stability to the financial system by identifying and mitigating risks that may arise from information bias between accounting and market price data.

5.6 Managerial Implications

Managerial implications based on the findings in this research focus primarily on the policy implementations. That is, firmwide, regulatory and accounting standards setting management processes would be affected by the day-to-day operational process definitions and implementations. These include the technology process definitions and implementations. The primary focus would be on the implementation and monitoring of the relative delta and the regulatory relative delta measurement framework. This study has proposed, in Section 4.11, a technology framework to monitor these measures. From a firmwide perspective, the implementation of this system encompasses, at the least, coordination between the functions: bank front office trading, bank supervision, risk management and control, accounting and technology. Such an implementation at minimum would have an effect on the management duties within these functions and include human resource planning, procurement and training.

This effect on management duties is considered to begin from the technology framework's planning and implementation phases to its day-to-day operations management. These same effects will be evident when new financial products are introduced. In addition, when new technologies and processes are introduced these enhancements will have a significant effect on the change management of the currently recognised and unrecognised functions.

5.7 Technology Implications

The technology implications from this research centres on platforms and interfaces to compute the *relative delta* and *accounting Value-at-Risk* measures, and the implementation of the *regulatory relative delta framework*. These platforms and interfaces are aligned to the proposed technology framework presented in Section 4.11 and specified in Figure 4.1. The technology implemented is to be a *real-time* data system, with *real-time* updates of transacted financial instruments and items, and *real-time* updates of prices for these instruments and items. The technology framework implemented is to be highly scalable and secure, with the ability to handle large transaction volumes and be *fast* and precise in analysing and reporting information. The framework is to have the ability to adapt efficiently to changes in policy, financial product and technology lifecycles. In order to fulfill such requirements, resources would need to be allocated to financial product research and integration, technology platforms and interface research, training, and systems development, implementation, maintenance and technical support. The areas and disciplines that would be most called into action during technology lifecycles would include: budgeting, resource allocation, project management, business analysis, systems analysis, research and development, systems security and recovery, software engineering, hardware engineering as well as computer networks and communications engineering.

Monitoring system performance, change management to new technologies, and implementing new and changes to existing policies and financial products, would also have a significant effect on technology processes and their functions.

5.8 Statistical Implications

The measurement approach specified in Appendix M.5.2 quantifies the level of accuracy by which the coefficient of determination R^2 reports a regression model. This measurement approach would add value to both statistical research and commercial statistical product development. Such a measure can be efficiently implemented within a regression model to add an additional layer to determine either if the R^2 measure is further strengthened or if further investigation is necessary to determine a tested regressive relationship.

Statistical implications are also evident with the proposed algorithm and smoothing formula applied to calculate the standard normal inverse - cumulative distribution function (CDF). The proposed process specified in Appendix N.6.2 and N.6.3 would be useful for systems that primarily apply simulation techniques. In addition, this process would also add value to any statistical process that applies the standard normal inverse CDF.

5.9 Thesis Limitations

This thesis has been limited by the relative delta formula being implemented on a yearly basis. If the system of relative delta equations, specified in Section 3.2.5 were applied on a daily basis, then a similar number of observations to the market price variable (over 3,000 observations per firm for the 1992 to 2009 time range) would have been available for analysis. However, this research approached its analysis from the basis of audited accounting figures that are reported on a yearly basis. By applying the recommendations of this research to present accounting total information on a real-time or near real-time basis, then accounting information would be available for the daily relative delta analysis.

This study was also limited to the number of years observed. This limitation arose as a consequence of market and accounting data availability. Although, this research attaches the significance of its analysis from 1992 to 2009 to the Fama and French (2008) analysis from 1927 to 2006, it is recommended in Chapter 6 that increasing the time range would test the relative delta measure and also test this study's conclusions.

Regarding the number of firms surveyed, this research's population of interest consists of five banking firms. The Secondary sample that was tested alongside the banks consists of 11 banking related firms. The Control group that was also tested consists of 12 banking related firms. This study considers that increasing the number of firms tested in the Secondary sample and the Control group would test further the conclusions reported. The number of firms selected for the Secondary sample and the Control group was limited due to the stringent selection criteria detailed in Section 3.6. In addition, some firms were excluded during the quality assurance phase due to missing data.

This thesis has been challenged by the log change formula's (see Section 3.9.2, equation (3.33)) mathematical limitation when calculating changes that involve negative variable values. The total equity and net income variables both report negative levels. To compute the relative delta measure, the changes in these two variables have been computed by applying the relative change formula (see Section 3.9.2, equation (3.34)), and changes in the market price variable have been computed using the *conventional* log change formula. To provide a comparison, Table S.3 presents *log changes* (where negative values were set to zero) and *relative changes* for both the total equity and net income variables. To test this study's conclusions, it is recommended in Chapter 6 that the relative delta applies variable changes computed using a consistent formula (or *process*) that is able to handle negative values. This would mean that the formula (or *process*) applied to calculate changes in the total equity and the net income variables, is also applied to calculate the changes in the market price variable.

This study considers that the results and analysis presented in this research effectively and conclusively examines the null hypothesis specified in Section 3.3.1. The limitations stated in this section, although important, are considered unlikely to falsify the findings reported. Further areas of analysis and work presented in Chapter 6 may be also considered as addressing this research's limitations. However, unless explicitly aligned to the above limitations this study considers them to be outside its direct research scope.

5.10 Summary

It is deduced, from examination of the test results, that this study's null hypothesis is falsified at approximately the 90% level. Analysis of the results show that instead of the expected improvement in accounting quality after the 2005 accounting change, the UK banks experienced a deterioration in this quality. This examination finds that the role accounting played in risk management after 2005 was influenced by its *implicit* role. In addition, this analysis finds that the UK banks became exposed to financial distress risk and an increase in the minimum regulatory capital requirement after 2005. The general conclusion from these findings identifies evidence that the UK banks became exposed to increased levels of accounting quality risk, and information bias between accounting and market data, after the 2005 accounting change.

It is also concluded that there are *far-reaching* regulatory policy, managerial and technological implications based on the implementation of the relative delta and the regulatory relative delta framework developed and applied in this study. In addition, statistical implications arising from analytical approaches applied in this research are also presented. Limitations to this thesis are also presented that centre on the time range analysed and the number of firms selected for the Secondary sample and the Control group. In addition, the limitation with the log change formula is recognised.

Based on the evidence from this research, it may be possible to summarise the theoretical findings in a proposition. Specifying the accounting totals: *total shareholders' equity*, *total assets*, *total liabilities* and *net income* collectively as the *set of accounting total information*, and individually as *accounting total information*, the axiom would state:

> Prior to any risk mitigation action by a bank, for a given time period if there is a significant level of bias between the *change in a bank's* <u>*set*</u> *of accounting total information* and the *change in its market price*, then the bank will become exposed to market price volatility as a direct consequence of this bias.
>
> Prior to any risk mitigation action by a bank, for a given time period if there is no bias between the *change in a bank's accounting total information* and the *change in its market price*, then the bank will not become exposed to market price volatility as a direct consequence of this non-bias.

Chapter 6 Future Work

6.1 Chapter Introduction

This chapter presents some future research directions aimed at extending this study. Some recommended work is aimed at addressing the thesis limitations reported in Chapter 5. In addition, some recommendations are suggested to validate the findings presented in this thesis. It is noted that this chapter makes extensive reference to the relative delta and the regulatory relative delta framework. However, in a general sense, it is not the intention of this chapter to follow any sequential pattern in its recommendations. The following paragraphs are organised for each to present one or more recommendations. These may be examined singularly or together with similar recommended work.

6.2 Recommendations for Future Work

This study would be furthered by researching areas that test the performance and accuracy of the relative delta measure. An important examination would be to determine how the measurement model performs with a longer time series range for firms within the UK banking sector. In addition, this measure could be tested to determine how well it performs with banking sectors outside the UK. Such results would enable the relative delta to be tested in differing environments to determine whether the results add strength to its relationship to financial distress risk, value relevance and accounting quality. This measure may be tested comparatively to the banking sector with firms in sectors and markets that are outside the banking sector. In general, such work would also provide a test of the concluding axiom presented in Section 5.10.

The other area that would require further research is the regulatory relative delta framework. This framework has only been tested within the LSE's UK banking sector. However, this framework's intention is to provide aggregated measures not only for domestic regulators and banking supervisors, but also for international and regional regulators and supervisors. Tests that determine how well this framework performs in other national sectors and international markets would be an important aspect of this measure. Such tests are important not only to determine how well the proposed measurement framework operates but also to provide valuable information as to how best to calibrate its threshold levels.

This study applies consolidated accounting figures to represent its accounting totals. Testing the relative delta measure by applying also unconsolidated accounting totals would provide comparable results for this measure's performance on a consolidated and unconsolidated basis. Such results may provide an insight to the holding firm's levels of exposure to financial distress risk compared to its subsidiaries. On an operational level, monitoring such data would provide important information to help direct action to mitigate exposures to accounting quality risk and financial distress risk.

An important aspect of the relative delta measurement system is its *promised* ability to trace financial distress risk to the item level. This would mean that exposures to financial distress risk at the financial statement level can be traced to their origin at the financial item or financial instrument level. Further tests could be performed to determine this system's effectiveness to move from monitoring aggregated or summary information, such as industry concentrations at regional and economic area levels, to investigating this information at the detailed level. Such tests would provide important metrics to evaluate the systems forensic performance.

To further the strength of evidence from the general market indices, the number of market indices and foreign exchange currency pairs could be increased. The commodities markets that include oil and gold indices could also be tested. In addition, increasing the number of GDP sectors analysed and the inclusion of the Consumer Price Index (CPI) would add to the strength of evidence for market price reactions originating from economic indicators.

Investor and general bank sentiments for the 2005 accounting change is reported in this study by surveying secondary information from published sources. It may also be recommended to determine views to the 2005 change by directly surveying investors and key banking personnel. Such an approach would provide further insights that relate to the accounting change. In addition, this approach would provide a method to assess potential benefits and issues for the proposed relative delta measure and the regulatory relative delta framework. It is also recommended that face-to-face surveys may also be augmented by investor and bank personnel responses to a paper or electronic questionnaire.

This study would also be furthered by examining evidence from detailed case studies. Information may be gathered from sources that include bank financial statements. By way of motivation, analysis of such information may uncover the precise reasons for the post 2005 increases in volatility and deterioration in accounting quality that is reported in this study. This examination would also include a detailed study of the accounting standard pronouncements that may be linked to these increases. This examination could focus on areas that include the fair value pricing approach, hedge accounting, netting and loan collateralisation policies. In addition, effects from the balance sheet assets and liabilities categorisations: fair value recognition, held-to-maturity, loans and receivables, and available-for-sale, may exhibit further evidence[47]. Such examinations would assist in determining how those standards if applied unchanged may react in the future. Furthermore, from such an analysis, it would be possible to inform the accounting standards authorities as to possible actions that may be applied to reduce levels of observed differences between the accounting and market price change variables.

This study has found that the market price returns and the Value-at-Risk levels for banks in the UK banking sector observed significant changes after 2005. Highly significant changes were exhibited during 2008, the year that witnessed several large banking organisation and financial service firm failures. Future work could be considered that directs attention to the banking firms that failed with the view to determining additional factors that may provide evidence for the observed market price and Value-at-Risk levels. In addition, attention could also be directed to external *stressors* such as national and international political issues, and national and international security issues, as well as natural and unnatural disasters. Investigation with regard to *stressors* aligned to aspects such as reputational risk, moral hazard and tax law misinterpretations may also provide further evidence to the observed market price and Value-at-Risk levels. Such evidence would provide useful information in

[47] These four measurement categories were replaced in November 2009 by two measurement categories: recognition at fair value and recognition at amortised cost (IASB 2011, 2012). The two measurement categories are specified under the IFRS 9 accounting standard and are to be mandatorily applied from 1st January 2015 (IASB 2011, 2012).

identifying and therefore assisting in resolving such issues.

The Fama and French (2008) baseline regression results have been compared to the results in this study. This comparison implies that the UK banks' accounting to market price *difference* levels after 2005 are greater than those reported for NYSE firms from 1927 to 2006. This examination may be furthered by directly analysing historical data that is further than the 1992 time range investigated in this study. Such an examination would determine if these post 2005 *differences* were, as reported, significant. This study may also be furthered by taking the time range closer to the current date. Such an analysis would provide an examination of the *difference* effects beyond the 2008/2009 upper time range investigated.

For variables that have the potential to exhibit negative levels, such as the total equity and the net income variables, this study has computed variable changes using the relative change formula presented in Section 3.9.2, equation (3.34). Otherwise, changes are computed using the log change formula presented in Section 3.9.2, equation (3.33). This log formula is limited, in that, it is unable to compute changes involving negative numbers. This study has applied these change variables to compute the relative delta measure. However, it would be useful to measure the relative delta using change variables that are computed using a consistent formula that has the ability to handle negative values. It is considered that such a study would provide further analysis of the results reported using the total equity to market price and net income to market price relative deltas.

As its convention, this study examines the *second half-year* net income figures after 2002 (see Appendix R.1.2). Although, Appendix R.1.2 presents a comparison for the Primary and Secondary sample *full year*, *first half-year* and *second half-year* net income figures, it may be useful to provide a further comparison of the full year results for after 2002. This analysis may be performed by computing the net income to market price relative delta using the full year net income figures for before and after 2002. In addition, it may be useful to compare the relative delta levels when using individual yearly net income figures that are applied in this study, with net income levels calculated using running totals. Such analyses, although not expected to affect the findings in this research, would provide additional tests for the null hypothesis, and also further test the performance of the relative delta measure.

This study applied the Value-at-Risk models: variance-covariance, historical and Monte Carlo simulation (MCS) to analyse the change in Value-at-Risk levels before and after 2005. The Value-at-Risk testing approach consisted of backtesting market price returns calculated on the same day count basis as the Value-at-Risk time horizons. To extend this analysis it would be beneficial to determine how each model applied to different time horizons perform to the 1-day market price return profile. In addition, the Value-at-Risk measures have only been tested for the 95%, 99% and 99.9% confidence levels. It would also be beneficial to determine the *Value-at-Risk models* performance at the *extreme* 100% and 0% confidence levels. Specifically at the 0% confidence level, such an analysis is similar to the approach applied to evaluate *conditional VaR*.

The mathematical model in the MCS Value-at-Risk approach applied in this study utilises future market price movements based on historical market price returns. Further work is recommended in this area to test if future market price movements can be better modelled by applying other variables. These other variables include benchmark interest rate information such as interest swap rates, LIBOR rates, GILT bond yields, implied volatilities and historical implied volatilities and, stock market index averages. The aim of the proposed tests is to determine the variables that help enhance MCS Value-at-Risk measurements.

To better understand the relationship between the types of risk that this study references, it may be beneficial to research the relationship between financial distress risk, Value-at-Risk and the levels of *difference* quantified by the relative delta measure. In addition, prices applied to financial instruments that are based on pricing models could be investigated to determine how well the relative delta quantifies *pricing model risk*.

This study has introduced credit risk from the perspective of the Basel regulatory framework (Basel 2011). Although this framework advocates credit risk to be measured using the Basel framework or an audited internal based system, this framework understands some firms may apply credit risk levels assessed by external credit assessment institutions. Three such credit assessment institutions are Standard and Poor's, Moody's and Fitch Ratings. These institutions assign credit ratings to reflect credit risk for firms that are considered as being *investment grade companies* (Fabozzi 2010). It may be beneficial to investigate if a relationship exists between the relative delta measure and the risk levels reported by these three institutions. Such an investigation would further the scope of tests performed using the relative delta measure. In addition, such an investigation would provide an assessment of the relative delta measure with respect to the approaches applied by the credit assessment institutions to quantify credit risk.

This study has reported estimates for the change in accounting total Value-at-Risk. These estimates have been made by applying the market price return Value-at-Risk and the relative delta measure. To further the study of accounting Value-at-Risk, it may be possible to determine, from the regressions for the market price Value-at-Risk and the relative delta measure, the true level of market price Value-at-Risk from the level reported by the regression's *intercept parameter*. The difference between the *intercept parameter* and the observed market price return Value-at-Risk, theoretically, should equate to the accounting Value-at-Risk. In addition to this regression process, accounting Value-at-Risk may also be determined from the process applied in this study. In addition, it may be determined by a direct evaluation from actual accounting data on a yearly and/or *daily basis*. Evaluation of accounting Value-at-Risk using these methods would allow the measure of its component that may be embedded in the market price return Value-at-Risk.

This study has introduced, in Appendix M.5.2, the R^2 assessment measure with the objective of testing how well the coefficient of determination R^2 quantifies a regression model. Although some tests for the R^2 assessment has been performed in this research, further study for this measure would provide evidence to how well it performs to its theoretical expectations.

A major aspect of investigation arising from this study is the implementation approaches for the proposed relative delta system and the regulatory relative delta framework. This implementation is proposed at the firmwide, the regional and the global regulatory and supervisory levels. Such a *framework* requires its implementation characteristics to be highly scalable and adaptable to react efficiently and effectively to regulatory policy changes. It must also react in the same way to operational process and financial product changes. The implementation approach that this study emphasises is to build a technology solution around the relative delta and regulatory relative delta framework. Future work regarding this approach that detail and test technology interfaces and platforms would provide important performance information. Building on this work, an implementation approach may be applied to develop a system that is highly scalable and secure with the ability to adapt efficiently to changes in policy, product and technology lifecycles. Such an implementation holds the promise to be extremely beneficial to the financial system.

6.3 Summary

This chapter has directed future work in several research areas. It has recommended that the relative delta system and the regulatory relative delta framework be further tested. These tests are aimed at evaluating the system's and framework's regulatory, risk management and implementation performance. In addition, these tests are aimed at examining the conclusions presented in this thesis. To examine further the findings presented in this thesis, it is recommended that additional variable and longitudinal data be gathered and tested. With this same objective, it is recommended that additional data gathering approaches and measurement techniques be applied. To support this research's findings, the use of case studies and investigation of external *stressors* are recommended. This chapter also recommends work based on the market price and accounting Value-at-Risk measures. In addition, future work that examines the *assessment measure* proposed to test the coefficient of determination, R^2, is recommended.

Chapter 7 References

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APPENDIX A THE FAMA AND FRENCH TIME DEPENDENT BOOK-TO-MARKET RATIO TREATMENT AND THE RELATIVE DELTA

This appendix introduces the extension to the Fama and French (2008) treatment of the book-to-market ratio that is applied in this study. This appendix also introduces the rationale in applying this extension to examine the null hypothesis specified in Section 3.3.1. For reasons of convenience, this null hypothesis is reproduced in this appendix.

This study extends the Fama and French (2008) treatment of the book-to-market ratio, from the following:

$$BM_t = BM_{t-1} + \left[dB_{t-1,t} - dM_{t-1,t}\right] \tag{A.1}$$

to an implementation of the following *delta* component from equation (A.1):

$$\delta_{t-1,t} = \left[dB_{t-1,t} - dM_{t-1,t}\right] \tag{A.2}$$

Where in equation (A.1), the BM_t is the natural log of the book-to-market ratio at time t, and is a measure of, BM_{t-1}, the book-to-market ratio measured at the preceding time period $t-1$, plus the relative change or difference between, $dB_{t-1,t}$, the change in the natural log of book equity, and, $dM_{t-1,t}$, the change in the natural log of market price from time $t-1$ to t.

Equation (A.2), and in its generalised form specified in equation (B.2), is the component that forms the basis of the extension to the treatment specified in equation (A.1). Where in equation (A.2), the delta component, $\delta_{t-1,t}$, in its extended form, measures at time t from $t-1$, the difference between the natural log change in the accounting total, *total equity*, (and also the natural log change in accounting totals - *total assets*, *total liabilities* and *net income*) and the natural log change in the market price. For convenience, this study refers to the general approach of this delta measure, δ, with the generalised term - *relative delta*.

The term *relative delta* is applied to equation (A.2) because the change or the *delta* values dB and dM are first calculated from $t-1$ to t, then the difference between two delta variables evaluated to determine their *vector* relationship. The relative delta measure could as well be named the *delta relative*, *delta difference* or *difference delta* as each conveys the same idea. The important mechanism that the name for this formula should translate is the process where, first, the delta for each variable is computed, and second, their relative difference is computed.

This relative delta measure is developed in this research to test the following null hypothesis:

> *Accounting quality in UK banks was not affected by the adoption of the IFRS accounting standards in 2005. For the UK banks that adopted the new accounting standards in 2005, there is no significant difference between the change in accounting totals and the change in market price after 2005 when compared to the level of difference before.*

Fama and French (2008) and Daniel and Titman (2006) provide evidence to show that the book-to-market ratio's past changes contain predictive information. This predictive nature translates to these past changes having the ability to predict the level of a firm's future exposure to financial distress risk. Based on this evidence it could be contended that the motivation to verify the null hypothesis would be strong. In that, doing so would provide evidence for both the changes in accounting quality, and also the changes in the predictive levels of exposure to financial distress risk during the 2005 accounting change. A stronger motivation may become apparent when examining evidence from Fama and French (1992) and Peterkort and Nielsen (2005). This evidence shows that the measure of financial distress risk from the classical book-to-market approach relates to a measure of *stock market price risk*.

APPENDIX B BOOK DELTA AND ACCOUNTING DELTA TO MARKET DELTA

This appendix details the change in the accounting totals applied to extend the Fama and French (2008) treatment of the book-to-market ratio. This appendix also specifies the *relative delta measure* and its alignment to the concept of the *difference component*. In addition, the generalised optimal computational form of the *accounting to market price relative delta* measure is presented.

B.1 Book Delta to Market Delta

The Fama and French (2008) development of the book-to-market ratio (BM) and *book delta* to *market delta* measure takes the following decomposition:

$$BM_t = BM_{t-k} + \ [dB_{t-k,t} - dM_{t-k,t}] \qquad \text{(B.1)}$$

Where BM_t - the *log* [48] of BM at time t is expressed as BM_{t-k} - the log of the BM at time $t-k$ plus the difference between $dB_{t-k,t}$ - the change or *delta* in the log of book equity from time $t-k$ to t, and $dM_{t-k,t}$ - the change or *delta* in the log market price for the same time period $t-k$ to t.

B.2 Accounting Delta to Market Delta

The expression specified within the brackets in equation (B.1) is extended to the measure termed as the *relative delta*. Maintaining the subscript notation from Fama and French (2008) in equation (B.1) and replacing the measure of book equity *B*, with the more general form *AC*, to represent the financial statement accounting totals, the generic form of the *relative delta* measure is expressed by the following:

$$\delta_{t-k,t} = dAC_{t-k,t} - dM_{t-k,t} \qquad \text{(B.2)}$$

[48] As stated in Appendix A, the term log is used to specify the natural logarithm to the base e and is also denoted as $ln(X)$, where (X) is the termed being logged.

Where $\delta_{t-k,t}$ is specified as a firm's *relative delta*[49], and with reference to equation (B.1), equation (B.2) is expressed as the difference between $dAC_{t-k,t}$ - the log change in the financial statement accounting total from time $t-k$ to t, and $dM_{t-k,t}$ - the log change in market price for the same time period $t-k$ to t.

To define the relative delta measure used in this study more precisely as a single time unit measure, while maintaining the Fama and French (2008) notation, equation (B.2) takes the following form:

$$\delta_{t-1,t} = dAC_{t-1,t} - dM_{t-1,t} \qquad \text{(B.3)}$$

Where $\delta_{t-1,t}$ is the measure of the relative delta for a firm from time period $t-1$ to a single incremental forward time period t, and is evaluated as the difference between $dAC_{t-1,t}$ - the log change in the financial statement accounting total for the unit time period $t-1$ to t, and $dM_{t-1,t}$ - the log change in the market price for the same unit time period $t-1$ to t.

Specifying equation (B.3) using a slightly different notation gives:

$$\delta_{t,t+1} = dAC_{t,t+1} - dM_{t,t+1} \qquad \text{(B.4)}$$

Where $\delta_{t,t+1}$ is the measure of the relative delta for a firm from time period t to a single incremental forward time period $t+1$, and is evaluated as the difference between $dAC_{t,t+1}$ - the log change in the financial statement accounting total for the unit time period t to $t+1$, and $dM_{t,t+1}$ - the log change in market price for the same unit time period t to $t+1$.

This study applies the notation presented in equation (B.3), however, the same principles would apply if using the approach specified in equation (B.4).

[49] The Relative Delta measure $\delta_{t-k,t} = dAC_{t-k,t} - dM_{t-k,t}$ may also be represented by $\Delta_{t-k,t} = \Delta AC_{t-k,t} - \Delta M_{t-k,t}$.

Restating equation (B.3) and then expressing its components in the natural *log* form provides the following definitions:

$$\delta_{t-1,t} = dAC_{t-1,t} - dM_{t-1,t}$$

$$\delta_{t-1,t} = ln\left(\frac{AC_t}{AC_{t-1}}\right) - ln\left(\frac{P_t}{P_{t-1}}\right) \qquad \text{(B.5)}$$

Applying the same definitions as in equation (B.3), the expression $ln(AC_t/AC_{t-1})$ is the natural log[50] change in the accounting total from time period $t-1$ to t. This *change component* is termed in this study as the *accounting delta*. The expression $ln(P_t/P_{t-1})$ is the log change in market price for the same time period $t-1$ to t. This *change component* is termed in this study as the *market price delta* or the *market price return*.

The *difference component* $\delta_{t-1,t}$ - the *relative delta* measure in equation (B.5), may be expressed in the more familiar *relative* form. This form, specified in equation (B.6), combines the *delta log* components to provide a more computationally optimal single log form. This *relative* log form is:

$$\delta_{t-1,t} = ln\left[\left(\frac{AC_t}{AC_{t-1}}\right) / \left(\frac{P_t}{P_{t-1}}\right)\right] \qquad \text{(B.6)}$$

The definitions for the variables in equation (B.6) are the same as in equation (B.5).

[50] Unless otherwise stated, this study applies the term ln to specify the natural log, that is, the logarithm to the base e.

APPENDIX C THE RELATIVE DELTA MEASURE

To specify the characteristics of the *relative delta measure*, this appendix presents comparisons of its behaviour with the conventional book-to-market ratio. These comparisons are made with reference to the measure of *financial distress risk*, and the *difference component*. The latter measure applied in this study to examine accounting quality (see also Section 2.9.3).

C.1 Book Delta to Market Delta and The Relative Delta Measure

The *relative delta measure* is the primary measure built and applied to evaluate the levels of *difference* between the change in accounting totals and the change in market price.[51] The *relative delta* forms the basis of the measurement system applied to test this study's null hypothesis. These tests effectively measure, for UK banks, the level of change in financial statement accounting totals to the level of change in market price before and after the 2005 accounting change. In effect, this study proposes this relative delta to quantify changes in accounting quality by measuring the changes in the deltas for the accounting variables and the market price variable.

The development of the relative delta measure specified in equation (B.3) as part of its extension to the Fama and French (2008) book-to-market ratio, applies a different measurement of the book equity component to that specified in equation (A.2). In equation (A.2), Fama and French (2008) specify the book-to-market ratio as the ratio between the variables *book equity per share* and *market price*, or as the ratio between *book equity* and *market value*. Where, *market value* is specified as the number of a firm's outstanding shares multiplied by its market price. Section 3.2.3 provides a detailed analysis of the way each of these *explicitly share adjusted variables* relate to the *relative delta variable*. Examining the change component specified in equation (A.2) to the *relative delta* measure specified in its generic form in equation (B.3), the former applies the *book equity per share* variable while the latter, in comparison,

[51] The component *change in market price* specified in the *relative delta measure* is in effect a measure of the market price return, and may be referred to as either *change in market price* or *market price return*. In addition, this *change in market price* may also be termed the *market price delta*.

applies the *total equity* variable. As stated earlier in this section, the former equation (A.2) adjusts its equity or market price component using the number of shares outstanding. The *relative delta measure* in equation (B.3) does not make this adjustment. This study specifies the *total equity to market price relative delta* to be the measure of the difference between the change in *total shareholders' equity* and the change in *market price*. It is possible to use the *relative delta* measure without the adjustment for outstanding shares due to its specification. Since the *relative delta* measure is formulated based on the change in the numerator variable to the change in the denominator variable (see equation (B.6)), in effect, this measure scales itself. This specification of the relative delta measure is used in this study to determine the level of difference between changes in one variable compared to changes in another variable. This specification is also applied to determine the relative delta's behavior without the explicit adjustment for outstanding shares.

C.2 Relative Delta Measure Characteristics

To maintain the identity of the variables used in the Fama and French (2008) work, the relative delta characteristics will be detailed by referencing the *book equity to market price relative delta* (BM Relative Delta measure). This is equivalent to the earlier stated *total equity to market price relative delta* that is developed later in its general form as the *accounting to market price relative delta*.

The difference between the *change* in *book equity* and *market price* variables signify the *change* for a firm's value from the *book equity* perspective to its value from the *market price* perspective. This *book equity valuation* measures a firm's end of year value from the perspective of prepared financial statements, and this *market price valuation* measures a firm's almost instantaneous value from the perspective of its market investors.

To determine the characteristics of the Fama and French (2008) motivated *BM relative delta measure*, presented in equation (A.2), in relation to the conventional book-to-market ratio (BM or BM Measure), the primary characteristics of this conventional measure are now considered.

Fama and French (1992, 1993) found evidence that the *conventional* book-to-market ratio has the ability to measure both financial distress risk and market price return for a firm's stock. Based on a firm's BM level its stock is classified as either a value stock or a growth stock. For a firm with a high BM measure, its shares issued in a stock market are termed value stocks, and for a firm with a low BM its shares are termed growth stocks. Fama and French (1992, 1993) evaluated that a value stock with a high BM exhibited higher returns to compensate for higher levels of *financial distress risk* exposure to the stock's *underlying firm*. In comparison, a growth stock with a low BM, exhibited lower returns and signified a lower level of financial distress to the stock's *underlying firm*.

These book-to-market ratio characteristics may be summarised by: value stocks with high BM exhibit higher market price returns but also have a higher level of financial distress risk; growth stocks with low BM exhibit lower market price returns and have a lower level of financial distress risk. The Fama and French (2008) BM delta characteristics may be summarised by the finding that the *BM delta measure*, in general, enhance estimates of expected returns. From this and the Fama and French (1992) and Peterkort and Nielsen (2005) findings, it may be contended that this *BM delta measure* enhances its characteristic to predict a firm's level of exposure to financial distress risk.

Table C.1 presents the behavior of the BM measure and the BM delta for increasing returns and risk and conversely decreasing returns and risk.

Table C.1 Book-to-Market Ratio and Book Equity to Market Price Relative Delta

The table shows the relationship between the book-to-market ratio and the book equity to market price relative delta measure. The Return column presents the increase or decrease of market price return for the corresponding system of inequalities presented in the BM Measure column, and the BM Relative Delta Measure column. The BM Measure column presents the book-to-market ratio, and the BM Relative Delta Measure column presents the book equity to market price relative delta measure. The Financial Distress Risk column shows the increase or decrease of financial distress risk for the corresponding system of inequality equations in the BM Measure column, and the BM Relative Delta Measure column. The BM Measure column presents the system of inequalities where for a firm: B is the book equity measure; S is the number of shares outstanding; and, M is the market price. The BM Relative Delta Measure column presents the system of inequality equations where for a firm: dB is the natural log of the change in book equity for a unit time period; and, dM is the natural log of the change in market price for the same unit time period.

Table C.1 (Continued)

Return	Financial Distress Risk	BM Measure	BM Relative Delta Measure
increase	*increase*	$\frac{B}{S \times M} > 1$	$dB - dM > 0$
decrease	*decrease*	$\frac{B}{S \times M} < 1$	$dB - dM < 0$

From Table C.1 it is observed that the *increase* and *decrease* relationship specified for return and financial distress risk, represented by the Return and Financial Distress Risk columns respectively, are reflected by the inequality levels for the book-to-market ratio, represented by the BM Measure column, and the relative delta measure, represented by the BM Relative Delta Measure[52] column. Examining Table C.1 shows that a firm's stock return and its financial distress risk both increase if the BM measure is greater than 1, (that is, if the ratio of book equity to number of shares outstanding multiplied by the market price is greater than 1). The same increase in return and risk is specified for the BM Relative Delta Measure when it is greater than 0, (that is, if the difference in the change in book equity to market price return is greater than 0). Table C.1 also shows that a firm's stock return and its exposure to financial distress risk both decrease if the BM measure is less than 1. The same decrease in return and *risk* is specified for the BM Relative Delta Measure when it is less than 0.

This is to say that in the normal course of events, from Table C.1 the expressions for the BM measure and the BM delta measure both signify for a stock, its gradually increasing and decreasing expected return and risk measurement. From the system of inequalities presented in Table C.1, if a stock's BM measure is increasing above 1, this would translate to a corresponding increase in expected return and also the related increase in financial distress risk. If however, the BM measure reverses and is decreasing below 1, this would signify the corresponding decrease in the stock's expected return and also a decrease in its related financial distress risk. Following the same rationale, if the BM delta measure is increasing above 0, this would translate to an increase in expected return and also the increase in related financial distress risk. If however the BM delta measure reverses and is decreasing below 0, i.e. negatively increasing, this would

[52] This study refers to the BM Relative Delta Measure also as the BM delta or BM delta measure.

signify a decrease in expected return and a decrease in financial distress risk. In addition, Fama and French (2008) find evidence that shows the *BM delta* reversal of returns is predictive of the BM reversal of returns. They find evidence that both the change in market price, dM, and the change in book equity, dB, are equally related to the BM delta's predictive power.

From Section 2.6, in its general form the BM delta measure is specified as the accounting to market price relative delta measure or referred to simply as the *relative delta*. Table C.2 presents this measure to reflect the return and risk relationships presented in Table C.1.

Table C.2 Market Price Return, Financial Distress Risk and Accounting Totals to Market Price Relative Delta

The table shows the relationship between market price return, financial distress risk and accounting totals to the market price relative delta measure. The Return column presents the increase, unchanged or decrease of the market price return for the corresponding system of inequality and equality equations in the Relative Delta Measure column. The Financial Distress Risk column shows the increase or decrease of financial distress risk for the corresponding system of equations in the Relative Delta Measure column. The Relative Delta Measure column presents the system of equations where for a firm: dAC is the natural log of the change in accounting totals for a unit time period; and dM is the natural log of the change in market price for the same unit time period.

Return	Financial Distress Risk	Relative Delta Measure
increase	*increase*	$dAC - dM > 0$
unchanged	*unchanged*	$dAC - dM = 0$
decrease	*decrease*	$dAC - dM < 0$

Table C.2 shows that a firm's stock return and its financial distress risk both increase if the Relative Delta measure is greater than 0, that is, if the difference in the change in accounting totals to market price is greater than 0. Table C.2 also shows that a firm's stock return and its financial distress risk both decrease if the Relative Delta measure is less than 0, that is, if the difference in the change in accounting totals to market price is less than 0. When compared to the system of equations presented in Table C.1, Table C.2 presents in the Relative Delta Measure column an additional equality. This equality, represented by $dAC - dM = 0$, specifies that a firm's stock return and its financial distress risk both remain unchanged if the Relative Delta measure equates to 0, that is, the change in accounting totals are the same, in both magnitude and direction, as the change in market price. If this equality were introduced in Table C.1, within the BM Measure context, this equality would be: $B/(S \times M) = 1$.

However, this equality is introduced in Table C.2 because the accounting total to market price relative delta measure is applied to test this research's null hypothesis by providing a measure of *difference* between a firm's change in key accounting totals and its change in market price. In order to provide a coherent measure of *difference*, also termed the *difference component*, from the system of equations presented in Table C.2, the accounting total to market price relative delta measure takes the definitions specified in Table C.3.

Table C.3 Measure of the Difference Component using the Accounting Totals to Market Price Relative Delta

The table shows the relationship between levels of the difference component and the accounting totals to market price relative delta measure. The Difference Component column presents the increase or unchanged level of difference for the corresponding system of inequality and equality equations presented in the Relative Delta Measure column. In this system of inequality and equality equations, dAC is the natural log of the change in accounting totals in a unit time period, and dM is the natural log of the change in market price for the same unit time period.

Difference Component	Relative Delta Measure
increase	$dAC - dM > 0$
unchanged	$dAC - dM = 0$
increase	$dAC - dM < 0$

Aligned with the system of equations presented in Table C.2, Table C.3 shows that a firm's *difference component* increases if the Relative Delta measure is greater than 0. That is, if the difference in the change in accounting totals to market price is greater than 0. The equality represented by $dAC - dM = 0$, specifies that there is no difference between a firm's change in accounting totals and the change in its market price. Unlike Table C.2, Table C.3 shows that for a firm, its *difference component* level increases if the Relative Delta measure is less than 0. That is, if the difference in the change in accounting totals to market price is less than 0.

The expressions specified in Table C.3 are central to testing this study's null hypothesis. In that they quantify the level of material difference between the firm's change in key financial statement accounting totals and its change in market price. This study approaches the measure of the *difference component* from the perspective that the accounting standard applied would maintain a level of *difference* year-on-year between its change in key financial statement totals and its change in market price. This level of *difference* expected to be the same or less than that measured for a previous accounting standard. That is to say, the accounting standards change in 2005 would be expected to maintain or ideally, exhibit a decrease in the difference between the measures of a firm's value based on key accounting totals from its balance sheet and income statement transactions to that of the firm's value based on its market price transactions. This ideal decrease in difference would translate to an increase in the level of accounting quality, (see Section 2.9.3), after the 2005 adoption. In Table C.3, the key accounting total components used for the relative delta in this study are the following balance sheet amounts: total shareholders' equity, total assets and total liabilities, and the income statement amount net income.

APPENDIX D RELATIONSHIP BETWEEN FINANCIAL DISTRESS RISK, DIFFERENCE COMPONENT AND RELATIVE DELTA

This appendix focuses on the relative delta measure's behaviour with respect to financial distress risk and the measure of the *difference component*.

D.1 Financial Distress Risk and the Relative Delta Measure

From the book-to-market ratio measure in Fama and French (1992) and Peterkort and Nielsen (2005), it is considered that the level of book equity per share compared to the level of market price is a measure of a firm's expected returns. This level is also considered in these studies as a measure of a firm's exposure to financial distress risk. This relationship is developed in Appendix C and presented in Table C.1 in the BM Measure column.

This classical treatment of the BM measure is extended by Fama and French (2008). They interpret that the level of a firm's change in the book equity per share to the level of change to market price enhances the measure of its expected returns. This study develops this measure in Appendix C using the term the *relative delta* measure. The *relative delta* measure provides for a firm a measure of the difference between its change in the key financial statement accounting totals to the change in its market price. Additionally, Appendix C and Table C.2, develops for a firm the relationship between its *relative delta* and its expected return and its financial distress risk. Appendix C Table C.3 presents the relational characteristics of the *relative delta* measure applied in this study. If Table C.3 is adapted to present the relationship between the *difference component* and financial distress risk presented in Table C.2, their resulting relationship to the *relative delta* would be that presented in Table D.1.

Table D.1 The Difference Component, Financial Distress Risk and the Accounting Totals to Market Price Relative Delta

The table shows the relationship between levels of the difference component to financial distress risk and the accounting totals to market price relative delta measure. The Difference Component column presents the increase or unchanged level of difference for the corresponding system of inequality and equality equations that are presented in the Relative Delta Measure column. The Financial Distress Risk column shows the increase of financial distress risk for the corresponding system of inequality and equality equations in the Relative Delta Measure column. The Relative Delta Measure column presents the system of inequality and equality equations. Where, for a firm, dAC is the natural log of the change in accounting totals and dM is the natural log of the change in market price.

Difference Component	Financial Distress Risk	Relative Delta Measure
increase	*increase*	$dAC - dM > 0$
unchanged	*unchanged*	$dAC - dM = 0$
increase	*increase*	$dAC - dM < 0$

The obvious difference in the interpretation of financial distress risk between Table C.2 and Table D.1 is that in the latter it increases for the relative delta inequality, $dAC - dM < 0$. This Table D.1 specification interprets an increase to a firm's level of financial distress risk, irrespective of whether an increase in return is evident or not. This compares with Table C.2 where the same inequality represents a firm's decrease in financial distress risk and a resulting decrease for the firm's expected return.

The relationships specified in Table D.1 between the *difference component*, financial distress risk, and the *relative delta*, are applied in this study to test its null hypothesis specified in Section 3.3.1. With, principally the *difference component*, applied to test for accounting quality (see Section 2.9).

APPENDIX E ACCOUNTING TO MARKET PRICE RELATIVE DELTA DEFINITIONS

This appendix details the *accounting to market price relative delta* measures applied in this study. In addition, the specific implementations of these measures are specified.

E.1 Accounting Totals to Market Price Relative Deltas

This study, as specified in Appendix B, terms the generic form of the *relative delta measure* as the *accounting to market price relative delta*. From this general specification, this section details the four relative delta measure applied in this study.

E.1.1 Total Equity to Market Price Relative Delta

From the basis of the Fama and French (2008) measure for the change in book equity to the change in market price, this study specifies the total equity to market price relative delta. As discussed in Appendix C, there is a subtle difference from the way that Fama and French (2008) specifies the change in book equity to the change in market price to that specified in this study. In a strict sense, the Fama and French (2008) change in book equity to the change in market price is in fact the change in book equity per share, to the change in market price. This study evaluates the formula - change in book equity per share (by applying the change in Total Shareholders' Equity per share) to the change in market price; and also the formula - change in *total equity* (by applying the change in Total Shareholders' Equity) to the change in market price. The latter formulation, in effect, does not explicitly specify effects that relate to the number of shares outstanding.

This study specifies the formula to calculate the change in total shareholders' equity to the market price return relative delta by the following equation:

$$\delta EM_{t-1,t} = dE_{t-1,t} - dM_{t-1,t} \tag{E.1}$$

Where $\delta EM_{t-1,t}$ is a firm's change in total shareholders' equity to its change in market price from time $t-1$ to a single incremental forward time period, t. This study terms the $\delta EM_{t-1,t}$ as the *total shareholders' equity to market price relative delta*. The $\delta EM_{t-1,t}$ is evaluated as the difference between $dE_{t-1,t}$: the change in the log financial statement *total shareholders' equity* accounting total for the unit time period $t-1$ to t, termed in this study as the *total shareholders' equity delta* or simply as the *equity delta*; and, $dM_{t-1,t}$: the change in *market price* for the same unit time period $t-1$ to t, termed in this study as the *market price return*, *market delta* or *price delta*.

Presenting equation (E.1) in log form gives:

$$\delta EM_{t-1} = ln\left(\frac{E_t}{E_{t-1}}\right) - ln\left(\frac{P_t}{P_{t-1}}\right) \qquad \text{(E.2)}$$

The expression $ln(E_t/E_{t-1})$ is the log change in the *total shareholders' equity* accounting total from time $t-1$ to t. The variable E_t is the *total shareholders' equity* accounting total at time t, and E_{t-1} is the *total shareholders' equity* accounting total at time $t-1$. The expression $ln(P_t/P_{t-1})$ is the log change in *market price* for the same time period $t-1$ to t. The variable P_t is the market price at time period t, and P_{t-1} is the *market price* at time $t-1$.

E.1.2 Total Assets to Market Price Relative Delta

From the basis of the accounting equation presented in Section 2.8.1, equation (2.3), a measure may be specified to determine the difference between the change in total assets and the change in market price. This measure, would in principle, allow this study to determine the level of the change in balance sheet asset totals to the change in market price before and after the 2005 accounting change.

Such a measure would allow examination of: 1) the *standalone change* in assets; and, 2) the *relative change* in assets on an explanatory basis from equation (2.3). The latter examination would provide evidence to explain changes in equity. That is, the ability to explain if observed changes in equity are primarily based on changes in assets or changes in liabilities, or both.

To provide this measure of the difference between the change in total assets and the change in market price, the *total assets to market price relative delta* measure is developed for the total assets variable. This study specifies the formula for this measure using the following equation:

$$\delta AM_{t-1,t} = dA_{t-1,t} - dM_{t-1,t} \tag{E.3}$$

Where $\delta AM_{t-1,t}$ is a firm's change in total assets to its change in market price from time $t-1$ to a single incremental forward time period, t. This study terms the $\delta AM_{t-1,t}$ as the *total assets to market price relative delta*. The $\delta AM_{t-1,t}$ is evaluated as the difference between $dA_{t-1,t}$: the change in the log financial statement *total assets* accounting total for the unit time period $t-1$ to t, termed in this study as the *total assets delta* or simply as the *assets delta*; and, $dM_{t-1,t}$: the change in *market price* for the same unit time period $t-1$ to t.

Presenting equation (E.3) in log form gives:

$$\delta AM_{t-1,t} = ln\left(\frac{A_t}{A_{t-1}}\right) - ln\left(\frac{P_t}{P_{t-1}}\right) \tag{E.4}$$

Where the expression $ln(A_t/A_{t-1})$ is the log change in the *total assets* accounting total from time $t-1$ to t. The variable A_t is the *total assets* accounting total at time t, and A_{t-1} is the *total assets* accounting total at time $t-1$. The expression $ln(P_t/P_{t-1})$ is the log change in *market price* for the same time period $t-1$ to t. The variable P_t is the market price at time period t, and P_{t-1} is the *market price* at time $t-1$.

E.1.3 Total Liabilities to Market Price Relative Delta

From the accounting equation presented in equation (2.3), a measure may be specified to determine the difference between the change in total liabilities and the change in market price. This measure, would in principle, allow this study to determine the level of the change in balance sheet assets and liabilities totals to the change in market price before and after the 2005 accounting change.

Same as with the total assets variable (see Appendix E.1.2), such a measure would allow the examination of: 1) the *standalone change* in liabilities; and, 2) the *relative change* in liabilities on an explanatory basis from equation (2.3). The latter examination would provide evidence to explain changes in equity and also assets. That is, the ability to explain if observed changes in equity are primarily based on changes in liabilities or changes in assets, or both.

To provide this measure of difference between the change in total liabilities and the change in market price, the *total liabilities to market price relative delta* measure is developed for the total liabilities variable. This study specifies the formula for this measure using the following equation:

$$\delta LM_{t-1,t} = dL_{t-1,t} - dM_{t-1,t} \tag{E.5}$$

Where $\delta LM_{t-1,t}$ is a firm's change in total liabilities to its change in market price from time $t-1$ to a single incremental forward time period, t. This study terms the $\delta LM_{t-1,t}$ as the *total liabilities to market price relative delta*. The $\delta LM_{t-1,t}$ is evaluated as the difference between $dL_{t-1,t}$: the change in the log financial statement *total liabilities* accounting total for the unit time period $t-1$ to t, termed in this study as the *total liabilities delta*, or simply as the *liabilities delta*; and, $dM_{t-1,t}$: the change in *market price* for the same unit time period $t-1$ to t.

Presenting equation (E.5) in log form gives:

$$\delta LM_{t-1,t} = ln\left(\frac{L_t}{L_{t-1}}\right) - ln\left(\frac{P_t}{P_{t-1}}\right) \tag{E.6}$$

Where the expression $ln(L_t/L_{t-1})$ is the log change in the *total liabilities* accounting total at time $t-1$ to t, the variable L_t is the *total liabilities* accounting total at time t, and L_{t-1} is the *total liabilities* accounting total at time $t-1$. The expression $ln(P_t/P_{t-1})$ is the log change in *market price* for the same time period $t-1$ to t. The variable P_t is the market price at time period t, and P_{t-1} is the *market price* at time $t-1$.

E.1.4 Net Income to Market Price Relative Delta

The development of a measure to determine the difference between the change in net income and the change in market price, in principle, would allow this study to determine the level of the change in net income to the change in market price before and after the 2005 accounting change.

Such a measure would allow the examination of: 1) the *standalone change* in net income; and, 2) the *relative change* in net income as a comparison and on an explanatory basis to changes in equity, assets and liabilities. The latter examination would provide evidence to determine if changes in equity, assets and liabilities were reflected by changes in net income. This study specifies the formula to calculate the change in net income to the market price relative delta measure by the following equation:

$$\delta IM_{t-1,t} = dI_{t-1,t} - dM_{t-1,t} \tag{E.7}$$

Where $\delta IM_{t-1,t}$ is a firm's change in net income to its change in market price from time $t-1$ to a single incremental forward time period, t, this study terms the $\delta IM_{t-1,t}$ as the *net income to market price relative delta*. The $\delta IM_{t-1,t}$ is evaluated as the difference between $dI_{t-1,t}$: the change in the log financial statement *net income* accounting total for the unit time period $t-1$ to t, termed in this study as the *net income delta*; and, $dM_{t-1,t}$: the change in *market price* for the same unit time period $t-1$ to t.

Presenting equation (E.7) in log form gives:

$$\delta IM_{t-1,t} = ln\left(\frac{I_t}{I_{t-1}}\right) - ln\left(\frac{P_t}{P_{t-1}}\right) \tag{E.8}$$

Where the expression $ln(I_t/I_{t-1})$ is the log change in the *net income* accounting total at time $t-1$ to t, the variable I_t is the *net income* accounting total at time t, and I_{t-1} is the *net income* accounting total at time $t-1$. The expression $ln(P_t/P_{t-1})$ is the log change in *market price* for the same time period $t-1$ to t. The variable P_t is the market price at time period t, and P_{t-1} is the *market price* at time $t-1$.

APPENDIX F APPROACH FOR CHANGE IN ACCOUNTING TOTALS AND MARKET PRICE RETURN REGRESSIONS

From the Fama and French (2008) specification for the *book delta* to *market delta* presented in Appendix B and the relative delta specifications presented in Appendix E, it is possible to test the regressive relationship between the change in key financial statement accounting totals (specified in Section 2.8) and the change in market price[53]. This appendix details the regressions applied to examine this relationship.

The results from these regressions are expected to provide a guide to the statistical relationship between the accounting and market price change variables that make up the relative delta. It is also expected that these results may provide evidence to evaluate this study's null hypothesis. This study uses the Fama and French (2008) cross-sectional regression approach and the Jensen, Black and Scholes (1972) time series regression approach.

F.1 Cross-Sectional Regression

This section presents the cross-sectional regressions applied to test the relationships between the accounting and market price change variables. These regressions are guided by the approach specified by Fama and French (2008).

F.1.1 Change in Accounting Totals and Market Price Return

The cross-sectional regression approach is applied to evaluate the relationship between a chosen independent variable and a dependent variable. The cross-sectional regression approach applied in this study takes the following general form:

$$R_{d:t} = b_t dR_{i:t} + a_{d:t} + e_t \tag{F.1}$$

[53] From Fama and French (2008) it would be acceptable to refer to the change in market price as the market price return or simply as the return.

Where for a time period t, generally one year, R_d represents the dependent or explained variable; R_j represents the independent or explanatory variable; b is the slope representing the relationship between the independent variable to the dependent variable; a_d is the intercept representing the level of the dependent variable if the independent variable were zero; and, e the error term representing the difference between the observed measure for the dependant variable, R_d, and its predicted measure using the regression equation (F.1).

By applying the cross-sectional regression approach to test this research's null hypothesis, it would be expected that to strengthen the null hypothesis the relationships observed would be closer to unity after the 2005 accounting change when compared to before. That is, the slope parameter, b_t in equation (F.1), that measures the relationship between the accounting and the market price change variables, is expected to be closer to 1 after the 2005 accounting change when compared to before.

F.1.2 Change in Total Equity and Market Price Return

The cross-sectional regression applied to evaluate the relationship between the change in total shareholders' equity and the change in market price takes the following general form:

$$dM_t = b_t dE_t + a_t + e_t \qquad \text{(F.2)}$$

In this regression, for the banks surveyed: dM_t is the sample firms' average change in market price for the year t; dE_t is the sample firms' average change in total shareholders' equity for the year t; b_t is the slope representing the relationship between the average change in total shareholders' equity and the average market price return; a_t is the intercept and represents the level of market price return if the average change in total shareholders' equity were zero; and, e_t the error representing the difference between the observed average return and the regression model return.

F.1.3 Change in Total Assets and Market Price Return

The cross-sectional regression applied to evaluate the relationship between the change in total assets and the change in market price takes the following general form:

$$dM_t = b_t dA_t + a_t + e_t \tag{F.3}$$

In this regression, for the banks surveyed: dM_t is the sample firms' average change in market price for the year t; dA_t is the sample firms average change in total assets for year t; b_t is the slope representing the relationship between the average change in total assets and the average market price return; a_t is the intercept, and represents the level of market price return if the average change in total assets were zero; and, e_t the error representing the difference between the observed average return and the regression model return.

F.1.4 Change in Total Liabilities and Market Price Return

The cross-sectional regression applied to evaluate the relationship between the change in total liabilities and the change in market price takes the following general form:

$$dM_t = b_t dL_t + a_t + e_t \tag{F.4}$$

In this regression, for the banks surveyed: dM_t is the sample firms average change in market price for the year t; dL_t is the sample firms average change in total liabilities for year t; b_t is the slope representing the relationship between the average change in total liabilities and the average market price return; a_t is the intercept and represents the level of market price return if the average change in total liabilities were zero; and, e_t the error representing the difference between the observed average return and the regression model return.

F.1.5 Change in Net Income and Market Price Return

The cross-sectional regression applied to evaluate the relationship between the change in net income and the change in market price takes the following general form:

$$dM_t = b_t dI_t + a_t + e_t \tag{F.5}$$

In this regression, for the banks surveyed: dM_t is the sample firms' average change in market price for the year t; dI_t is the sample firms average change in net income for year ; b_t is the slope representing the relationship between the average change in net income and the average market price return; a_t is the intercept and represents the level of market price return if the average change in net income were zero; and, e_t is the error representing the difference between the observed average return and the regression model return.

F.2 Time Series Regression

This study also tests its null hypothesis by applying the time series regression approach specified by Jensen, Black and Scholes (1972).

F.2.1 Change in Accounting Totals and Market Price Return

This study applies the time series regression approach to evaluate the relationship between a chosen independent variable and a dependent variable. The time series regression approach applied in this study takes the following general form:

$$R_{d:t,T} = b_{t,T} dR_{i:t,T} + a_{d:t,T} + e_{t,T} \qquad \text{(F.6)}$$

Where for a time period $t = 1,2, \dots, T$: R_d represents the dependent or explained variable; R_i represents the independent or explanatory variable; b is the slope representing the relationship between the independent variable to the dependent variable; a_d is the intercept representing the level of the dependent variable if the independent variable were zero; and, e the error term representing the difference between the observed measure for the dependent variable, R_d, and its predicted measure using regression (F.6).

This research applies the same rationale to test its null hypothesis using the time series regression approach as it does with the cross-sectional regression approach. By applying the time series regression approach, it would be expected that, to strengthen the null hypothesis, any relationship observed would be closer to unity after the 2005 accounting change when compared to before. That is, the slope parameter, $b_{t,T}$ in equation (F.6), that measures the relationship between the accounting and the market price change variables, is expected to be closer to 1 after the 2005 accounting change when compared to before.

The time series regressions are applied over three time periods specified by a total time period from 1994 to 2008, and sub-time periods 1994 to 2004 and 1994 to 2007.

F.2.2 Change in Total Equity and Market Price Return

The time series regression applied to evaluate the relationship between the change in total shareholders' equity and the change in market price takes the following general form:

$$dM_{t,T} = b_{t,T} dE_{t,T} + a_{t,T} + e_{t,T} \tag{F.7}$$

In this regression, for the firms surveyed: t represents the year count from the beginning year 1994 to the end year T; T represents the final year for the time series regressions, that is 2004, 2007 and 2008; $dM_{t,T}$ is the average change in market price for the sample firms at year t, with averages calculated on a yearly basis for the time period t to T; $dE_{t,T}$ is the average change in total shareholders' equity for the sample firms at year t, with averages calculated on a yearly basis for the time period t to T; $b_{t,T}$ is the slope representing the relationship between the yearly average change in total shareholders' equity and the average change in market price for the time period t to T; $a_{t,T}$ is the intercept and represents the level of average market price change if the yearly average change in total shareholders' equity were zero; and, $e_{t,T}$ the error representing the difference between the actual yearly average change in market price to the regression model's yearly average change in market price.

F.2.3 Change in Total Assets and Market Price Return

The time series regression applied to evaluate the relationship between the change in total assets and the change in market price takes the following general form:

$$dM_{t,T} = b_{t,T} dA_{t,T} + a_{t,T} + e_{t,T} \tag{F.8}$$

In this regression, for the firms surveyed: t represents the year count from the beginning year 1994 to the end year T; T represents the final year for the time series regressions, that is 2004, 2007 and 2008; $dM_{t,T}$ is the average change in market price for the sample firms at year t, with averages calculated on a yearly basis for the time period t to T; $dA_{t,T}$ is the average change in total assets for the sample firms at year t, with averages calculated on a yearly basis for the time period t to T; $b_{t,T}$ is the slope representing the relationship between the yearly average change in total assets and the average change in market price for the time period t to T; $a_{t,T}$ is the intercept and represents the level of average market price change if the yearly average change in total assets were zero; and, $e_{t,T}$ the error representing the difference between the actual yearly average change in market price to the regression model's yearly average change in market price.

F.2.4 Change in Total Liabilities and Market Price Return

The time series regression applied to evaluate the relationship between the change in total liabilities and the change in market price takes the following general form:

$$dM_{t,T} = b_{t,T}dL_{t,T} + a_{t,T} + e_{t,T} \qquad \text{(F.9)}$$

In this regression, for the firms surveyed: t represents the year count from the beginning year 1994 to the end year T; T represents the final year for the time series regressions, that is 2004, 2007 and 2008; $dM_{t,T}$ is the average change in market price for the sample firms at year t, with averages calculated on a yearly basis for the time period t to T; $dL_{t,T}$ is the average change in total liabilities for the sample firms at year t, with averages calculated on a yearly basis for the time period t to T; $b_{t,T}$ is the slope representing the relationship between the yearly average change in total liabilities and the average change in market price for the time period t to T; $a_{t,T}$ is the intercept and represents the level of average market price change if the yearly average change in total liabilities were zero; and, $e_{t,T}$ the error representing the difference between the actual yearly average change in market price to the regression model's yearly average change in market price.

F.2.5 Change in Net Income and Market Price Return

The time series regression applied to evaluate the relationship between the change in net income and the change in market price takes the following general form:

$$dM_{t,T} = b_{t,T} dI_{t,T} + a_{t,T} + e_{t,T} \quad \text{(F.10)}$$

In this regression, for the firms surveyed: t represents the year count from the beginning year 1994 to the end year T; T represents the final year for the time series regressions, that is 2004, 2007 and 2008; $dM_{t,T}$ is the average change in market price for the sample firms at year t, with averages calculated on a yearly basis for the time period t to T; $dI_{t,T}$ is the average change in net income for the sample firms at year t, with averages calculated on a yearly basis for the time period t to T; $b_{t,T}$ is the slope representing the relationship between the yearly average change in net income and the average change in market price for the time period t to T; $a_{t,T}$ is the intercept and represents the level of average market price change if the yearly average change in net income were zero; and, $e_{t,T}$ the error representing the difference between the actual yearly average change in market price to the regression model's yearly average change in market price.

APPENDIX G APPROACH FOR ACCOUNTING TO MARKET PRICE RELATIVE DELTA AND VALUE-AT-RISK REGRESSIONS

The regressions specified in this appendix are applied to test the statistical significance of this study's null hypothesis. These regressions specify the relationship between the accounting to market price relative delta and the market price return Value-at-Risk.

G.1 Total Equity Regression

For a time period t the regression to test the relationship between the total equity to market price relative delta and the market price Value-at-Risk is given by:

$$V_{dM_t} = b_t(dE_t - dM_t) + a_t + e_t \quad \text{(G.1)}$$

Where, for a time period t, $dE_t - dM_t$ represents the total equity to market price relative delta measure, V_{dM_t}represents the Value-at-Risk for the market price variable, b_t represents the slope of the regression equation, a_t represents the intercept for the regression, and e_t is the error term that represents the difference between the actual value for V_{dM_t} and its modelled value using the regression equation (G.1).

G.2 Total Assets Regression

For a time period t the regression to test the relationship between the total assets to market price relative delta and the market price return Value-at-Risk is given by:

$$V_{dM_t} = b_t(dA_t - dM_t) + a_t + e_t \quad \text{(G.2)}$$

Where, for a time period t, $dA_t - dM_t$ represents the total assets to market price relative delta measure. The definitions for V_{dM_t} and a_t are the same as in equation (G.1). The parameter e_t is the error term that represents the difference between the actual value for V_{dM_t} and its modelled value using the regression equation (G.2).

G.3 Total Liabilities Regression

For a time period t the regression to test the relationship between the total liabilities to market price relative delta and the market price return Value-at-Risk is given by:

$$V_{dM_t} = b_t(dL_t - dM_t) + a_t + e_t \quad \text{(G.3)}$$

Where, for a time period t, $dL_t - dM_t$ represents the total liabilities to market price relative delta measure. The definitions for V_{dM_t} and a_t are the same as in equation (G.1). The parameter e_t is the error term that represents the difference between the actual value for V_{dM_t} and its modelled value using the regression equation (G.3).

G.4 Net Income Regression

For a time period t the regression to test the relationship between the net income to market price relative delta and the market price Value-at-Risk is given by:

$$V_{dM_t} = b_t(dI_t - dM_t) + a_t + e_t \quad \text{(G.4)}$$

Where, for a time period t, $dI_t - dM_t$ represents the net Income to market Price relative delta measure. The definitions for V_{dM_t} and a_t are the same as in equation (G.1). The parameter e_t is the error term that represents the difference between the actual value for V_{dM_t} and its modelled value using the regression equation (G.4).

APPENDIX H DERIVATION AND PROOF OF ACCOUNTING VALUE-AT-RISK

This appendix details the derivation of the accounting Value-at-Risk measurement approach applied in this study.

In Table D.1 the *relative delta* measure equality $dAC - dM = 0$ represents the effect exhibited when changes in the accounting variable during a specified time interval relate directly to changes in the market price variable for the same time interval. This observation is simply how the book-to-market measure is interpreted by Fama and French (1992, 2008) during the shift between growth stocks and value stocks.

It would then be reasonable to state that the change in the accounting measure is simply reporting the change in the market price. In interpreting this effect further, it would be reasonable to state that the equality $dAC - dM = 0$ represents a state of equilibrium where the level of risk exhibited by the market price variable would be the same as, or matched by, the accounting variable.

In such a state of equilibrium, it would be reasonable to declare a firm's market price return Value-at-Risk would be matched by its accounting Value-at-Risk. Where the accounting Value-at-Risk is measured using the accounting totals. This latter measure attributed to the accounting variable has been reported by HSBC (2005), Barclays (2005) and Dowd (2003). This study develops the *relative delta* equilibrium relationship $dAC - dM = 0$ and market price return Value-at-Risk to derive a measure of accounting Value-at-Risk.

H.1 Derivation and Proof of Accounting Value-at-Risk from Market Price Value-at-Risk and the Relative Delta

For a time period t consider the relative delta measure where the change in the market price variable is reported by the change in the accounting variable, thus:

$$dAC_t - dM_t = 0 \tag{H.1}$$

Where dAC_t is the change in the accounting variable during the time interval specified by t and dM_t is the change in the market price variable during the same time interval.

It follows that the Value-at-Risk measured for the change in the accounting variable, represented by dAC_t, and the Value-at-Risk measured for the change in the market price variable, represented by dM_t, can be specified by:

$$V_{dAC_t} - V_{dM_t} = 0 \tag{H.2}$$

Where V_{dAC_t} represents the Value-at-Risk measure for the accounting variable during the time period t, and V_{dM_t} represents the Value-at-Risk measure for the market price variable for the same time period.

Rearranging equation (H.2) gives:

$$V_{dM_t} = V_{dAC_t} \tag{H.3}$$

Introducing to RHS of equation (H.3) the relative delta component from equation (H.1) gives:

$$V_{dM_t} = (dAC_t - dM_t) + V_{dAC_t} \tag{H.4}$$

Where V_{dAC_t} represents the measure of accounting Value-at-Risk.

It is possible to test the relationship specified in equation (H.4) using the following regression:

$$V_{dM_t} = b_t(dAC_t - dM_t) + a_t + e_t \tag{H.5}$$

Where V_{dM_t} represents the Value-at-Risk for the market price variable for time interval t (in this regression, this Value-at-Risk variable contains the accounting Value-at-Risk component), b_t represents the slope of the regression equation for time interval t, $dAC_t - dM_t$ represents the relative delta measure for time interval t, a_t represents the intercept for the regression at time interval t (in this regression, this variable represents the market price return Value-at-Risk that does not contain the accounting Value-at-Risk component), and e_t is the error term that represents the difference between the actual value for V_{dM_t} and its modelled value using the regression equation (H.5) for the time interval t.

APPENDIX I ACCOUNTING VALUE-AT-RISK

A measure of accounting Value-at-Risk is presented in HSBC (2005), Barclays (2005) and Dowd (2003). To measure *accounting Value-at-Risk* by directly applying the models specified in Section 2.12 involves several historical time periods. JPMorgan Chase and Reuters (1996) specifies two years or 500 days of historical data points, and the Basel (2011) framework specifies a minimum of three years or 800 days. This study computes the market price return Value-at-Risk based on both the 500 and 800 days of historical price information. Applying the same approach to measure Value-at-Risk for the accounting total variables would mean having at most historical accounting total data for the past 800 days.

For banking firms, this study primarily tests audited accounting totals reported in annual financial statements. The total time period principally examined is from 1992 to 2008. This time range provides 17 data points. It is mathematically possible to apply the Value-at-Risk models specified in Section 2.12 to evaluate this *accounting Value-at-Risk* for an accounting total using the 17 historical data points.

The historical simulation Value-at-Risk model specified in Section 2.12.2 could be applied to evaluate and backtest a one-year time horizon accounting Value-at-Risk. Using this approach, to compute the 2008 year accounting Value-at-Risk, 16 historical data points (from 1992 to 2007) may be used. This measure will provide a confidence level (that is less than 100%) at approximately the 93.75% (computed using $[15/16] \times 100\%$). To compute the one year time horizon accounting Value-at-Risk for the remaining years (2007 year to 1992), there would be a proportional decrease in the number of data points available for the Value-at-Risk calculation, with a resulting decrease in confidence level. That is, a maximum of 15 data points would be available to evaluate Value-at-Risk for the year 2007 and 2008, at a confidence level of 93.33%; 14 data points for the year 2006, 2007 and 2008, at a confidence level of 92.86%; continuing to 2 data points required for the year 1994 to 2008, at a confidence level of 50%. To illustrate, 1 data point would be required for the year 1993 to 2008, technically at an uncertain confidence level of 0%.

I.1 Generalised Accounting Value-at-Risk

Although it is mathematically possible to compute accounting Value-at-Risk by directly applying the historical simulation Value-at-Risk model using only 17 data points, this research develops an alternative approach. This study estimates accounting Value-at-Risk by utilising the relationship between the market price Value-at-Risk and the relative delta measure. This approach is developed by applying the following relationship.

At a state of *equilibrium*, equating equation (H.1): $dAC_t - dM_t = 0$, and equation (H.2): $V_{dAC_t} - V_{dM_t} = 0$ gives:

$$V_{dAC_t} - V_{dM_t} = dAC_t - dM_t \qquad \text{(I.1)}$$

Where V_{dAC_t} for time period t represents the Value-at-Risk measure for the accounting variable (termed the accounting Value-at-Risk), and V_{dM_t} represents the Value-at-Risk measure for the market price return variable (termed the market price return Value-at-Risk) for the same time period. dAC_t is the change in the accounting variable during the time interval specified by t, and dM_t is the change in the market price variable during the same time interval.

Rearranging equation (I.1) to make accounting Value-at-Risk the subject provides the following general form:

$$V_{dAC_t} = (dAC_t - dM_t) + V_{dM_t} \qquad \text{(I.2)}$$

Where the definitions for the variables in equation (I.2) are the same as in equation (I.1).

I.2 Total Equity Value-at-Risk

For a time period t the formula for the *change in total equity* Value-at-Risk estimated by applying the total equity to market price relative delta and the market price Value-at-Risk is given by:

$$V_{dE_t} = (dE_t - dM_t) + V_{dM_t} \qquad \text{(I.3)}$$

Where for the time period t, V_{dE_t} represents the Value-at-Risk measure for the change in the total equity variable, and V_{dM_t} represents the Value-at-Risk measure for the market price return variable for the same time period. dE_t is the change in the total equity variable during the time interval specified by t, and dM_t is the change in the market price variable during the same time interval.

I.3 Total Assets Value-at-Risk

For a time period t the formula for the *change in total assets* Value-at-Risk estimated by applying the total assets to market price relative delta and the market price Value-at-Risk is given by:

$$V_{dA_t} = (dA_t - dM_t) + V_{dM_t} \tag{I.4}$$

Where for the time period t, V_{dA_t} represents the Value-at-Risk measure for the change in the total assets variable, and V_{dM_t} represents the Value-at-Risk measure for the market price return variable for the same time period. dA_t is the change in the total assets variable during the time interval specified by t, and dM_t is the change in the market price variable during the same time interval.

I.4 Total Liabilities Value-at-Risk

For a time period t the formula for the *change in total liabilities* Value-at-Risk estimated by applying the total liabilities to market price relative delta and the market price Value-at-Risk is given by:

$$V_{dL_t} = (dL_t - dM_t) + V_{dM_t} \tag{I.5}$$

Where for the time period t, V_{dL_t} represents the Value-at-Risk measure for the change in the total liabilities variable, and V_{dM_t} represents the Value-at-Risk measure for the market price return variable for the same time period. dL_t is the change in the total liabilities variable during the time interval specified by t, and dM_t is the change in the market price variable during the same time interval.

I.5 Net Income Value-at-Risk

For a time period t the formula for the *change in net income* Value-at-Risk estimated by applying the net income to market price relative delta and the market price Value-at-Risk is given by:

$$V_{dI_t} = (dI_t - dM_t) + V_{dM_t} \tag{I.6}$$

Where for the time period t, V_{dI_t} represents the Value-at-Risk measure for the change in the net income variable, and V_{dM_t} represents the Value-at-Risk measure for the market price return variable for the same time period. dI_t is the change in the net income variable during the time interval specified by t, and dM_t is the change in the market price variable during the same time interval.

APPENDIX J ACCOUNTING VALUE-AT-RISK, MARKET PRICE VALUE-AT-RISK AND RELATIVE DELTA

This appendix presents the implied relationship between the relative delta measure and the level of difference between the accounting Value-at-Risk and the market price Value-at-Risk. This relationship's implication to this study is also highlighted.

The general accounting Value-at-Risk formula developed in this research is specified in equation (J.1):

$$V_{dAC_t} = (dAC_t - dM_t) + V_{dM_t} \tag{J.1}$$

Where, for time period t, V_{dAC_t} represents the Value-at-Risk measure for the change in the accounting variable, and V_{dM_t} represents the Value-at-Risk measure for the market price return variable for the same time period. dAC_t is the change in the accounting variable during the time interval specified by t, and dM_t is the change in the market price return variable during the same time interval.

Equation (J.1) proposes a measure to assign a level of Value-at-Risk to the accounting variable. In this study this measure is termed the *accounting Value-at-Risk*. Although the accounting Value-at-Risk alone may hold significance as a measure for risk attached to accounting totals, this study evaluates its significance comparatively to the market price Value-at-Risk. The formula applied to compare the accounting and market price Value-at-Risk measures is simply the difference between these two Value-at-Risk variables. This relationship may be symbolised by:

$$V_{dAC_t} - V_{dM_t} \tag{J.2}$$

Where the definitions for the variables in equation (J.2) are the same as in equation (J.1).

Examining the expression presented in (J.2), it becomes apparent that it is simply the right-hand side of the Value-at-Risk and relative delta relationship presented in equation (I.1). For convenience, reproducing equation (I.1) presents, $V_{dAC_t} - V_{dM_t} = dAC_t - dM_t$.

The left-hand side (LHS) of equation (I.1) specifies the expression:

$$dAC_t - dM_t \tag{J.3}$$

The expression presented in (J.3) is the accounting totals to market price relative delta. Thus this relative delta may be applied to estimate the difference between the accounting Value-at-Risk and the market price return Value-at-Risk.

In addition to the market price Value-at-Risk, it would be ideal to compute the accounting Value-at-Risk by applying the sophisticated models presented in Section 2.12 and referenced in Appendix I. However, the proposition that the relative delta has the ability to measure the difference in accounting and market price return Value-at-Risks is the approach applied in this study. The implication that such an approach has is that it avoids the implementation of complex models, such as those presented in Section 2.12.

APPENDIX K REGULATORY CAPITAL AND REGULATORY VALUE-AT-RISK

This appendix details the adjustment proposed to the Basel regulatory capital formula. The approach applied to specify this adjustment is by building on the measure of difference between the accounting Value-at-Risk and the market price Value-at-Risk. Effectively the proposition recommends that the adjustment applied to the minimum capital requirement be calculated using the *regulatory relative delta framework*. This appendix also details how this *regulatory relative delta framework* is developed from the system of relative delta measures.

The Basel regulatory capital requirement formula presented in Section 2.10, and reproduced here specifies the following:

$$Capital\ Requirement = \frac{Total\ Regulatory\ Capital}{RWA} \quad \text{(K.1)}$$

Where the capital requirement formula in equation (K.1) represents the capital adequacy for a firm. This capital adequacy calculated using the ratio of the firm's total regulatory capital to its risk weighted assets (RWA).

It was suggested in Section 2.10 that the Basel Regulatory Framework (Basel 2011) does not specify an adjustment to take account of differences between accounting risk and the market price risk. This study proposes such an adjustment to be applied to the capital requirement *risk weighted assets* (RWA) component in formula (K.1).

The proposed adjustment to the risk weighted assets component is based on the difference between the accounting Value-at-Risk and the market price Value-at-Risk. This difference, in effect, is quantified by the relative delta. This associative relationship between the relative delta measure and the difference between the accounting Value-at-Risk and the market price Value-at-Risk is detailed in Appendix J. The relative delta measure has been developed in this study from the framework of the conventional book-to-market measure prescribed by Fama and French (1992) and Peterkort and Nielsen (2005), and the delta measure specified by Fama and French (2008).

Developing a system of relative delta equations based on the change in accounting totals, and conforming to the Value-at-Risk to relative delta relationship represented in equations (J.2): $V_{dAC_t} - V_{dM_t}$; and (J.3): $dAC_t - dM_t$, would give the following series of relationships:

$$\delta EM_t = dE_t - dM_t \quad \text{(K.2)}$$

$$\delta AM_t = dA_t - dM_t \quad \text{(K.3)}$$

$$\delta LM_t = dL_t - dM_t \quad \text{(K.4)}$$

$$\delta IM_t = dI_t - dM_t \quad \text{(K.5)}$$

Where for the series of equations (K.2), (K.3), (K.4) and (K.5) for time period t, δEM_t is a firm's total equity to market price relative delta, $dE_t - dM_t$ is the explicit difference between the change in total shareholders' equity and the change in market price; δAM_t is a firm's total assets to market price relative delta, $dA_t - dM_t$ is the explicit difference between the change in total assets and the change in market price; δLM_t is a firm's total liabilities to market price relative delta, $dL_t - dM_t$ is the explicit difference between the change in total liabilities and the change in market price; and, δIM_t is a firm's net income to market price relative delta, $dI_t - dM_t$ is the explicit difference between the change in net income and the change in market price.

The conventional accounting equation that measures the key total accounting variables used in this study is specified by: *Equity = Assets – Liabilities*. The other accounting total variable, *Net Income* is specified as the measures for the change in *Equity*, that is, the change in the level of *Assets* and *Liabilities* (IASB 2011).

By monitoring the relative delta equation for Equity, (K.2), for amounts measured on the balance sheet or income statement, any change in the level of the total equity to market price relative delta can be traced to changes in the levels of the total assets and total liabilities to market price relative deltas represented by equations (K.3) and (K.4) respectively. In addition, the net income relative delta given the net income variable's relationship to the equity, assets and liabilities variables should also reflect the change in the total equity to market price relative delta levels. In effect, the monitoring of the total equity to market price relative delta specified in equation (K.2) would have a direct relation to a firm's level of exposure to financial distress risk and to the other accounting totals, and also provide a measure for the difference between a firm's total equity Value-at-Risk and market price Value-at-Risk.

This study proposes that the risk weighted assets component (RWA) in the Basel capital requirement formula, specified in formula (K.1), is adjusted to reflect the absolute measures of the total equity to market price relative delta. The modified Basel capital requirement formula incorporating the proposed adjustment is given by:

$$Capital\ Requirement = \frac{Total\ Regulatory\ Capital}{RWA \times Abs(\delta EM_t)} \qquad \text{(K.6)}$$

Where $Abs(\delta EM_t)$ represents the positive or absolute measure of the total equity to market price relative delta for a given time period t, and is guided by the relative delta measure specification presented in Table D.1. The definitions for the other variables in equation (K.6) are the same as in equation (K.1).

It may be contended that by monitoring the series of four relative delta equations (K.2), (K.3), (K.4) and (K.5), any change in one of the relative deltas, including the total equity to market price relative delta, would reflect the level of a firm's exposure to financial distress risk.

This study also proposes that the risk weighted assets component (RWA) in the Basel capital requirement formula is adjusted to reflect the highest absolute measure of the difference component from the relative delta equations. That is, if the highest level recorded for a given time period is from the total equity to market price relative delta, then this relative delta is used to adjust the capital requirement formula. If, however, the total assets to market price relative delta registers a higher level, then this level would be used to adjust the capital requirement formula. The same criterion is applied to the total liabilities and net income relative delta levels. Such an adjustment to the Basel regulatory capital formula is presented by the following formula:

$$Capital\ Requirement = \frac{Total\ Regulatory\ Capital}{RWA \times Abs(\delta_t)} \qquad \text{(K.7)}$$

Where $Abs(\delta_t)$ represents the positive or absolute measure of the *highest accounting total to market price return relative delta* for a given time period t. The same as with equation (K.6), equation (K.7) is guided by the relative delta measure specification presented in Table D.1. The definitions for the other variables in equation (K.7) are the same as in equation (K.1).

This study applies the approach presented in equation (K.7) to the banks in the UK banking sector on a yearly basis from 1994 to 2008. Specifically this study applies the adjustment to the minimum 8% level of total regulatory capital specified in the Basel III framework (Basel 2011).

This study proposes that the implementation of this measure uses a threshold based application of the adjustment applied to the risk weighted assets (RWA). Such that, a 0% threshold would apply the maximum level of the relative delta adjustment to the RWA, and for example, a 50% threshold applies the relative delta adjustment if the relative delta level is greater than 50%. That is, the maximum change for an accounting total has seen an increase or decrease of more than 50% compared to the change in the market price variable. A 100% threshold would apply the relative delta adjustment to the RWA if the relative delta measure were greater than a 100%.

The threshold levels presented in this study may be monitored and set internally by a banking firm as part of its risk management process. Alternatively, the threshold levels may be applied by regulatory authorities that have the ability to monitor banking firms at national and international levels. In accordance with the relative delta specifications presented in Table D.1, this study proposes that high thresholds could be set for banks that continually exhibit low financial distress risk. That is, banks that exhibit low relative delta levels at about the 40% level. With medium to low thresholds applied to banks that continually exhibit medium to high levels of exposure to financial distress risk. That is, medium to high relative delta levels at about the 100% and 200% levels respectively.

Applying this framework would allow the Basel regulatory equation (see equation (K.1)) to factor in any persistent and significant accounting to market price differences. It is envisaged that such an application would encourage banks at the firmwide level to monitor this effect closer. In addition, the regulatory framework, the accounting framework, and the risk management framework now have a measure that monitors the absolute level of a firm's financial distress risk based on the effect between accounting totals and the market price, an effect that is measured by the relative delta measure.

It could be contended that firms may smooth levels of accounting totals or take other actions, such as issue shares, to adjust levels of relative delta, with the aim to lessen the level of regulatory capital requirement. However, the proposed relative delta measure can be applied primarily as a risk management tool at the firm level to determine the accounting total variables that may be contributing to large relative delta levels when compared to the market price variables. Theoretically, it is then possible to investigate the accounting totals at an item or instrument level to determine the cause of significant increases to relative delta levels. Such an approach would provide the opportunity for a firm to take appropriate steps to mitigate any recognised financial distress risk exposures at the item or instrument level. This action carried out prior to any of these exposures recorded as *persistent observations* at the regulatory level.

The approach detailed in this appendix, that applies a system of relative delta equations to provide an adjustment for the Basel minimum regulatory capital, is termed in this study as the *regulatory relative delta framework*.

APPENDIX L ADJUSTMENT TO THE MINIMUM BASEL REGULATORY CAPITAL FOR UK BANKS USING THE REGULATORY RELATIVE DELTA

The Basel regulatory framework (Basel 2011) specifies that a banking firm at minimum should provision an 8% capital reserve for 100% of assets that are considered to be at risk. For the banks registered with LSE's UK banking sector an adjustment applied to the 8% capital reserve, effectively alters the 8% capital reserve for the 2004 year by 0.2%. This adjustment is computed using the *regulatory relative delta framework* developed by extending the Fama and French (2008) book-to-market ratio treatment. This adjustment is discussed in this appendix. For years 2005, 2007 and 2008 the adjustment effectively increases the minimum capital reserve requirement by 9.5%, 36.3% and 122.2% respectively. Table L.1 presents these yearly-adjusted changes to the 8% Basel minimum capital requirement from 2004 to 2008.

Table L.1 Adjusted Minimum Basel Regulatory Capital for UK Banks

The table shows the estimated average change to the minimum Basel regulatory capital requirement, adjusted by the level of difference between the change in total equity and change in market price for banks registered with the LSE's UK banking sector. The Time column presents the Year and Period columns. The Year and Period columns present the corresponding year and time period, respectively, for the regulatory relative delta measure presented in the ΔR column. The *Change in 8% Capital Requirement (%)* column presents the adjustment applied to the Basel minimum regulatory capital, at the 8% level, using the formula: $8\% \times (1 + \Delta R)$ formula. The Increase (%) column presents the percentage increase from the 8% minimum capital requirement level to the adjusted level presented in the *Change in 8% Capital Requirement (%)* column.

Time		ΔR[a]	*Change in 8% Capital Requirement (%)*	Increase (%)
Year	Period		$8\% \times (1 + \Delta R)$	
2004	01-Jan-04 to 31 Dec-04	0.002	8.02	0.2
2005	01-Jan-05 to 31-Dec-05	0.095	8.76	9.5
2006	01-Jan-06 to 31-Dec-06	0.007	8.06	0.7
2007	01-Jan-07 to 31-Dec-07	0.363	10.90	36.3
2008	01-Jan-08 to 31-Dec-08	1.222	17.78	122.2

Table note: [a] ΔR is the Total Equity to Market Price Regulatory Relative Delta calculated by applying equation (3.51).

Table L.1[54] shows the modified delta component, ΔR, based on the Fama and French (2008) time dependent treatment of the book-to-market ratio, and exhibits the effective adjustment applied to the 8% minimum capital reserve for the fiscal years 2004 to 2008. The ΔR component is developed in this study as the *regulatory relative delta* measure and is specified in equations (L.1) and (L.2). This ΔR measure is evaluated from the log change in total equity, ΔE, and the log change in market price, ΔM. Specifying 1st January by $t-1$ and 31st December by t, then ΔR is computed using:

$$\Delta R_{t-1,t} = \Delta E_{t-1,t} - \Delta M_{t-1,t} \tag{L.1}$$

Applying the notation from Fama and French (2008), the log change in total equity (book value) becomes dE, and the log change in market price or the market price return becomes dM. Then maintaining the ΔR symbol to allow for its development in this study, equation (L.1) may be described by:

$$\Delta R_{t-1,t} = dE_{t-1,t} - dM_{t-1,t} \tag{L.2}$$

The adjustment applied to the minimum regulatory capital, presented in Table L.1 in the column *Change in 8% Capital Requirement* is specified by:

$$Adjusted\ Regulatory\ Capital_{t-1,t} = 8\% \times (1 + \Delta R_{t-1,t}) \tag{L.3}$$

As detailed in Section 3.9.6, the *regulatory relative delta framework* specified in (L.3) is developed to a sophisticated level in this study. As indicated earlier, the building blocks for this framework are provided by extending the Fama and French (2008) book-to-market ratio treatment. The first part of this extension is termed the *relative delta measure*. The specification for the relative delta is detailed in Appendix C. It can be seen by examining Section 3.2.4 and 3.9.6 that the regulatory relative delta framework is a special implementation of the relative delta measurement model.

[54] For ease of referencing, Table L.1 reproduces Table 4.25 presented in Section 4.10.

APPENDIX M QUANTITATIVE ANALYTICAL APPROACHES APPLIED IN THIS STUDY

This appendix presents the principle quantitative analytical approaches applied in this study. These are descriptive statistics and descriptive distribution statistics, and correlation and regression analysis. In addition, the formulas applied to calculate the change in variables and the market price return are detailed.

M.1 Descriptive Statistics

This study applies a number of statistical measures based on the *statistical mean* and *statistical standard* deviation. The foundations for these measures are detailed in the following sections.

M.1.1 Time Series Data Mean and Standard Deviation

For the time series periods: $t = 1, 2, ..., T$, the random variable Ω is applied to represent a population of interest. Populations that would be examined as a basis of this variable that represents an observable and quantifiable attribute, are the Gross Domestic Product (GDP), stock market, interest rate, and foreign exchange indices. The *statistical mean* (also termed the average) of this random variable, Ω, is given by:

$$\mu_T = \frac{1}{T}\sum_{t=1}^{T} \Omega_t \qquad \text{(M.1)}$$

Where:
μ_T = *population statistical mean* at time T
Ω_t = random variable at time t
T = maximum time index
t = time index

From the *population statistical mean* calculated using equation (M.1), the population's *statistical standard deviation* is given by:

$$\sigma_T = \sqrt{\frac{1}{T}\sum_{t=1}^{T}(\Omega_t - \mu_T)^2} \qquad \text{(M.2)}$$

Where:

σ_T = population statistical standard deviation at time T

μ_T = population statistical mean at time T

Ω_t = random variable at time t

T = maximum time index

t = time index

In addition to the population standard deviation specified in equation (M.2), this study calculates the standard deviation for samples. The sample standard deviation is calculated in a similar way to the population standard deviation. However, a degrees of freedom adjustment is applied to the observation count, T. To calculate the sample standard deviation, a $(T - 1)$ adjustment is applied to equation (M.2). This adjustment effectively substitutes the $\frac{1}{T}$ population parameter with a sample parameter, $\frac{1}{(T-1)}$.

M.1.2 Cross-Sectional Data Mean and Standard Deviation

At time t, for a population of N firms, the *statistical mean* for a random variable Γ that represents for all N firms an observable and quantifiable attribute, is given by:

$$\mu_{N,t} = \frac{1}{N}\sum_{i=1}^{N}\Gamma_{i,t} \qquad \text{(M.3)}$$

Where:

$\mu_{N,t}$ = population statistical mean for N firms at time t

$\Gamma_{i,t}$ = random variable for the i^{th} firm at time t

N = number of firms that represent the population at time t

i = firm index

t = time index

From the population's statistical mean calculated using equation (M.3), the population's *statistical standard deviation* of N firms is given by:

$$\sigma_{N,t} = \sqrt{\frac{1}{N}\sum_{i=1}^{N}(\Gamma_{i,t} - \mu_{N,t})^2} \tag{M.4}$$

Where:

$\sigma_{N,t}$ = population standard deviation for N firms at time t

$\mu_{N,t}$ = population statistical mean for N firms at time t

$\Gamma_{i,t}$ = random variable for the i^{th} firm at time t

N = number of firms that represent the population at time t

i = firm index

t = time index

M.1.3 Time Series Mean and Standard Deviation using Cross-Sectional Data

To determine the time series mean for a population of N firms comprises of two calculations. First the cross-sectional *statistical mean* for the N firms for each time period t = *1*, *2*, ..., T is calculated. Second, the *statistical mean* of the series of these cross-sectional *means* is calculated.

Using the same formula as (M.3), the formula to first calculate the cross-sectional *statistical mean* for N firms at time t is given by:

$$\mu_{N,t} = \frac{1}{N}\sum_{i=1}^{N}\Gamma_{i,t} \tag{M.5}$$

Where the parameter definitions are the same as equation (M.3).

Second, using equation (M.5) the mean for the population of N firms over the time period: t = *1*, *2*, ..., T, is calculated:

$$\mu_{N,T} = \frac{1}{T}\sum_{t=1}^{T}\mu_{N,t} \tag{M.6}$$

Where:

$\mu_{N,T}$ = population statistical mean for N firms at time T

$\mu_{N,t}$ = population statistical mean for N firms at time t

N = number of firms that represent the population at time t
T = maximum time index
t = time index

From the population's *statistical mean* calculated using equation (M.6), the population's *statistical standard deviation* for N firms is given by:

$$\sigma_{N,T} = \sqrt{\frac{1}{T}\sum_{t=1}^{T}(\mu_{N,t} - \mu_{N,T})^2} \qquad \text{(M.7)}$$

Where:
$\sigma_{N,T}$ = population statistical standard deviation for N firms at time T
$\mu_{N,t}$ = population statistical mean for N firms at time t
$\mu_{N,T}$ = population statistical mean for N firms at time T
N = number of firms that represent the population at time t
T = maximum time index
t = time index

M.1.4 Panel Data Mean and Standard Deviation

To determine the mean for a population of N firms, where a single panel of data consists of the time series periods: τ = *1*, *2*, ..., Ψ, such that the single data panel consists of $\Psi \times N$ data elements, comprises of two calculations. First the *statistical mean* for each firm over the time period τ = *1*, *2*, ..., Ψ is calculated. Second, the statistical mean of the series of these N individual *firm means* is calculated.

The formula to first calculate the statistical mean for one firm, over the time period: τ = *1*, *2*, ..., Ψ is given by:

$$\mu_{\Psi,i} = \frac{1}{\Psi}\sum_{\tau=1}^{\Psi}\Gamma_{\tau,i} \qquad \text{(M.8)}$$

Where:
$\mu_{\Psi,i}$ = population statistical mean for i^{th} firm at time Ψ
$\Gamma_{\tau,i}$ = random variable for the i^{th} firm at time τ

N = number of firms that represent the population at time Ψ

i = firm index

Ψ = maximum time index for one data panel

τ = time index within one data panel

Second, using equation (M.8) the mean for the population of N firms is calculated using the following formula:

$$\mu_{\Psi,N} = \frac{1}{N}\sum_{i=1}^{N}\mu_{\Psi,i} \tag{M.9}$$

Where:

$\mu_{\Psi,N}$ = population statistical mean for N firms at time Ψ

$\mu_{\Psi,i}$ = population statistical mean for the i^{th} firm at time Ψ

N = number of firms that represent the population at time Ψ

i = firm index

Ψ = maximum time index for one data panel

τ = time index within one data panel

Equations (M.8) and (M.9) can be abbreviated to produce the following formula:

$$\mu_{\Psi,N} = \frac{1}{N}\sum_{i=1}^{N}\left(\frac{1}{\Psi}\sum_{\tau=1}^{\Psi}\Gamma_{\tau,i}\right) \tag{M.10}$$

Where the parameter definitions are the same as equations (M.8) and (M.9).

From the population's *statistical mean* calculated using equation (M.10), the population's *statistical standard deviation* for N firms is given by:

$$\sigma_{\Psi,N} = \sqrt{\frac{1}{N}\sum_{i=1}^{N}(\mu_{\Psi,i} - \mu_{\Psi,N})^2} \tag{M.11}$$

Where:

$\sigma_{\Psi,N}$ = population standard deviation for N firms at time Ψ

$\mu_{\Psi,i}$ = population statistical mean for i^{th} firm at time Ψ

$\mu_{\Psi,N}$ = population statistical mean for N firms at time Ψ

N = number of firms that represent the population at time Ψ

i = firm index

Ψ = maximum time index for one data panel

τ = time index within one data panel

M.2 Correlation Analysis

Correlation analysis provides a measure of how closely two random variables vary together. The Pearson correlation coefficient r specified by Pearson, Jeffery, Elderton (1929), Hull (2009) and Newbold (1995) is applied in this study to quantify this relationship between selected variables. If applying the Pearson correlation approach to determine the relationship between the accounting variable, denoted by AC, and the market price variable, denoted by M, then:

M.2.1 Correlation Equations

For a given time series specified by the time values:

$$t = 1,2,\dots, T \qquad \text{(M.12)}$$

The Pearson correlation coefficient is calculated by:

$$r(AC, M) = \frac{\sum_{t=1}^{T} (AC_t - \overline{AC})(M_t - \bar{M})}{\sqrt{\sum_{t=1}^{T} (AC_t - \bar{A})^2}\sqrt{\sum_{t=1}^{T}(M_t - \bar{M})^2}} \qquad \text{(M.13)}$$

Where:

r = Pearson correlation coefficient

AC_t = accounting variables value at time t

M_t= market price variables value at time t

$\overline{AC}$ = accounting variable mean for the time series period specified between t and T

$\bar{M}$ = market variable mean for the time series period specified between t and T

T = maximum time index

t = time index

The Pearson correlation coefficient r calculated using equation (M.13) evaluates to a number between 1 and -1. If the accounting variable, AC, varies exactly in the same way as the market price variable, M, then r equates to 1 signifying perfect correlation between the variables. If the accounting variable, AC, varies exactly the opposite way as the market price variable, M, then r equates to -1 signifying negative but perfect correlation. If the accounting variable, AC, does not vary the same way as the market price variable, M, then r equates to 0 signifying an absence of correlation between the variables. For a measure of r between 1 to 0 and 0 to -1 signifies the relative strength or magnitude of the variation and its direction. This measure quantifying the relationship between the two variables (Newbold 1995).

An equivalent form of equation (M.13) presented by Newbold (1995) that provides a simpler computation of the Pearson correlation coefficient is:

$$r(AC, M) = \frac{\sum_{t=1}^{T} AC_t M_t - t\overline{AC}\,\overline{M}}{\sqrt{(\sum_{t=1}^{T} AC_t^2 - t\overline{AC}^2)(\sum_{t=1}^{T} M_t^2 - t\overline{M}^2)}} \qquad \text{(M.14)}$$

Where parameter definitions are the same as equation (M.13).

M.2.2 Correlation Significance Level

Specified by Newbold (1995), the level of significance for the Pearson correlation coefficient in equations (M.13) and (M.14) is calculated by:

$$p\text{-}value = \frac{r}{\sqrt{(1 - r^2)/(T - 2)}} \qquad \text{(M.15)}$$

Where:

p-value = probability value or the level of significance based on the students t-test, sometime referred to as the *t-score*

r = Pearson correlation coefficient

$T - 2$ = degrees of freedom

T = maximum time index

M.3 Degrees of Freedom

Degrees of freedom, as explained by Newbold (1995), specifies the number of observations minus the number of parameters estimated to evaluate a statistical measure. These measures, as specified in equation (M.15), include the *p-value*.

The degrees of freedom are generally specified by the following formula:

$$\textit{degrees of freedom} = I - \textit{number of estimated parameters} \qquad \text{(M.16)}$$

Where:
I = maximum index count

Examining the Pearson correlation coefficient in equation (M.13), there are two estimated parameters. These are the accounting variable mean and the market price variable mean. To account for these *2* estimations when determining the level of significance in equation (M.13), the correlation coefficient's *p-value* applies $T - 2$ degrees of freedom.

M.4 Regression Analysis

This study applies regression analysis as one of its principal measurement methods to determine statistical significance when testing its null hypothesis.

Regression analysis, similar to correlation analysis presented in Appendix M.2, provides a measure for the relationship between variables. Specified by Fama and French (1992, 1996, 2008) and Jensen, Black and Scholes (1972), the regression relationship differs in that it is specified using a predictive model. This predictive model is based on the variables categorised either as a dependent variable or as an independent variable. This model then establishes a *straight-line mathematical form* that estimates the dependent variable given values for the independent variable.

To test the null hypothesis in Section 3.3.1 this research applies the cross-sectional regression approach specified by Fama and French (2008), and the time series regression approach specified by Jensen, Black and Scholes (1972). Appendix O presents the cross-sectional and time series regression tests applied in this study. In general, the *mathematical form* for the *population* regression line is specified by (Newbold 1995):

$$Y_t = \alpha + \beta X_t + \epsilon_t \tag{M.17}$$

Where:
β = regression slope
Y_t = dependent variable value at time *t*
X_t = independent variable value at time *t*
α = intercept
ϵ_t = error term, representing the difference between the observed and modelled values for Y_t
t = time index

From equation (M.17), the regression analysis approach applied to determine the relationship between the accounting variable, AC, and the market price variable, M, is specified by:

$$M_t = a + bAC_t + e_t \tag{M.18}$$

Where:
b = sample regression slope
M_t = dependent market price variable at time *t*
AC_t = independent accounting variable at time *t*
a = intercept
e_t = error term, representing the difference between the observed and modelled values for M_t
t = time index

M.5 Coefficient of Determination, R^2

As informed by Newbold (1995), to indicate how well the regression line presented in equation (M.18) *fits* observed data points, the coefficient of determination R^2 is used.

M.5.1 Coefficient of Determination, R^2, Equation

The coefficient of determination is the mathematical square of the correlation coefficient presented in Appendix M.2. The formal specification for the coefficient of determination is given by (Newbold 1995):

$$R^2 = 1 - \frac{SSE}{SST} \tag{M.19}$$

Where:
R^2 = coefficient of determination
SSE = Error Sum of Squares
SST = Total Sum of Squares

The *Error Sum of Squares* is specified as:

$$SSE = \sum_{t=1}^{T} e_t^2 \tag{M.20}$$

Where:
SSE = Error Sum of Squares
e = error term, representing the difference between the regression model's dependent variable's observed values and modelled values
t = time index

The *Total Sum of Squares* is specified as:

$$SST = \sum_{t=1}^{T} (M_t - \bar{M})^2 \tag{M.21}$$

Where:
SST = Total Sum of Squares
M_t = dependent market price variable at time t
$\bar{M}$ = mean of the dependent market price variable M for the full time series
T = maximum time index
t = time index

M.5.2 R^2 Assessment

As stated, the coefficient of determination R^2 specified in equation (M.19), quantifies for a regression model, the level an independent variable explains a dependent variable. It is monitored to determine the goodness of fit for a regression model, with a value close to one indicating a strong regression model, and a value close to zero indicating a weaker model. This research develops and tests a further analytical measure to assist in determining the accuracy of the R^2 measure.

From equation (M.17) this research determines that for a regression model to be accurate, the independent variable X (denoted also by x), and the *residue* variable ϵ (denoted also by e), must be randomly distributed. Utilising the Pearson product-moment correlation coefficient, specified in Appendix M.2, this research proposes and measures the correlation between the independent variable, x, and residue variable, e, to evaluate the relationship's randomness. The resulting correlation level is tested to determine if it is able to provide an assessment, or a check, to augment the R^2 measure. Thus providing a secondary measure to determine how well the regression model predicts observed data. If the proposed correlation coefficient test for x and e is approximately between 0.5 and -0.5 then it is concluded the measure of R^2 is a valid measure for the model's *strength*. If the x and e correlation is significantly above or below zero (greater than 0.5 or less than -0.5 respectively), then further examination of the independent and dependent variables regression relationship may be considered.

This correlation, proposed as an assessment for the regression coefficient of determination R^2, is implemented in this research using the following:

$$r(x,e) = \frac{\sum_{t=1}^{T} \ (x_t - \overline{MP})(e_t - \bar{e})}{\sqrt{\sum_{t=1}^{T}(x_t - \bar{x})^2}\sqrt{\sum_{t=1}^{T} \ (e_t - \bar{e})^2}} \qquad \text{(M.22).}$$

Where:

r = Pearson correlation coefficient

x_t= independent variable at time t

$\bar{x}$ = independent variable mean for the full time series

e_t = error variable at time t

$\bar{e}$ = error variable mean for the full time series

T = maximum time index

t = time index

This R^2 assessment, in equation (M.22), is tested by applying it to the individual bank regressions specified in Section 3.9.7.

M.6 Market Price Change

Specified by JPMorgan Chase and Reuters (1996) and Hull (2009) the price change for a financial security can be measured using a number of methods. Three such methods are termed the absolute price change, relative price change and the log price change.

M.6.1 Absolute Price Change

For a financial instrument with price P_t, at a time instance t, the formula specified by JPMorgan Chase and Reuters (1996) to calculate the absolute price change from time $t-1$ to t, is given by:

$$D_{t-1,t} = P_t - P_{t-1} \tag{M.23}$$

Where:
$D_{t-1,t}$ = absolute price change from time $t-1$ to t
P_t = price at time t
P_{t-1} = price at time $t-1$
t = time index

M.6.2 Relative Price Change

For the same time period, $t-1$ to t, the formula for calculating the relative price change[55] for a financial instrument is given by:

$$R_{t-1,t} = \frac{P_t - P_{t-1}}{P_{t-1}} \tag{M.24}$$

Where:
$R_{t-1,t}$ = relative price change from time $t-1$ to t
P_t = price at time t
P_{t-1} = price at time $t-1$
t = time index

[55] JPMorgan Chase and Reuters (1996) states that the relative price change is also termed the *percent return*. However, the relative price change is normally stated as a decimal number.

M.6.3 Log Price Change

The relative price change formula, specified in equation (M.24), takes the same structure as the standard arithmetic percentage change formula.

Simplifying equation (M.24) gives:

$$\begin{aligned} R_{t-1,t} &= \frac{P_t}{P_{t-1}} - \frac{P_{t-1}}{P_{t-1}} \\ &= \frac{P_t}{P_{t-1}} - 1 \end{aligned} \tag{M.25}$$

Rearranging equation (M.25) gives:

$$1 + R_{t-1,t} = \frac{P_t}{P_{t-1}} \tag{M.26}$$

Where the fractional, or decimal form, of the gross return for a financial instrument can be calculated by using the right-hand side expression presented in equation (M.26), that is P_t/P_{t-1}. Thus, the left-hand side of equation (M.26) represents the more familiar gross return formula: $1 + R_{t-1,t}$. From the definitions presented by JPMorgan Chase and Reuters (1996), taking the natural logarithm of the gross return presented by the left-hand side of equation (M.26) gives:

$$r_{t-1,t} = ln(1 + R_{t-1,t}) \tag{M.27}$$

Where, for a financial instrument, the term $ln(1 + \mathrm{R}_{t-1,t})$ represents the instrument's continuously compounded return.

Substituting the right-hand side from equation (M.26) into equation (M.27) gives the formula for calculating the log price change. This log price change formula for a financial instrument from time $t - 1$ to t, is given by:

$$r_{t-1,t} = ln\left(\frac{P_t}{P_{t-1}}\right) \quad \text{(M.28)}$$

Where:

$r_{t-1,t}$ = log price change from time $t - 1$ to t

ln = natural logarithm to the base e

P_t = price at time t

P_{t-1} = price at time $t - 1$

t = time index

The *relative* expression presented in equation (M.28) can also be presented by using the logarithm identity: ln $(x/y) =$ ln $(x) -$ ln (y) to give:

$$r_{t-1,t} = ln(P_t) - ln(P_{t-1}) \quad \text{(M.29)}$$

Where the parameter definitions are the same as equation (M.28).

M.7 Market Price Return

JPMorgan Chase and Reuters (1996) specify a *return* to be a measure of the change in price relative to an initial price. Both the relative price change, specified in equation (M.24), and the log price change measure, specified in equation (M.28), maintain this relative quality. That is, both quantify a price change relative to an initial price level. Thus both these measures, the relative and log price changes, are classified as *returns*. The absolute price change, specified in equation (M.23), also measures the price from an initial level, however, it does not proportion the change based on the initial value.

This study applies the log price change formula specified in equation (M.28) to measure the market price variable's relative price changes. In order to emphasise - *the change in the market price variable*, this change is also referred to as the *market price return*, or simply as the *return*.

This study also applies the structure of equations (M.24) and (M.29) to measure the relative change and log change respectively for economic, market and accounting variables.

M.8 General Variable Change

The formulas specified in equations (M.24) for the relative price change for the market price variable, and equations (M.28) and (M.29) for the log price change, can also be applied to measure relative and log changes for any time series variable.

Equation (M.24) applied to the measure of a general variable's relative change is given by:

$$\Gamma_{t-1,t} = \frac{\Gamma_t - \Gamma_{t-1}}{\Gamma_{t-1}} \qquad \text{(M.30)}$$

Where:

$\Gamma_{t-1,t}$ = *relative variable change* from time $t-1$ to t

Γ_t = variable value at time t

Γ_{t-1} = variable value at time $t-1$

t = time index

Equation (M.28) applied to the measure a general variable's log change is given by:

$$\Gamma_{t-1,t} = ln\left(\frac{\Gamma_t}{\Gamma_{t-1}}\right) \qquad \text{(M.31)}$$

Where:

$\Gamma_{t-1,t}$ = *log variable change* from time $t-1$ to t

ln = natural logarithm to the base e

Γ_t = variable value at time t

Γ_{t-1} = variable value at time $t-1$

t = time index

Applying the *relative* expression specified in equation (M.29) to equation (M.31), to measure a variable's log change, gives:

$$\Gamma_{t-1,t} = ln(\Gamma_t) - ln(\Gamma_{t-1}) \qquad \text{(M.32)}$$

Where the parameter definitions are the same as equation (M.31).

M.9 Notation Applied for Referencing Variable Change

This section presents the association with *variable change* notations applied in this study to the notations presented and referred to in Appendix M.6, M.7 and M.8.

This study refers to *variable changes* by applying the delta notation. Thus the change in market price for both the relative and log changes, given by the following -

$$\begin{gathered} R_{t-1,t} \text{ or } r_{t-1,t} \text{ is represented by:} \\ dM_{t-1,t} \end{gathered} \tag{M.33}$$

Where:
$R_{t-1,t}$ = relative price change variable from time $t-1$ to t
$r_{t-1,t}$ = log price change variable from time $t-1$ to t
$dM_{t-1,t}$ = market price change or market price return from time $t-1$ to t
t = time index

The change in variables for both the relative and log changes, given by the following -

$$\begin{gathered} \Gamma_{t-1,t} \text{ is represented by:} \\ d\Gamma_{t-1,t} \end{gathered} \tag{M.34}$$

Where:
$\Gamma_{t-1,t}$ = relative or log price change variable from time $t-1$ to t
$d\Gamma_{t-1,t}$ = general variable change from time $t-1$ to t
t = time index

M.10 Market Price Return Descriptive Statistics

From the basis of the measures detailed in Appendix M.1, the specific sample mean and standard deviation descriptive statistics applied in this study are presented in this section.

M.10.1 Mean

From the basis of equation (M.10), the formula for calculating the average market price return, that is the mean market price return for a sample of N firms for the time period $t = 1,2, \ldots, T$, is given by:

$$dM_{T,N} = \frac{1}{N}\sum_{i=1}^{N}\left(\frac{1}{T}\sum_{t=1}^{T} dM_{t,i}\right) \tag{M.35}$$

Where:

$dM_{T,N}$ = mean sample return for N firms for time or year T

$dM_{t,i}$ = return for the i^{th} firm at time t

N = number of sample firms

i = firm index

T = maximum time index representing the maximum for the number of observation days in 1 year

t = time index

M.10.2 Standard Deviation

From the basis of equation (M.11), the formula for calculating the standard deviation of the average returns, or mean returns, for a sample of N firms at time T is given by:

$$SD_{T,N} = \sqrt{\frac{1}{N-1}\sum_{i=1}^{N}(dM_{T,i} - dM_{T,N})^2} \tag{M.36}$$

Where:

$SD_{T,N}$ = standard deviation for N firms at time T

$dM_{T,N}$ = mean sample return for N firms for year T

$dM_{T,i}$ = mean return for the i^{th} firm at time T

N = number of sample firms

i = firm index

T = maximum time index representing the maximum for the number of observation days in 1 year

M.11 Distribution Descriptive Statistics

To describe the distribution for 1-day market price returns, this study applies a series of distribution related descriptive statistics. These statistics applied in this study are the distribution: mean, standard deviation, skew, kurtosis and excess kurtosis. These distribution statistics are built on the mean and standard deviation formulas presented by equations (M.35) and (M.36) respectively, and are applied to 1-day market price returns calculated using 300 days of historical 1-day returns.

M.11.1 Mean and Standard Deviation

Specifying equations (M.35) and (M.36) based on a 300 day basis gives the following formulas:

The formula for the 300-day sample distribution mean is given by:

$$dM_{300,N} = \frac{1}{N}\sum_{i=1}^{N}\left(\frac{1}{300}\sum_{t=1}^{300} dM_{t,i}\right) \tag{M.37}$$

Where:

$dM_{300,N}$ = mean sample 1-day returns for N firms for time T calculated using 300 days of historical 1-day returns

$dM_{t,i}$ = return for the i^{th} firm at time t

N = number of sample firms

i = firm index

T = maximum time index representing the maximum number of distribution observation days (300 days)

t = time index representing 1 day

The formula to calculate the standard deviation for the mean sample distribution is given by:

$$SD_{300,N} = \sqrt{\frac{1}{N-1}\sum_{i=1}^{N}(dM_{300,i} - dM_{300,N})^2} \tag{M.38}$$

Where:

$SD_{300,N}$ = standard deviation of distribution means for N firms at time T = 300 days calculated using the mean sample $dM_{300,N}$

$dM_{300,i}$ = mean return for the i^{th} firm at time T

$dM_{t,i}$ = return for the i^{th} firm at time t

N = number of sample firms

i = firm index

T = maximum time index representing the maximum number of distribution observation days (300 days)

M.11.2 Skew

The formula to calculate the distribution skew at the firm level, building from the mean and standard deviation equations (M.35) and (M.36), is given by:

$$Skew_{T,i} = \frac{T}{(T-1)(T-2)}\left[\sum_{t=1}^{T}\left(\frac{dM_{t,i} - dM_{T,i}}{SD_{T,i}}\right)\right]^3 \qquad \text{(M.39)}$$

Where:

$Skew_{T,i}$ = distribution skew for the i^{th} firm at time T

$dM_{t,i}$ = return for the i^{th} firm at time t

$dM_{T,i}$ = mean return for the i^{th} firm at time T

$SD_{T,i}$ = standard deviation for the i^{th} firm at time T

i = firm index

T = maximum time index representing the maximum number of distribution observation days (300 days)

t = time index

The formula to calculate the average distribution skew for a sample is given by:

$$Skew_{T,N} = \frac{1}{N}\sum_{i=1}^{N} Skew_{T,i} \qquad \text{(M.40)}$$

Where:

$Skew_{T,N}$ = mean distribution skew for N firms at time T

$Skew_{T,i}$ = distribution skew for the i^{th} firm at time T

N = number of sample firms

i = firm index

T = maximum time index representing the maximum number of distribution observation days (300 days)

The formula to calculate the standard deviation of mean sample distribution skews is given by:

$$SD\ Skew_{T,N} = \sqrt{\frac{1}{N-1}\sum_{i=1}^{N}(Skew_{T,i} - Skew_{T,N})^2} \tag{M.41}$$

Where:

$SD\ Skew_{T,N}$ = skew standard deviation of distribution skew means for N firms at time T

$Skew_{T,i}$ = distribution skew for the i^{th} firm at time T

$Skew_{T,N}$ = mean distribution skew for N firms at time T

N = number of sample firms

i = firm index

T = maximum time index representing the maximum number of distribution observation days (300 days)

M.11.3 Kurtosis

The formula to calculate the distribution kurtosis at the firm level, building from the mean and standard deviation equations (M.35) and (M.36), is given by:

$$Kurtosis_{T,i} = \frac{T(T+1)}{(T-1)(T-2)(T-3)} \times \left[\sum_{t=1}^{T}\left(\frac{dM_{t,i} - dM_{T,i}}{SD_{T,i}{}^{4}}\right)\right]^4 \tag{M.42}$$

Where:

$Kurtosis_{T,i}$ = distribution kurtosis for the i^{th} firm at time T

$dM_{t,i}$ = return for the i^{th} firm at time t

$dM_{T,i}$ = mean return for the i^{th} firm at time T

$SD_{T,N}$ = standard deviation of distribution means for N firms at time T calculated using the mean sample $dM_{T,N}$

i = firm index

T = maximum time index representing the maximum number of distribution observation days (300 days)

t = time index

The formula to calculate the average distribution kurtosis for a sample is given by:

$$Kurtosis_{T,N} = \frac{1}{N}\sum_{i=1}^{N} Kurtosis_{T,i} \tag{M.43}$$

Where:

$Kurtosis_{T,N}$ = mean distribution kurtosis for N firms at time T

$Kurtosis_{T,i}$ = distribution kurtosis for the i^{th} firm at time T

N = number of sample firms

i = firm index

T = maximum time index representing the maximum number of distribution observation days (300 days)

The formula to calculate the standard deviation of mean sample distribution kurtosis is given by:

$$SD\ Kurtosis_{T,N} = \sqrt{\frac{1}{N-1}\sum_{i=1}^{N}(Kurtosis_{T,i} - Kurtosis_{T,N})^2} \tag{M.44}$$

Where:

$SD\ Kurtosis_{T,N}$ = kurtosis standard deviation of distribution kurtosis means for N firms at time T

$Kurtosis_{T,N}$ = mean distribution kurtosis for N firms at time T

$Kurtosis_{T,i}$ = distribution kurtosis for the i^{th} firm at time T

N = number of sample firms

i = firm index

T = maximum time index representing the maximum number of distribution observation days (300 days)

M.11.4 Excess Kurtosis

The formula to calculate the distribution excess kurtosis at the firm level is given by:

$$EKurtosis_{T,i} = Kurtosis_{T,i} - 3\frac{(T-1)^2}{(T-2)(T-3)} \qquad \text{(M.45)}$$

Where:

$EKurtosis_{T,i}$ = excess kurtosis for the i^{th} firm at time T

$Kurtosis_{T,i}$ = distribution kurtosis for the i^{th} firm at time T

i = firm index

T = maximum time index representing the maximum number of distribution observation days (300 days)

The formula to calculate the average distribution kurtosis for a sample is given by:

$$EKurtosi_{T,N} = \frac{1}{N}\sum_{i=1}^{N} EKurtosis_{T,i} \qquad \text{(M.46)}$$

Where:

$EKurtosis_{T,N}$ = mean distribution excess kurtosis for N firms at time T

$EKurtosis_{T,i}$ = excess kurtosis for the i^{th} firm at time T

i = firm index

N = number of sample firms

T = maximum time index representing the maximum number of distribution observation days (300 days)

The formula to calculate the standard deviation of mean sample excess kurtosis is given by:

$$SD\ EKurtosis_{T,N} = \sqrt{\frac{1}{N-1}\sum_{i=1}^{N}(EKurtosis_{T,i} - EKurtosis_{T,N})^2} \qquad \text{(M.47)}$$

Where:

$SD\ EKurtosis_{T,N}$ = excess kurtosis standard deviation of distribution excess kurtosis for N firms at time T

$EKurtosis_{T,N}$ = mean distribution excess kurtosis for N firms at time T

$EKurtosis_{T,i}$ = distribution excess kurtosis for the i^{th} firm at time T

N = number of sample firms

i = firm index

T = maximum time index representing the maximum number of distribution observation days (300 days)

APPENDIX N VALUE-AT-RISK IMPLEMENTATION DETAILS

This appendix details the variance-covariance, historical and Monte Carlo simulation Value-at-Risk implementation approaches applied in this study. The Value-at-Risk backtesting implementation details are also presented. In addition, the *Historical Value-at-Risk Actual* measure applied throughout this study is specified.

N.1 Value-at-Risk Modelling Approach

Market price return Value-at-Risk analysis is conducted by applying the Value-at-Risk models specified in Table N.1.

Table N.1 Value-at-Risk Model Summary

The table shows a summary of the specifications for the Value-at-Risk (VaR) model approaches applied for tests. The VaR Model column presents the names of the three Value-at-Risk models applied. The Confidence Level (%) column presents the three probability confidence levels that each VaR model applies. The Sig α column presents for the confidence levels the three corresponding probability significance levels. The Time Horizon Θ (days) column presents the number of time horizon days that each VaR model applies for testing. The Historical Observations Z (days) column presents the number of days of historical observations applied to calculate the respective VaR models. The table shows that for each VaR model time horizon, the 1 and 250 day VaR is calculated using both 300 and 800 days of historical observations, and the 500 day VaR is calculated using both 500 and 800 days of historical observations.

VaR Model	Confidence Level (%)	Sig. α [Ǥ]	Time Horizon Θ (days)	Historical Observations Z (days)	
Variance-Covariance	95%	0.05	1	300	800
			250		
			500	500	
Historical	99%	0.01	1	300	800
			250		
			500	500	
MCS	99.9%	0.001	1	300	800
			250		
			500	500	

Table N.1 (Continued): Table notes: [Ɠ] For brevity this study also refers to the Value-at-Risk measure in formulas with the subscript significance alpha (α) symbol: V_{α}. However, in complete form this subscript is written as a confidence level, for example as V_{95} (for the 95% confidence level that refers to the significance level α = 0.05), that is as $V_{(100\times[1-\alpha])}$. Tables in the Analysis and Results chapter, Chapter 4, refer to the 0.05 significance level or the 95% confidence level Value-at-Risk as VaR05.

The Value-at-Risk models in Table N.1 are applied for the probabilities specified by the corresponding percentage confidence levels (also translated to the significance levels in the Sig. α column) over the specified time horizon, presented in the Time Horizon Θ column. The Historical Observations column specifies the number of historical observations applied to compute the Value-at-Risk levels. The 300 and 500-days historical observations are under the RiskMetrics specification (JPMorgan Chase and Reuters 1996), and the 800-days historical observations are from the Basel III specification (Basel 2011).

N.2 Market Price Return Value-at-Risk Calculation

The calculation for the market price returns applied for each of the Value-at-Risk models is based on the number of time horizon days presented in Table N.1.

For a time horizon of Θ days, to *determine* the return for the future Θ days, the historical returns for the past Θ days are used. The formula for calculating the return for a single Θ-day historical time interval is given by:

$$dM_{t-\Theta,t} = ln\left(\frac{P_t}{P_{t-\Theta}}\right) \tag{N.1}$$

Where:

$dM_{t-\Theta,t}$ = log price return from time t to $t-\Theta$

ln = natural logarithm to the base e

P_t = price at time t

$P_{t-\Theta}$ = price at time $t-\Theta$

t = time at time 0 (the Value-at-Risk *calculation date*)

Θ = number of time horizon days

Equation (N.1) specifies the return for one historical time period of $t - \Theta$ days. To provide a more robust estimate of the expected return for a Θ-day time horizon in the future, a series of historical returns are taken maintaining the Θ-day time interval. The formula for calculating a total of Z historical returns is given by:

$$dM_{t-\zeta-\Theta,t-\zeta} = ln\left(\frac{P_{t-\zeta}}{P_{t-\zeta-\Theta}}\right) \tag{N.2}$$

Where:

$dM_{t-\zeta-\Theta,t-\zeta}$ = log price return from time $t - \zeta$ to $t - \zeta - \Theta$
ln = natural logarithm to the base e
$P_{t-\zeta}$ = price at time $t - \zeta$
$P_{t-\zeta-\Theta}$ = price at time $t - \zeta - \Theta$
t = time at time 0 (the Value-at-Risk *calculation date*)
Z = maximum number of historical observations
ζ = time index from *0*, *1*, *2*, ..., Z
Θ = number of time horizon days

Presented in Table N.1, and stated earlier, the number of observations, Z, applied in this study, range from 300 to 800 days.

N.3 Variance-Covariance Value-at-Risk Model

The variance-covariance Value-at-Risk, referred to also as var-covar Value-at-Risk, is evaluated by first calculating, for a given time horizon Θ, and a specified number of historical returns, Z, a series of returns using equation (N.2). The series of historical returns are then used to calculate the mean and standard deviation for the time horizon Θ. The formula used to calculate the mean for the variance-covariance Value-at-Risk model for a time horizon Θ is given by:

$$\mu_\Theta = \frac{1}{Z}\sum_{\zeta=1}^{Z} dM_{t-\zeta-\Theta,t-\zeta} \tag{N.3}$$

Where:

μ_Θ = population mean return for Z observations

$dM_{t-\zeta-\Theta,t-\zeta}$ = log price return from time $t-\zeta-\Theta$ to $t-\zeta$

t = time at time 0 (the Value-at-Risk *calculation date*)

Z = maximum number of historical observations

ζ = time index from *0*, *1*, *2*, ..., Z

Θ = number of time horizon days

The population standard deviation[56] based on the historical returns is given by:

$$\sigma_{\Theta} = \sqrt{\frac{1}{Z}\sum_{\zeta=1}^{Z}\left(dM_{t-\zeta-\Theta,t-\zeta} - \mu_{\Theta}\right)^2} \qquad \text{(N.4)}$$

Where:

σ_{Θ} = population standard deviation

μ_{Θ} = population mean return for Z observations

$dM_{t-\zeta-\Theta,t-\zeta}$ = log price return from time $t-\zeta-\Theta$ to $t-\zeta$

t = time at time 0 (the Value-at-Risk *calculation date*)

Z = maximum number of historical observations

ζ = time index from *0*, *1*, *2*, ..., Z

Θ = number of time horizon days

Applying the one-tailed properties of the normal distribution from the evaluated mean and standard deviation, the variance-covariance Value-at-Risk for the 95% and 99% confidence levels (JPMorgan Chase and Reuters 1996, Dowd 2003, Hull 2009) and the 99.9% confidence level are calculated using the following parameters:

$$V_{95\%} = -1.65 \times \sigma_{\Theta} \qquad \text{(N.5)}$$

$$V_{99\%} = -2.33 \times \sigma_{\Theta} \qquad \text{(N.6)}$$

$$V_{99.9\%} = -3.09 \times \sigma_{\Theta} \qquad \text{(N.7)}$$

Where in equations (N.5) to (N.7):

$V_{95\%}$ = Value-at-Risk at the 95% confidence level

[56] σ_{Θ} is the population standard deviation specified by the $1/Z$ devisor and would be applied for the Gross Domestic Product (GDP) and market indicator variance-covariance Value-at-Risk calculations. Generally however, for this study, standard deviation results are produced by applying the sample based $1/(Z-1)$ devisor.

$V_{99\%}$ = Value-at-Risk at the 99% confidence level

$V_{99.9\%}$ = Value-at-Risk at the 99.9% confidence level

σ_{Θ} = population standard deviation from equation (N.4) in Appendix N.3

N.4 Historical Value-at-Risk Model

The historical Value-at-Risk model is evaluated by calculating, for a given time horizon Θ, and a specified number of historical returns, Z, a series of returns using equation (N.3). The historical returns are then arranged into a histogram by arranging the returns from the lowest to the highest values.

The historical Value-at-Risk measure is specified such that the lowest return level corresponds to the 0th percentile. Therefore, for 1,001 historical returns, the 51st lowest return read corresponds to the historical Value-at-Risk at the 95% confidence level; the 11th lowest return corresponds to the historical Value-at-Risk at the 99% confidence level (Dowd 2003); and, the 2nd lowest return corresponds to the historical Value-at-Risk at the 99.9% confidence level. However, for the historical days used in this study that are based on the 300 (301); 500 (501); and 800 (801) days, the historical Value-at-Risk that correspond to the 99.9% confidence level would be the same as the smallest return corresponding to the 0th percentile.

The specific approach this study applies to compute historical Value-at-Risk is as follows. For a series of Z market price returns, dM, the *returns* are arranged from the smallest to the largest return such that:

$$dM_{0\%}, dM_{1\%}, \dots, dM_{100\%} \tag{N.8}$$

The historical Value-at-Risk is evaluated for the 95%, 99%, and 99.9% confidence levels by applying the following expressions:

$$V_{95\%} = dM_{5\%} \tag{N.9}$$

$$V_{99\%} = dM_{1\%} \tag{N.10}$$

$$V_{99.9\%} = dM_{0.1\%} \tag{N.11}$$

Where:

$V_{95\%}$ = Value-at-Risk at the 95% confidence level

$V_{99\%}$ = Value-at-Risk at the 99% confidence level

$V_{99.9\%}$ = Value-at-Risk at the 99.9% confidence level

$dM_{5\%}$ = log price return at the fifth percentile (5th percentile)

$dM_{1\%}$ = log price return at the first percentile (1st percentile)

$dM_{0.1\%}$ = log price return at the one tenth percentile (0.1st percentile)

N.5 Monte Carlo Simulation Value-at-Risk Model

The Monte Carlo simulation (MCS) Value-at-Risk and the historical Value-at-Risk models are very similar. They both read the Value-at-Risk levels from a histogram constructed from an ordered set of returns.

The difference between these two models is the method used to generate returns. The MCS Value-at-Risk approach used in this study applies a mathematical model to simulate returns, while the historical Value-at-Risk approach applies actual historical returns.

The simulation approach applied in this study for the Monte Carlo simulation Value-at-Risk model is based on the Monte Carlo simulation approach detailed by Metropolis and Ulam (1949), Dowd (2003) and Hull (2009). In this study, the approach simulates returns dM from market prices denoted by the random variable P. To simulate the market price returns the following processes are applied (Dowd 2003, Hull 2009):

$$dM_{t,t+\Delta t} = ln\,P(t+\Delta t) - ln\,P(t) \qquad \text{(N.12)}$$

$$ln\,P(t+\Delta t) - ln\,P(t) = \hat{\mu}\Delta t + \sigma\epsilon\sqrt{\Delta t} \qquad \text{(N.13)}$$

Where in equations (N.12) and (N.13):

$dM_{t,t+\Delta t}$ = market price return from time t to Δt

$P(t+\Delta t)$ = future price at a time $t+\Delta t$

$P(t)$ = current price at time t

$\hat{\mu}$ = mean market price return

σ = standard deviation or volatility of market price returns

ϵ = stochastic variable that is represented by a random variable generated from a standard normal cumulative distribution with mean zero and a standard deviation of 1.0

Δt = time increment
t = time index

Equation (N.13) represents the geometric Brownian motion specified by Hull (2009) and named after Robert Brown (1828).

The following process presented in expression (N.14) is attributed to the *Ito Lemma process* named after Kiyoshi Ito (Ito 1951), and is applied to equation (N.13) to produce equation (N.15).

$$\left(\hat{\mu} - \frac{\sigma^2}{2}\right)\Delta t \qquad \text{(N.14)}$$

Where:
$\hat{\mu}$ = mean market price return
σ = standard deviation or volatility of market price returns
Δt = time increment

The process specified in expression (N.14) is applied to a stochastic process, which adjusts the mean market price variable $\hat{\mu}$ for time period Δt by one-half its variance. Application of this *Ito Lemma process*, in equation (N.14), to the process in equation (N.13), evaluates to equations (N.15) and (N.16) (Hull 2009):

$$ln\, P(t + \Delta t) - ln\, P(t) = \left(\hat{\mu} - \frac{\sigma^2}{2}\right)\Delta t + \sigma\epsilon\sqrt{\Delta t} \qquad \text{(N.15)}$$

$$P(t + \Delta t) = P(t) \times exp^{\left[\left(\hat{\mu} - \frac{\sigma^2}{2}\right)\Delta t + \sigma\epsilon\sqrt{\Delta t}\right]} \qquad \text{(N.16)}$$

Where in equations (N.15) and (N.16):
$P(t + \Delta t)$ = future price at a time $t + \Delta t$
$P(t)$ = current price at time t
exp = *exponent of*: the mathematical constant approximately equal to 2.718281828
$\hat{\mu}$ = mean market price return
σ = standard deviation or volatility of market price returns

ϵ = stochastic variable that is represented by a random variable generated from a standard normal cumulative distribution with mean zero and a standard deviation of 1.0

Δt = time increment

N.6 Monte Carlo Simulation

The Monte Carlo simulation Value-at-Risk method implements, in this study, the process specified in equation (N.16). There are several methods for determining the standard deviation for the specified process in equation (N.16), including the use of the ARMA plus GARCH models[57] detailed by Berkowitz and O'Brien (2002).

N.6.1 Monte Carlo Simulation Approach

In this study, the process specified by equation (N.16) is implemented by calculating the mean and standard deviation of the daily returns by observing actual historical time series returns. These returns are calculated based on Θ-day time horizons (where, Θ = number of days for a specified time horizon). The same as with the variance-covariance Value-at-Risk, the mean based on Θ-day returns, denoted by μ_Θ, is calculated using the statistical mean specified in equation (N.3) and the standard deviation, denoted by σ_Θ, is calculated using the statistical standard deviation specified in equation (N.4).

Substituting the evaluated mean μ_Θ and standard deviation σ_Θ into equation (N.16) produces:

$$P(t+\Delta t) = P(t)exp^{\left[\left(\mu_\Theta - \frac{{\sigma_\Theta}^2}{2}\right)\Delta t + \sigma_\Theta \epsilon \sqrt{\Delta t}\right]} \qquad (N.17)$$

$$ln\left[\frac{P(t+\Delta t)}{P(t)}\right] = \left(\mu_\Theta - \frac{{\sigma_\Theta}^2}{2}\right)\Delta t + \sigma_\Theta \epsilon \sqrt{\Delta t} \qquad (N.18)$$

Substituting to the right-hand side of equation (N.18) the time increment $\Delta t = 1$, gives:

[57] The ARMA plus GARCH model is a combination of the Autoregressive Moving Average (ARMA) model and the Generalised Autoregressive Conditional Heteroskedasticity (GARCH) model.

$$ln\left[\frac{P(t+\Delta t)}{P(t)}\right] = \left(\mu_\Theta - \frac{{\sigma_\Theta}^2}{2}\right) + \sigma_\Theta \epsilon \qquad \text{(N.19)}$$

$$dM_{t,t+\Delta t} = \left(\mu_\Theta - \frac{{\sigma_\Theta}^2}{2}\right) + \sigma_\Theta \epsilon \qquad \text{(N.20)}$$

Where in equations (N.17) to (N.20):

$P(t+\Delta t)$ = future price at a time $t+\Delta t$

$P(t)$ = current price at time t

$dM_{t,t+\Delta t}$ = market price return from t to Δt

μ_Θ = mean of Z returns with returns calculated for Θ-day time horizon

σ_Θ = standard deviation of Z returns with returns calculated for Θ-day time horizon

Z = maximum number of historical observations

Θ = number of time horizon days

exp = *exponent of*: the mathematical constant approximately equal to 2.718281828

ϵ = stochastic variable that is represented by a random sample distribution from a standard normal cumulative distribution with mean zero and a standard deviation of 1.0

Δt = time increment set to 1 time interval

The formula presented in expression (N.20) is simulated several times, with each simulation applying a differing level of *shock* generated by the stochastic process ϵ. This study applies for each MCS Value-at-Risk calculation 1 million and one simulations. Thus producing 1 million and one simulated returns for the given Θ-day time horizon. Applying the same process as the historical Value-at-Risk model, the simulated returns are arranged into a histogram from the lowest to the highest values.

Referring to the historical Value-at-Risk model description presented in Appendix N.4, the Monte Carlo simulation Value-at-Risk measure is specified such that the lowest return corresponds to the 0th percentile. Therefore, for 1,000,001 historical returns the 50,001st lowest return read, that is the 5th percentile, corresponds to the historical Value-at-Risk at the 95% confidence level; the 10,001st lowest return read, that is the 1st percentile, corresponds to the historical Value-at-Risk at the 99% confidence level; and, the 1,001st lowest return read, that is the one 0.1st percentile, corresponds to the historical Value-at-Risk at the 99.9% confidence level.

The specific approach this study applies to compute MCS Value-at-Risk is as follows. The same as with the historical Value-at-Risk, for the MCS Value-at-Risk, a series of Z = 1,000,001 (one million and one) market price returns, dM, are arranged from the smallest to the largest return such that:

$$dM_{0\%}, dM_{1\%}, \dots, dM_{100\%} \tag{N.21}$$

The MCS Value-at-Risk is evaluated for the 95%, 99%, and 99.9% confidence levels by applying the following expressions:

$$V_{95\%} = dM_{5\%} \tag{N.22}$$

$$V_{99\%} = dM_{1\%} \tag{N.23}$$

$$V_{99.9\%} = dM_{0.1\%} \tag{N.24}$$

Where:
$V_{95\%}$ = Value-at-Risk at the 95% confidence level
$V_{99\%}$ = Value-at-Risk at the 99% confidence level
$V_{99.9\%}$ = Value-at-Risk at the 99.9% confidence level
$dM_{5\%}$ = log price return at the fifth percentile (5th percentile)
$dM_{1\%}$ = log price return at the first percentile (1st percentile)
$dM_{0.1\%}$ = log price return at the one tenth percentile (0.1st percentile)

N.6.2 Evaluation of the Stochastic Process ϵ

The value of the stochastic process variable ϵ is evaluated by first assigning a probability level for ϵ, represented by $p(\epsilon)$. From this probability level, using a standard normal distribution, its inverse is computed to reveal the value of ϵ that corresponds to this probability level. That is, for a given level of probability, $p(\epsilon)$, ϵ represents the area under the standard normal distribution. The area under the standard normal distribution is evaluated using the inverse standard normal cumulative distribution function, termed the inverse standard normal CDF (Hull 2009).

This study evaluates the inverse standard normal CDF using the following process:

For:

$$p(\epsilon) = 0.5\ ;\ \epsilon = 0 \tag{N.25}$$

$$p(\epsilon) < 0.5\ ;\ \epsilon = -\sqrt{2\,ln\left[\frac{1}{p(\epsilon)\sqrt{2\pi}}\right]} \tag{N.26}$$

$$p(\epsilon) > 0.5\ ;\ \epsilon = \sqrt{2\,ln\left[\frac{1}{\big(1-p(\epsilon)\big)\sqrt{2\pi}}\right]} \tag{N.27}$$

Where:

$p(\epsilon)$ = probability of the stochastic variable ϵ, with values between 1 and 0

ϵ = random stochastic variable with values between $+\infty$ and $-\infty$ [58]

ln= natural logarithm to the base e

π = mathematical constant approximately equal to 3.141592654

N.6.3 ϵ Adjustment

To adjust the stochastic process variable, ϵ, to better fit a normal distribution, equations (N.26) and (N.27) are adjusted using the following cubic polynomials:

$$\begin{gathered}\text{For: } p(\epsilon) < 0.5\ ; \\ \epsilon_{error} = Ap(\epsilon)^3 - Bp(\epsilon)^2 + Cp(\epsilon) + D\end{gathered} \tag{N.28}$$

$$\begin{gathered}\text{For: } p(\epsilon) > 0.5\ ; \\ \epsilon_{error} = -Ap(1-\epsilon)^3 - Bp(1-\epsilon)^2 + Cp(1-\epsilon) + D\end{gathered} \tag{N.29}$$

Where:

$p(\epsilon)$ = probability of the stochastic variable ϵ, with values between 1 and 0

ϵ = random stochastic variable with values between $+\infty$ and $-\infty$ [33]

ϵ_{error} = stochastic process error from the standard normal distribution

A, B, C, D = constant parameters

[58] The $\pm\infty$ (infinity levels) are bounded in this study to an appropriate level of $\pm$ standard deviations (less than ± 20 standard deviations).

The constant parameter coefficients for A, B, C, D are evaluated (rounded up to 4 decimal places) to be:

$$A = 2.6243$$
$$B = 3.5068$$
$$C = 0.3295$$
$$D = 0.3841$$

The adjusted stochastic variable from the inverse standard normal CDF is evaluated as follows:

$$\epsilon_{adjusted} = \epsilon + \epsilon_{error} \tag{N.30}$$

Where:
$\epsilon_{adjusted}$ = stochastic variable adjusted
ϵ = stochastic variable
ϵ_{error} = stochastic variable error

N.7 Backtesting

The variance-covariance, the historical, and the Monte Carlo simulation Value-at-Risk measures are each tested using the actual price return movements observed from the LSE market.

N.7.1 Backtesting Approach

The backtest process specified by Hull (2009), and observed by Berkowitz and O'Brien (2002), evaluates the following process:

$$V_{1,2,\ldots,T} > dM_{1,2,\ldots,T} \tag{N.31}$$

Where:
$V_{1,2,\ldots,T}$ = Value-at-Risk measure for time periods $t = 1, 2, \ldots, T$
$dM_{1,2,\ldots,T}$ = market price return value for time periods $t = 1, 2, \ldots, T$
T = maximum time index
t = time index

Expression (N.31) represents the number of times that the actual market price return variable, dM, is less than the predicted Value-at-Risk measure V, for the specified time horizon (Hull 2009). The count of the event where the actual price, based on market price returns, is less than the Value-at-Risk level specifies the number of times the tested Value-at-Risk model is breached[59].

In this study, the number of times a Value-at-Risk model is breached provides a measure of the level of market price risk for the period of measurement.

N.7.2 In-Time Horizon Backtesting

In-time horizon backtesting is a test performed to evaluate the number of Value-at-Risk breaches from a start date to the Θ-day time horizon date. The return used in this study is a rolling return that maintains the time horizon days. The number of breaches recorded when applying *in-time horizon backtesting* is termed in this study as the *In-Time Horizon Breach Count*.

From equation (N.31) the in-time horizon breach count is represented by:

$$V_{1,2,\ldots,\Theta} > dM_{1,2,\ldots,\Theta} \tag{N.32}$$

Where:

$V_{1,2,\ldots,\Theta}$ = Value-at-Risk measure for time periods $t = 1, 2, \ldots, \Theta$

$dM_{1,2,\ldots,\Theta}$ = market price return for time periods $t = 1, 2, \ldots, \Theta$

Θ = time horizon

t = time index

N.7.3 End-of-Time Horizon Backtesting

End-of-time horizon backtesting is a test performed to evaluate if the actual return breached the Value-at-Risk level on the Θ-day time horizon date. The return used in this study is a rolling return that maintains the time horizon days. The number of breaches recorded when applying *end-of-time horizon backtesting* is termed in this study as the *End-of-Time Horizon Breach Count*.

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[59] The term VaR model *breach* is also termed VaR model *violation,* (Berkowitz and O'Brien 2002).

From equation (N.32) the end-of-time horizon breach count is represented by:

$$V_{\Theta} > dM_{\Theta} \tag{N.33}$$

Where:

V_{Θ} = Value-at-Risk measure at time period Θ

dM_{Θ} = market price return value for time periods Θ

Θ = time horizon

N.8 Historical Value-at-Risk Actual

Applying the Value-at-Risk approaches presented in Appendix N.1, provides a measure of Value-at-Risk for a time interval from day t to a number of days in the future. The number of days in the future is specified by the Θ-day time horizon. This study develops the historical Value-at-Risk approach specified in Appendix N.4 to provide a measure of the actual Value-at-Risk for a specific day, t, for a given Θ-day time horizon. This actual measure of Value-at-Risk is termed in this study as the *Historical Value-at-Risk Actual*.

The expression applied to calculate the *Historical Value-at-Risk Actual* measure at time t is given by:

$$V_{\alpha:t:\Theta} = dM_{\alpha:\Theta:\mathrm{Z}} \tag{N.34}$$

Where:

$V_{\alpha:t:\Theta}$ = Historical Value-at-Risk Actual

$dM_{\alpha:\Theta:\mathrm{Z}}$ = log price return $M_{t-\zeta-\Theta,t-\zeta}$ from time $t-\zeta$ to $t-\zeta-\Theta$ represented by equation (N.2)

α = significance level: confidence level =$[100 \times (1-\alpha)]\%$

t = time at time 0 (the Value-at-Risk *calculation date*)

Θ = number of time horizon days

Z = maximum number of historical observations

ζ = time index from *0*, *1*, *2*, ..., Z

APPENDIX O QUANTITATIVE ANALYTICAL METHODS IMPLEMENTATION DETAILS

This appendix details the mean and standard deviation calculations and the cross-sectional and time series regression implementation approaches applied in this study.

These approaches include examination of *Historical Value-at-Risk Actual* variable characteristics. The regression approach applied to examine the market price returns and *Historical Value-at-Risk Actual* relationship is also specified.

The implementation approach for GDP and selected market indices time series regressions are specified. In addition, the implementation details for market value and book-to-market ratio regressions that apply the Fama and McBeth t-Statistic are specified.

The descriptive statistics and correlation analysis implementation details for accounting total variables, market price variable, selected market variables and the Value-at-Risk variable are specified. In addition, descriptive statistics and correlation analysis implementation details for the *change in* accounting totals and *change in* selected market variables are also detailed.

Implementation details for the change in market value and market price return regression, and the change in key accounting totals and market price return cross-sectional regressions are specified. In addition, the implementation details for the relative delta and Historical Value-at-Risk Actual cross-sectional regressions that are applied to directly test this study's null hypothesis is also presented.

O.1 Historical Value-at-Risk Actual for the 1-Day, 250-Day and 500-Day Time Horizon at the 95% Confidence Level

This study proposes the application of the *Historical Value-At-Risk Actual* measure at the 95% confidence level, and at the 250-day time horizon. For the sample firms used in this study, and to provide a comparison of the *Historical Value-At-Risk Actual* measure at the 95% confidence level for the 1-day, 250-day, and 500-day time horizons, the mean and the standard deviation on a yearly basis is calculated. The sample mean for time t is calculated by:

$$\bar{V}_{\alpha:T:\Theta,N} = \frac{1}{N}\sum_{i=1}^{N}\left(\frac{1}{T}\sum_{t=1}^{T} V_{\alpha:\Theta:\mathrm{Z},t,i}\right) \qquad \text{(O.1)}$$

Where:

$\bar{V}_{\alpha:T:\Theta,\mathrm{N}}$ = mean sample Historical Value-at-Risk Actual for N firms at time T

N = number of sample firms

i = firm index

$V_{\alpha:\Theta:\mathrm{Z},t,i}$ = Historical Value-at-Risk Actual for the i^{th} firm at time t

α = significance level: confidence level =$[100 \times (1-\alpha)]\%$

T = maximum time index

t = time at time 0 (the Value-at-Risk *calculation date*)

Θ = number of time horizon days

Z = maximum number of historical observations

The standard deviation of the Value-at-Risk sample means is calculated by:

$$SD_{\alpha:T:\Theta,N} = \sqrt{\frac{1}{N-1}\sum_{i=1}^{N}(\bar{V}_{\alpha:T:\Theta,i} - \bar{V}_{\alpha:T:\Theta,N})^2} \qquad \text{(O.2)}$$

Where:

$SD_{\alpha:T:\Theta,N}$ = standard deviation for N firms at year T

$\bar{V}_{\alpha:T:\Theta,i}$ = mean sample Historical Value-at-Risk Actual for i^{th} firms at time T

$\bar{V}_{\alpha:T:\Theta,\mathrm{N}}$ = mean sample Historical Value-at-Risk Actual for N firms at time T

N = number of sample firms

i = firm index

α = significance level: confidence level =$[100 \times (1-\alpha)]\%$

T = maximum time index

Θ = number of time horizon days

Z = maximum number of historical observations

O.2 Regressions for Historical Value-at-Risk Actual and the 99% and 99.9% Confidence Level to the 95% Confidence Level

The regression analysis method is applied to provide an analysis of the different significance levels for the 250-day *Historical Value-At-Risk Actual*. Cross-sectional and time series regressions are applied that examine the 95% confidence level 250-day time horizon *Historical Value-At-Risk Actual* with the 99% and 99.9% 250-day time horizon *Historical Value-At-Risk Actual.*

O.2.1 Cross-Sectional Regressions for Historical Value-at-Risk Actual at the 99% and 99.9% Confidence Level and the 95% Confidence Level

The cross-sectional regression is applied to the sample on a yearly basis by first using equation (M.8) from Appendix M.1.4 to calculate the yearly Value-at-Risk levels from the daily levels. For each firm, averages are calculated for each confidence level (95%, 99% and 99.9%). Regression is then applied to compare these yearly averages (99% to 95%, and 99.9% to 95%) for firms i = *1*, *2*, ..., N that represents the regression for that year. This regression process is repeated for year *panels* from 1994 to 2008.

The cross-sectional regression equation applied in this study for the 99% and 95% confidence levels is given by:

$$\bar{V}_{95:\Psi:\Theta,i,t} = a_{95:\Psi:\Theta,i,t} + b\bar{V}_{99:\Psi:\Theta,i,t} + e_{95:\Psi:\Theta,i,t} \qquad \text{(O.3)}$$

Where:

$\bar{V}_{95:\Psi:\Theta,i,t}$ = average Value-at-Risk at the 95% confidence level for the i^{th} firm for year t

$\bar{V}_{99:\Psi:\Theta,i,t}$ = average Value-at-Risk at the 99% confidence level for the i^{th} firm for year t

b = regression slope

a = regression intercept

e = error term representing the difference between the actual dependent variable values to the calculated dependent variable values using the regression equation

i = firm index: i = *1*, *2*, ..., N

N = number of sample firms

Ψ = maximum time index based on a single year

t = time index at the year level

Θ = number of time horizon days

The cross-sectional regression equation applied in this study for the 99.9% to 95% confidence levels is given by:

$$\bar{V}_{95:\Psi:\Theta,i,t} = a_{95:\Psi:\Theta,i,t} + b\bar{V}_{99.9:\Psi:\Theta,i,t} + e_{95:\Psi:\Theta,i,t} \qquad \text{(O.4)}$$

Where:

$\bar{V}_{95:\Psi:\Theta,i,t}$ = average Value-at-Risk at the 95% confidence level for the i^{th} firm for year t

$\bar{V}_{99:\Psi:\Theta,i,t}$ = average Value-at-Risk at the 99% confidence level for the i^{th} firm for year t

b = regression slope

a = regression intercept

e = error term representing the difference between the actual dependent variable values to the calculated dependent variable values using the regression equation

i = firm index: $i = 1, 2, ..., N$

N = number of sample firms

Ψ = maximum time index based on a single year

t = time index at the year level

Θ = number of time horizon days

O.2.2 Time Series Regressions for Historical Value-at-Risk Actual at the 99% and 99.9% Confidence Level and the 95% Confidence Level

The time series regression is applied to the sample on a yearly basis by first applying equation (M.10) from Appendix M.1.4 to calculate the yearly Value-at-Risk levels from the daily levels. For each year, averages are calculated for each confidence level (95%, 99% and 99.9%). Regression is then applied to compare these yearly averages (99% to 95%, and 99.9% to 95%) for the time series years $t = 1, 2, ..., T$. This regression process is applied for the time period 1994 to 2008, and the sub-time periods 1994 to 2004 and 1994 to 2007.

The time series regression equation applied in this study for the 99% to 95% confidence level is given by:

$$\bar{V}_{95:\Theta,N,t} = a_{95:\Theta,N,t} + b\bar{V}_{99:\Theta,N,t} + e_{95:\Theta,N,t} \qquad \text{(O.5)}$$

Where:

$\bar{V}_{95:\Theta,N,t}$ = panel average Value-at-Risk at the 95% confidence level at the sample level N for year t

$\bar{V}_{99:\Theta,N,t}$ = panel average Value-at-Risk at the 99% confidence level at the sample level N for year t

b = regression slope

a = regression intercept

e = error term representing the difference between the actual dependent variable values to the calculated dependent variable values using the regression equation

N = average number of sample firms

T = maximum time index based on time series interval

t = time index at the year level: $t = 1, 2, ..., T$

Θ = number of time horizon days

The time series regression equation applied in this study for the 99.9% to 95% confidence level is given by:

$$\bar{V}_{95:\Theta,N,t} = a_{95:\Theta,N,t} + b\bar{V}_{99.9:\Theta,N,t} + e_{95:\Theta,N,t} \quad \text{(O.6)}$$

Where:

$\bar{V}_{95:\Theta,N,t}$ = panel average Value-at-Risk at the 95% confidence level at the sample level N for year t

$\bar{V}_{99.9:\Theta,N,t}$ = panel average Value-at-Risk at the 99.9% confidence level at the sample level N for year t

b = regression slope

a = regression intercept

e = error term representing the difference between the actual dependent variable values to the calculated dependent variable values using the regression equation

N = average number of sample firms

T = maximum time index based on time series interval

t = time index at the year level: $t = 1, 2, ..., T$

Θ = number of time horizon days

O.3 Regressions for Market Price Returns and Historical Value-at-Risk Actual

The regression analysis method is applied to the yearly market price returns as the independent variable and the *Historical Value-At-Risk Actual* at the 95% confidence level for the 250-day time horizon as the dependent variable. The regression for the market price returns and the *Historical Value-At-Risk Actual* is principally applied to identify differences between the samples and the control group.

O.3.1 Cross-Sectional Regressions for Returns and Historical Value-at-Risk Actual

The cross-sectional and time series regressions are applied to the average market price returns to the average *Historical Value-At-Risk Actual*.

To allow a comparative measure of market price returns to that of the 250-day *Historical Value-At-Risk Actual*, the market price returns are also measured on a 250-day basis. The market price returns are calculated using the following:

$$dM_{i:\Psi-1,\Psi} = ln\left(\frac{P_{i:\Psi}}{P_{i:\Psi-1}}\right) \tag{O.7}$$

Where:

$dM_{i:\Psi-1,\Psi}$ = market price return for the i^{th} firm: that is, the log price change specified in equations (M.28) and (M.29) representing the change in market price

ln = natural logarithm to the base e

$P_{i:\Psi}$ = market price for the i^{th} firm at year Ψ

$P_{i:\Psi-1}$ = market price for the i^{th} firm at year $\Psi - 1$

Ψ = year count at the firm level

N = average number of sample firms

i = firm index: $i = 1, 2, ..., N$

The *Historical Value-At-Risk Actual* at the 95% confidence level for the 250-day time horizon at the firm level is specified by the following formula:

$$V_{i:\Psi} = V_{i:95:\Psi:\Theta} \tag{O.8}$$

Where:

$V_{i:\Psi}$ = *Historical Value-At-Risk Actual* for the i^{th} firm at the 95% confidence level for the 250-day time horizon, measured at the year-end of the year represented by the year count Ψ

$V_{95:\Psi:\Theta}$ = *Historical Value-At-Risk Actual* for the i^{th} firm at the 95% confidence level for the 250-day time horizon, measured at the year-end of year for the year represented by the year count Ψ

95 = Value-at-Risk confidence level

i = firm index: $i = 1, 2, ..., N$

Ψ = year count at the firm level

Θ = number of time horizon days

The cross-sectional regression equation applied in this study for the market price return to the Value-at-Risk is given by:

$$V_{i:\Psi} = a_{\Psi} + b_{\Psi} dM_{i:\Psi-1,\Psi} + e_{\Psi} \tag{O.9}$$

Where:

$V_{i:\Psi}$ = *Historical Value-At-Risk Actual* for the i^{th} firm at the 95% confidence level for the 250-day time horizon, measured at the year-end of the year represented by the year count Ψ

$dM_{i:\Psi-1,\Psi}$ = market price return for the i^{th} firm: that is, the log price change

b_{Ψ} = regression slope

a_{Ψ} = regression intercept

e_{Ψ} = error term representing the difference between the actual dependent variable values to the calculated dependent variable values using the regression equation

N = average number of sample firms

i = firm index: $i = 1, 2, ..., N$

Ψ = maximum time index based on a single year

O.3.2 Time Series Regressions for Market Price Returns and Historical Value-at-Risk Actual

The time series regression applies sample level variable averages on a yearly basis. These averages are calculated by first applying equations (O.7) and (O.8) to calculate respective market price returns and Historical Value-at-Risk Actuals at the company level. Then equation (M.3) (specified for the population mean) from Appendix M.1.2, is applied to these company level figures to calculate the average at the sample level on a yearly basis.

To calculate the market price return average at the sample level on a yearly (250-day) basis, applying equation (M.3) to equation (O.7) gives:

$$d\bar{M}_{N:t-1,t} = \frac{1}{N}\sum_{i=1}^{N} dM_{i:\Psi-1,\Psi} \qquad \text{(O.10)}$$

Where:

$d\bar{M}_{N:t-1,t}$ = average market price return at time t for N sample firms

$dM_{i:\Psi-1,\Psi}$ = market price return for the i^{th} firm: that is, the log price change specified in equations (M.28) and (M.29) representing the change in market price

ln = natural logarithm to the base e

$P_{i:\Psi}$ = market price for the i^{th} firm at year Ψ

$P_{i:\Psi-1}$ = market price for the i^{th} firm at year $\Psi - 1$

N = average number of sample firms

i = firm index: i = *1*, *2*, ..., N

Ψ = year count at the firm level

T = maximum year count at the sample level

t = time series index: t = *1*, *2*, ..., T

To calculate the Historical Value-at-Risk Actual average at the sample level on a yearly (250-day) basis, applying equation (M.3) to equation (O.8) gives:

$$\bar{V}_{N:t} = \frac{1}{N}\sum_{i=1}^{N} V_{i:\Psi} \qquad \text{(O.11)}$$

Where:

$\bar{V}_{N:t}$ = average *Historical Value-At-Risk Actual* at time t for N sample firms at the 95% confidence level for the 250-day time horizon

$V_{i:\Psi}$ = *Historical Value-At-Risk Actual* for the i^{th} firm at the 95% confidence level for the 250-day time horizon, measured at the year-end of the year represented by the year count Ψ
N = average number of sample firms
i = firm index: i = *1*, *2*, ..., N
Ψ = year count at the firm level
T = maximum year count at the sample level
t = time series index: t = *1*, *2*, ..., T

The time series regression equation applied in this study for the market price return to the Value-at-Risk is given by:

$$\bar{V}_{N:\mathrm{t}} = a_T + b_T d\bar{M}_{N:t-1,t} + e_{N:t} \qquad (O.12)$$

Where:
$\bar{V}_{N:t}$ = average *Historical Value-At-Risk Actual* at time t for N sample firms at the 95% confidence level for the 250-day time horizon
$d\bar{M}_{N:t-1,t}$ = average market price return at time t for N sample firms
b_T = regression slope
a_T = regression intercept
$e_{N:t}$ = error term representing the difference between the actual dependent variable values to the calculated dependent variable values using the regression equation
N = average number of sample firms
T = maximum year count at the sample level
t = time series index: t = *1*, *2*, ..., T

O.4 Regressions for GDP and Market Indices and Market Price Return and Value-at-Risk

The GDP and market indices variables selected in this study are treated as representing the respective populations of interest.

The regression analysis method is applied to the yearly change in the Gross Domestic Product (GDP) and market indices variables as the independent variable and market price return as the dependent variable. This regression analysis is applied to identify differences in the market price returns to the change in GDP and indices values.

Regression analysis is also applied to the *GDP and market indices variable Historical Value-At-Risk Actual* and the *market price return Historical Value-At-Risk Actual*. These Historical Value-at-Risk Actual variables are calculated at the 95% confidence level for the 250-day time horizon. In this regression, the GDP and market indices Historical Value-At-Risk Actual is treated as the independent variable and the market price return Historical Value-At-Risk Actual is treated as the dependent variable. This regression analysis is applied to identify differences in the market price return Value-at-Risk to the change in GDP and indices Value-at-Risk levels.

O.4.1 Time Series Regressions for Change in GDP and Market Indices, and Market Price Return and Value-at-Risk

This study applies time series regression to analyse the GDP and market indices variables and the market price return and *Historical Value-At-Risk Actual* variables.

The GDP and market indices variables are calculated on a 250-day basis by applying the form specified in equation (M.31). The GDP and market indices Historical Value-at-Risk Actual is computed on a 250-day basis using the approach specified in Appendix N.8. The principles specified in Appendix O.3.2 are applied to calculate the yearly sample averages for the market price returns, and the yearly sample averages for its Historical Value-at-Risk Actual.

The time series regression equation applied for the GDP and market indices variables to the market price return variable is given by:

$$d\overline{M}_{N:t-1,t} = a_T + b_T d\Gamma_{t-1,t} + e_{N:t-1,t} \qquad \text{(O.13)}$$

Where:

$d\overline{M}_{N:t-1,t}$ = average market price return at time t for N sample firms

$d\Gamma_{t-1,t}$ = GDP and market indices change

b_T = regression slope

a_T = regression intercept

$e_{N:t-1,t}$ = error term representing the difference between the actual dependent variable values to the calculated dependent variable values using the regression equation

N = average number of sample firms

T = maximum year count at the sample level

t = time series index: t = *1*, *2*, ..., T

The time series regression equation applied for the *GDP and market indices Historical Value-At-Risk Actual* variables and the *market price return Historical Value-at-Risk Actual* variable is given by:

$$\bar{V}_{N:\mathrm{t}} = a_T + b_T V_{\Gamma:t} + e_{N:\mathrm{t}} \qquad \text{(O.14)}$$

Where:

$\bar{V}_{N:\mathrm{t}}$ = average *Historical Value-At-Risk Actual* at time t for N sample firms at the 95% confidence level for the 250-day time horizon

$V_{\Gamma:t}$ = GDP and market indices *Historical Value-At-Risk Actual* at time t at the 95% confidence level for the 250-day time horizon

b_T = regression slope

a_T = regression intercept

$e_{N:\mathrm{t}}$ = error term representing the difference between the actual dependent variable values to the calculated dependent variable values using the regression equation

N = average number of sample firms

T = maximum year count at the sample level

t = time series index: $t = 1, 2, ..., T$

O.5 Regressions for Market Value and Book-to-Market Ratio to Predict Market Price Returns

The market value variable and book-to-market ratio variable applied to predict market price returns takes the following cross-sectional regression form:

$$dM_{i:t,t+1} = a_{t+1} + b_{1:t+1} MV_{i:t} + b_{2:t+1} BM_{i:t} + e_{i:t,t+1} \qquad \text{(O.15)}$$

Where:

$dM_{i:t,t+1}$[60]= market price return for the i^{th} firm from year t to year $\mathrm{t}+1$

$MV_{i:t}$ = log of market value for the i^{th} firm for year t

$BM_{i:t}$ = log of the book-to-market ratio for the i^{th} firm for year t

$b_{1:t+1}$ = regression slope corresponding to the market value variable MV

$b_{2:t+1}$ = regression slope corresponding to the book-to-market ratio variable BM

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[60] Fama and French (2008) refer to the future return variable $dM_{i:\mathrm{t,t+1}}$ as R_{t+1}.This study refers to the one period future return variable as $dM_{i:\mathrm{t,t+1}}$ to maintain continuity with the market price return variable dM used throughout this study.

a_{t+1} = regression intercept

$e_{i:t,t+1}$ = error term representing the difference between the actual dependent variable values to the calculated dependent variable values using the regression equation

N = average number of sample firms

i = firm index: i = *1*, *2*, ..., N

T = maximum year count at the sample level

t = time index: t = *1*, *2*, ..., T

O.6 The Fama and McBeth t-Statistic for Regressions for Market Value and Book-to-Market Ratio to Predict Market Price Returns

The slope and intercept parameters from the regression equation (O.15) is averaged for the time series period $t = 1,2,\ldots,T$. Denoting the averaged regression parameters from equation (O.15) for the time series maximum year count T as $\bar{b}_{1:\mathrm{T}}$; $\bar{b}_{2:\mathrm{T}}$; and, $\bar{a}_{\mathrm{T}}$. Representing for each regression parameter the general reference $\bar{\gamma}_T$, the Fama and McBeth (1973) *t-statistic* is applied using the following formula:

$$t(\bar{\gamma}_T) = \frac{\bar{\gamma}_T}{SD(\bar{\gamma}_T)/\sqrt{T}} \tag{O.16}$$

Where:

$t(\bar{\gamma}_T)$ = Fama and McBeth t-statistic

$\bar{\gamma}_T$ = generic representation of the parameters: $\bar{b}_{1:\mathrm{T}}$; $\bar{b}_{2:\mathrm{T}}$; and, $\bar{a}_{\mathrm{T}}$ from equation (O.15)

$SD(\bar{\gamma}_T)$ = sample standard deviation at time T for the $\bar{\gamma}_T$ parameters

T = maximum year count at the sample level representing the number of years in the time series

The Fama and McBeth (1973) *t-statistic* is proposed to measure the level of significance aligned to the *p-value* measure of significance. In that the *t-statistic* represents a measure of the standard deviation, while the *p-value* represents the probability level calculated from the *t-statistic* standard deviation.

When applying the Fama and McBeth (1973) *t-statistic*, the R^2 measure is measured by taking the average of the cross-sectional regressions R^2 measure for years $t = 1,2,\ldots,T$.

O.7 Descriptive Statistics for Market and Accounting Totals and Market Price and Value-at-Risk

To determine the descriptive statistics for the mean and standard deviation relationships between the variables book-to-market ratio, market value, market price, and the accounting totals, and Value-at-Risk represented by the Historical Value-At-Risk Actual, descriptive statistics are measured using the formulas presented in equations (O.17) and (O.18).

The statistical mean for the selected variables is measured by developing the population cross-sectional mean equation (M.3) from Appendix M.1.2. The formula to measure the statistical mean for the selected variables is given by:

$$\overline{\Lambda}_{N,t} = \frac{1}{N}\sum_{i=1}^{N} \Lambda_{i,t} \tag{O.17}$$

Where:

$\overline{\Lambda}_{N,t}$ = mean market and accounting variables total amounts, market price, and Value-at-Risk (substituted to $\overline{\mathrm{V}}_{N,t}$ for the Value-at-Risk variable) at time t for N sample firms

$\Lambda_{i,t}$ = market and accounting variables total amounts, market price, and Value-at-Risk (substituted to $\mathrm{V}_{N,t}$ for the Value-at-Risk variable) for the i^{th} firm at time t

N = number of firms that represent the sample at time t

i = firm index

t = time index

Developed from equation (M.4) presented to measure the population cross-sectional standard deviation in Appendix M.1.2, the formula to measure the standard deviation of means for market and accounting variable total amounts, market price, and Value-at-Risk is given by:

$$SD(\overline{\Lambda}_{N,t}) = \sqrt{\frac{1}{N-1}\sum_{i=1}^{N}(\Lambda_{i,t} - \overline{\Lambda}_{N,t})^2} \tag{O.18}$$

Where:

$SD(\overline{\Lambda}_{N,t})$ = standard deviation of sample means for market and accounting variables total amounts, market price, and Value-at-Risk at time t for N sample firms

$\overline{\Lambda}_{N,t}$ = mean market and accounting variables total amounts, market price, and Value-at-Risk (substituted to $\overline{\mathrm{V}}_{N,t}$ for the Value-at-Risk variable) at time t for N sample firms

$\Lambda_{i,t}$ = market and accounting variables total amounts, market price, and Value-at-Risk (substituted to $\mathrm{V}_{N,t}$ for the Value-at-Risk variable) for the i^{th} firm at time t

N = number of firms that represent the sample at time t

i = firm index

t = time index

O.8 Correlations for Market and Accounting Totals and Market Price to Value-at-Risk

To determine the relationship between the Historical Value-At-Risk Actual measure and the *total* variables specified in Appendix O.7, correlation analysis is applied. Pearson correlation, presented in equation (M.13) from Appendix M.2, is the correlation analysis method used and is specified as follows:

For a given time series specified by the time values:

$$t = 1,2,\ldots,T \tag{O.19}$$

The Pearson correlation coefficient is calculated by:

$$r(\overline{\Lambda}_{N,T},\overline{\mathrm{V}}_{N,T}) = \frac{\sum_{t=1}^{T}\left(\overline{\Lambda}_{N,t}-\overline{\Lambda}_{N,T}\right)(\overline{\mathrm{V}}_{N,t}-\overline{\mathrm{V}}_{N,T})}{\sqrt{\sum_{t=1}^{T}\left(\overline{\Lambda}_{N,t}-\overline{\Lambda}_{N,T}\right)^2}\sqrt{\sum_{t=1}^{T}(\overline{\mathrm{V}}_{N,t}-\overline{\mathrm{V}}_{N,T})^2}} \tag{O.20}$$

Where:

$r(\overline{\Lambda}_{N,T},\overline{\mathrm{V}}_{N,T})$ = Pearson correlation coefficient

$\overline{\Lambda}_{N,T}$ = mean market and accounting variables total amounts and market price variable at time T for N sample firms

$\overline{\mathrm{V}}_{N,T}$ = mean Historical Value-At-Risk Actual measure at the 95% confidence level, and at the 250-day time horizon at time T for N sample firms

$\overline{\Lambda}_{N,t}$ = mean market and accounting variables total amounts and market price variable at time t for N sample firms

$\overline{V}_{N,t}$ = mean Historical Value-At-Risk Actual measure at the 95% confidence level, and at the 250-day time horizon at time t for N sample firms

T = maximum time series index

t = time series index at the year level: $t = 1, 2, ..., T$

O.9 Descriptive Statistics for Changes in Market and Accounting Totals and Market Price Returns

To calculate the change in the variables in Appendix O.7, the log change equation (M.31) from Appendix M.8 is applied. For variables that contain negative values these changes are omitted from the sample average log change calculation. Variable log changes that are calculated using this approach are labelled with the prefix - *dln*. For such variables, the changes are also calculated, including the negative values, using the relative variable change formula specified in equation (M.30) in Appendix M.8. If the same variable is not presented twice in a result set, that is once with the *dln* prefix label and then without this label, then its change has been calculated using the log change formula specified in equation (M.31).

Equations (M.3) and (M.4) in Appendix M.1.2 are applied to determine the mean and standard deviation respectively for the market and accounting total variable changes and market price change (market price return). From equations (M.3), the formula to measure the statistical mean for the variable changes is given by:

$$\overline{\Lambda}_{N,t-1,t} = \frac{1}{N}\sum_{i=1}^{N}\Lambda_{i,t-1,t} \qquad \text{(O.21)}$$

Where:

$\overline{\Lambda}_{N,t-1,t}$ = average change in the market and accounting variables total amounts and market price (market price return) at time t for N sample firms

$\Lambda_{i,t}$ = change in market and accounting variables total amounts and market price (market price return) for the i^{th} firm in N sample firms at time t

N = number of firms that represent the sample at time t

i = firm index

t = time index

Developed from formula (M.4) in Appendix M.1.2, the formula to measure the standard deviation for the variable changes is given by:

$$SD(\overline{\Lambda}_{N,t-1,t}) = \sqrt{\frac{1}{N-1}\sum_{i=1}^{N}(\Lambda_{i,t-1,t} - \overline{\Lambda}_{N,t-1,t})^2} \quad \text{(O.22)}$$

Where:

$SD(\overline{\Lambda}_{N,t-1,t})$ = standard deviation for the change in market and accounting variables total amounts and market price at time t for N sample firms

$\overline{\Lambda}_{N,t-1,}$ = average change in market and accounting variables total amounts and market price (market price return) at time t for N sample firms

$\Lambda_{i,t}$ = change in the market and accounting variables total amounts and market price (market price return) for the i^{th} firm at time t

N = number of firms that represent the sample at time t

i = firm index

t = time index

O.10 Correlations for Changes in Market and Accounting Totals and Market Price Returns to Value-at-Risk

To determine the relationship between the Historical Value-At-Risk Actual measure and the change variables specified in Appendix O.7, correlation analysis is applied. Pearson correlation, presented in equation (M.13) from Appendix M.2, is the correlation analysis method used and is specified as follows:

For a given time series specified by the time values:

$$t = 1,2,\ldots, T \quad \text{(O.23)}$$

The Pearson correlation coefficient is calculated by:

$$r(\overline{\Lambda}_{N,T-1,T}, \overline{V}_{N,T}) =$$

$$\frac{\sum_{t=1}^{T} \left(\overline{\Lambda}_{N,t-1,t} - \overline{\Lambda}_{N,T-1,T}\right)(\overline{V}_{N,t} - \overline{V}_{N,T})}{\sqrt{\sum_{t=1}^{T} \left(\overline{\Lambda}_{N,t-1,t} - \overline{\Lambda}_{N,T-1,T}\right)^2} \sqrt{\sum_{t=1}^{T}(\overline{V}_{N,t} - \overline{V}_{N,T})^2}} \quad \text{(O.24)}$$

Where:

$r(\overline{\Lambda}_{N,T-1,T}, \overline{\mathrm{V}}_{N,T-1,T})$ = Pearson correlation coefficient

$\overline{\Lambda}_{N,T-1}$ = average change in the market and accounting variables total amounts and market price variable from time $T-1$ to T for N sample firms

$\overline{\mathrm{V}}_{N,T}$ = mean Historical Value-At-Risk Actual measure at the 95% confidence level, and at the 250-day time horizon at time T for N sample firms

$\overline{\Lambda}_{N,t-1,t}$ = average change market and accounting variables total amounts and market price variable from time t-1 to t for N sample firms

$\overline{\mathrm{V}}_{N,t}$ = mean Historical Value-At-Risk Actual measure at the 95% confidence level, and at the 250-day time horizon at time t for N sample firms

T = maximum time series index

t = time series index at the year level: $t = 1, 2, ..., T$

O.11 Regressions for Change in Market Value and Market Price Return

In Section 3.2.3 it is detailed that the book-to-market ratio measure uses *book equity* to *market value*. This study develops and applies the relative delta measure specified in Section 3.2.4 based on the change in *total equity* to the change in *market price*. The main difference between these two measures is that, the book-to-market ratio applies the market value as its denominator, and the relative delta measure applies the market price as its denominator.

To analyse the relationship between *market value* and *market price*, cross-sectional and time series regressions are applied. The specific variables examined are the *change in the market value* and the *change in market price*.

O.11.1 Cross-Sectional Regressions for Change in Market Value and Market Price Return

The cross-sectional regression applied to determine the relationship between the change in the market value variable and the change in the market price (market price return) variable is specified by the following:

$$dM_{i:\Psi-1,\Psi} = a_{\Psi} + b_{\Psi} dMV_{i:\Psi-1,\Psi} + e_{i:\Psi-1,\Psi} \qquad \text{(O.25)}$$

Where:

$dM_{i:\Psi-1,\Psi}$ = market price return variable for the i^{th} firm: that is, the log price change

$dMV_{i:\Psi-1,\Psi}$ = natural log change in the market value variable for the i^{th} firm

b_{Ψ} = regression slope

a_{Ψ} = regression intercept

$e_{i:\Psi-1,\Psi}$ = error term representing the difference between the actual dependent variable values to the calculated dependent variable values using the regression equation

N = average number of sample firms

i = firm index: i = *1*, *2*, ..., N

Ψ = maximum time index based on a single year

O.11.2 Time Series Regressions for Change in Market Value and Market Price Return

The time series regression applied to determine the relationship between the change in the market value variable and the market price return variable is specified by the following:

$$d\overline{M}_{N:t-1,t} = a_T + b_T d\overline{MV}_{N:t-1,t} + e_{N:t-1,t} \qquad (O.26)$$

Where:

$d\overline{M}_{N:t-1,t}$ = mean market price return at time t for N sample firms

$d\overline{MV}_{N:t-1,t}$ = average natural log change in the market value at time t for N sample firms

b_T = regression slope

a_T = regression intercept

$e_{N:t-1,t}$ = error term representing the difference between the actual dependent variable values to the calculated dependent variable values using the regression equation

N = average number of sample firms

T = maximum year count at the sample level

t = time series index: t = *1*, *2*, ..., T

O.12 Cross-Sectional Regressions for Change in Key Accounting Totals and Market Price Return

The cross-sectional regression applied to determine the relationship between the change in key accounting variables and the market price return variable is specified by the following:

$$dM_{i:\Psi-1,\Psi} = a_{\Psi} + b_{\Psi} dAC_{i:\Psi-1,\Psi} + e_{i:\Psi-1,\Psi} \qquad (O.27)$$

Where:

$dM_{i:\Psi-1,\Psi}$ = market price return for the i^{th} firm: that is, the log price change

$dAC_{i:\Psi-1,\Psi}$ = change in the key accounting total variable for the i^{th} firm

b_{Ψ} = regression slope

a_{Ψ} = regression intercept

$e_{i:\Psi-1,\Psi}$ = error term representing the difference between the actual dependent variable values to the calculated dependent variable values using the regression equation

N = average number of sample firms

i = firm index: i = *1*, *2*, ..., N

Ψ = maximum time index based on a single year

This regression approach is presented in a generalised form for each key accounting total and market price return in Appendix F.1.

O.13 Cross-Sectional Regressions for Relative Delta and Historical Value-at-Risk Actual – Null Hypothesis Evaluation

The cross-sectional regression applied to determine the relationship between the relative delta variable and the Historical Value-at-Risk Actual variable is specified by the following:

$$V_{i:\Psi} = a_{\Psi} + b_{\Psi}(dAC - dM)_{i:\Psi-1,\Psi} + e_{i:\Psi} \qquad (O.28)$$

Where:

$V_{i:\Psi}$ = *Historical Value-At-Risk Actual* for the i^{th} firm measured at the year-end of the year represented by the year count Ψ

$(dAC - dM)_{i:\Psi-1,\Psi}$ = relative delta measure: change in the key accounting total variable to the market price return variable for the i^{th} firm

b_{Ψ} = regression slope

a_{Ψ} = regression intercept

$e_{i:\Psi}$ = error term representing the difference between the actual dependent variable values to the calculated dependent variable values using the regression equation

N = average number of sample firms

i = firm index: i = *1*, *2*, ..., N

Ψ = maximum time index based on a single year

O.14 Computer System, Data Analysis and Modelling Products

Data analysis and simulations are performed on a computer system with the specifications presented in Table O.1.

Table O.1 Computer System Description and Specification

The table shows information for the computer system used for data analysis. The System Description column presents the systems main characteristics. The Specification column presents the system details that correspond to the system descriptions.

System Description	Specification
Operating system	Windows 7, 64-bit version
Processors	Intel Pentium Dual-Core (2 core) Processor
Processor Speed	2.10 GHz per processor
Random Access Memory (RAM)	4 Giga bytes

The data analysis methods and the products, used to perform data analysis in this study, are presented in Table O.2.

Table O.2 Data Analysis Description and Products

The table shows the quantitative analysis approaches applied and the computer system products and programming languages used to perform data analysis. The Analysis Description column presents the analysis methods applied. The Products column presents the computer system products and programming languages used to perform the corresponding analysis presented in the Analysis Description column.

Analysis Description	Products
Descriptive statistics (mean and standard deviation) and significance tests	PASW Statistics version 17 [c] SPSS version 17 [c] Excel 2007 SQL Server 2008
Value-at-Risk modelling	SQL Server 2008 Excel 2007 C and C++
Correlation analysis: (inc. Pearson correlation coefficient)	PASW Statistics version 17 [c] SPSS version 17 [c] Excel 2007
Regression analysis: Ordinary Least Squares (OLS) Method	PASW Statistics version 17 [c] SPSS version 17 [c]
Other tests and quality assurance	Excel 2007 PASW Statistics version 17 [c] SPSS version 17 [c]

Table notes: [c] The product SPSS (Statistical Package for the Social Sciences) version 17 was used for the first part of 2009. The statistical product PAWS (Predictive Analytics SoftWare) version17 was used during the latter part of 2009 and thereafter. The PAWS product is the International Business Machines (IBM) Corporation's version of the previously named SPSS product. In 2010, this product was renamed to IBM SPSS Statistics.

APPENDIX P ANALYSIS AND RESULTS FOR MARKET PRICE RETURNS, VALUE-AT-RISK, GDP AND GENERAL MARKET CONDITIONS

The analysis and results for descriptive statistics and distribution descriptive statistics applied to the change in market price (market price return) variable are presented in this appendix. Descriptive statistics are also presented for the variance-covariance Value-at-Risk measure.

This appendix also presents the variance-covariance, historical and Monte Carlo simulation Value-at-Risk model analysis based on average yearly backtested results. The backtested results are presented for selected Value-at-Risk time horizons at the 95% confidence level and calculated for a selected number of historical and simulated return observations.

In addition, analysis and results for the Historical Value-at-Risk Actual measure for selected time horizons and confidence levels are presented. Analysis and results are also presented for the regressions that test the Historical Value-at-Risk Actual variable and the market price return variable.

This appendix also presents analysis and results for reactions to economic and market conditions for the samples and the control group market price return and Historical Value-at-Risk Actual. This analysis is conducted using regressions. Reactions to economic condition are assessed by analysing results from tests with selected GDP sector levels. Reactions to market conditions are assessed by analysing results from tests with selected stock market indices, short and long-term benchmark interest rates, and foreign exchange currency pair rates.

P.1 Market Price Return Distribution and Variance-Covariance Value-at-Risk Analysis

The descriptive statistics results for the natural log market price returns, the market price return distribution, and the variance-covariance Value-at-Risk for a 1-day time horizon at the 95% confidence level, are presented on a yearly basis for the time range 1993 to 2009 in Table P.1. In this table, Panel A presents results for the Primary and Secondary sample; Panel B presents results for the Control group; Panel C presents results for the Primary sample; and, Panel D presents results for the Secondary sample.

Table P.1 Market Price Return Distribution and Value-at-Risk Descriptive Statistics

Table Description

The Table P.1columns represent the following:

Year is the *panel data* year represented by the number of days from 1st January to 31st December, and also represents the 31st December variable record date for each year. *Obs.* represents the number of sample firms observed for the year.

For the Mean result column: Return is the average 1-day returns for the sample firms observed for year (Year), calculated using equation (M.35). Dist. is the average 1-day return distribution over 300 days for the sample firms, calculated using equation (M.37). Skew is the average skewness based on the distribution, calculated using equation (M.40). Kurtosis is the average kurtosis based on the distribution, calculated using equation (M.43). Excess Kurtosis is the average excess kurtosis based on the distribution, calculated using equation (M.46). V is the average 1-day time horizon variance-covariance Value-at-Risk at the 95% confidence level calculated using equation (N.5) for the sample firms observed for year (Year), with the averages calculated by applying equation (M.35).

For the Standard Deviation column: Return represents the standard deviation of 1 day sample return yearly averages, calculated by equation (M.36). Dist. represents the standard deviation of 1 day sample return averages over 300 days, calculated using equation (M.38). Skew is the standard deviation of the sample average skewness, calculated using equation (M.41). Kurtosis is the standard deviation of the sample average kurtosis, calculated using equation (M.44). Excess Kurtosis is the standard deviation of the sample average excess kurtosis, calculated using equation (M.47). V is the standard deviation of the sample average 1-day time horizon variance-covariance Value-at-Risk at the 95% confidence level, calculated by applying equation (M.36).

Table P.1 (Continued)

PANEL A

The Primary and Secondary Sample Market Price Return Distribution Descriptive Statistics and Variance-Covariance Value-at-Risk using 300 historical observations based on 1-day returns

Year	*Obs.*	Mean						Standard Deviation					
		Return	Dist.	Skew	Kurtosis	Excess Kurtosis	*V*	Return	Dist.	Skew	Kurtosis	Excess Kurtosis	*V*
1993	15	0.0019	0.0022	0.876	15.98	12.95	-0.023	0.0020	0.0010	1.962	14.61	14.61	0.020
1994	15	-0.0001	0.0012	0.148	14.67	11.64	-0.021	0.0008	0.0008	1.839	15.82	15.82	0.013
1995	16	0.0009	0.0003	-0.314	14.08	11.05	-0.018	0.0009	0.0006	1.469	15.73	15.73	0.010
1996	16	0.0004	0.0007	0.279	11.83	8.80	-0.016	0.0005	0.0006	1.006	9.25	9.25	0.006
1997	16	0.0010	0.0008	0.225	12.13	9.10	-0.018	0.0008	0.0006	1.082	10.73	10.73	0.007
1998	16	0.0002	0.0008	0.161	10.52	7.49	-0.027	0.0006	0.0007	0.715	7.10	7.10	0.012
1999	16	0.0012	0.0006	0.687	14.52	11.49	-0.034	0.0012	0.0005	2.293	30.96	30.96	0.013
2000	16	0.0006	0.0006	0.420	9.82	6.79	-0.032	0.0009	0.0013	0.736	10.58	10.58	0.014
2001	16	-0.0006	0.0001	-0.202	7.76	4.73	-0.032	0.0007	0.0006	0.518	5.08	5.08	0.013
2002	16	-0.0015	-0.0008	-0.312	8.07	5.04	-0.034	0.0015	0.0009	0.513	4.06	4.06	0.014
2003	16	0.0009	-0.0006	-0.044	6.13	3.10	-0.036	0.0006	0.0010	0.407	2.49	2.49	0.020
2004	16	0.0004	0.0006	0.112	6.18	3.15	-0.023	0.0004	0.0004	0.427	3.26	3.26	0.010
2005	16	0.0007	0.0006	-0.020	6.91	3.88	-0.019	0.0007	0.0004	0.571	3.68	3.68	0.006
2006	16	0.0006	0.0008	0.026	6.55	3.52	-0.021	0.0003	0.0006	0.518	2.03	2.03	0.006
2007	16	-0.0006	0.0002	-0.072	6.45	3.42	-0.024	0.0016	0.0006	0.329	2.31	2.31	0.007
2008	16	-0.0024	-0.0015	-0.049	8.79	5.76	-0.043	0.0022	0.0019	0.808	7.12	7.12	0.022
2009	16	0.0012	-0.0014	-0.140	11.30	8.27	-0.071	0.0014	0.0018	1.327	12.50	12.50	0.035

Panel notes: The variable means are sample averages. The sample consists of a maximum of 16 observations per year from 16 firms in the LSE consisting of the 5 banks and 11 banking related firms that adopted the IFRS standards in 2005. The highlighted record identifies the samples IFRS accounting standards adoption year.

Table P.1 (Continued)

PANEL B

The Control Group Market Price Return Distribution Descriptive Statistics and Variance-Covariance Value-at-Risk using 300 historical observations based on 1-day returns

Year	*Obs.*	Mean						Standard Deviation					
		Return	Dist.	Skew	Kurtosis	Excess Kurtosis	*V*	Return	Dist.	Skew	Kurtosis	Excess Kurtosis	*V*
1993	12	0.0014	0.0015	0.560	7.89	4.86	-0.016	0.0009	0.0005	0.461	3.14	3.14	0.005
1994	12	-0.0005	0.0006	-0.037	7.50	4.47	-0.017	0.0003	0.0003	0.520	4.39	4.39	0.006
1995	12	0.0003	-0.0002	-0.407	6.30	3.27	-0.014	0.0004	0.0003	0.196	2.95	2.95	0.004
1996	12	0.0001	0.0004	-0.440	7.23	4.19	-0.011	0.0005	0.0002	0.439	2.25	2.25	0.003
1997	12	0.0001	0.0001	-0.718	8.72	5.69	-0.012	0.0010	0.0007	0.319	2.51	2.51	0.004
1998	12	-0.0001	-0.0001	-0.666	10.45	7.42	-0.020	0.0006	0.0009	0.422	4.78	4.78	0.009
1999	12	0.0017	0.0005	-0.358	5.62	2.59	-0.021	0.0016	0.0008	0.282	1.74	1.74	0.008
2000	12	-0.0002	0.0010	-0.474	6.98	3.95	-0.017	0.0009	0.0006	0.430	3.01	3.01	0.006
2001	12	-0.0006	-0.0004	-0.544	7.67	4.64	-0.018	0.0003	0.0004	0.327	3.55	3.55	0.005
2002	12	-0.0012	-0.0007	-0.521	8.18	5.15	-0.021	0.0005	0.0004	0.657	5.29	5.29	0.003
2003	12	0.0010	-0.0005	-0.119	5.74	2.71	-0.023	0.0005	0.0003	0.256	1.59	1.59	0.005
2004	12	0.0005	0.0007	-0.140	6.17	3.14	-0.016	0.0004	0.0005	0.404	2.87	2.87	0.003
2005	12	0.0011	0.0008	-0.285	7.88	4.85	-0.013	0.0005	0.0002	0.535	4.58	4.58	0.003
2006	12	0.0004	0.0009	-0.575	8.28	5.24	-0.017	0.0007	0.0002	0.492	2.37	2.37	0.003
2007	12	0.0001	0.0005	-0.528	7.24	4.21	-0.018	0.0008	0.0005	0.402	1.66	1.66	0.003
2008	12	-0.0018	-0.0007	-0.112	5.81	2.78	-0.026	0.0007	0.0006	0.334	1.00	1.00	0.002
2009	12	0.0012	-0.0009	-0.146	6.39	3.36	-0.039	0.0006	0.0003	0.427	1.65	1.65	0.005

Panel notes: The variable means are yearly averages from the Control group firms. The Control group consists of a maximum of 12 observations per year from 12 banking related firms in the LSE that did not adopt the IFRS standards in 2005. The highlighted record identifies the samples IFRS accounting standards adoption year.

Table P.1 (Continued)

PANEL C

The Primary Sample Market Price Return Distribution Descriptive Statistics and Variance-Covariance Value-at-Risk using 300 historical observations based on 1-day returns

Year	*Obs.*	Mean						Standard Deviation					
		Return	Dist.	Skew	Kurtosis	Excess Kurtosis	*V*	Return	Dist.	Skew	Kurtosis	Excess Kurtosis	*V*
1993	4	0.0031	0.0020	-0.852	17.65	14.62	-0.023	0.0021	0.0012	2.514	24.27	24.27	0.013
1994	4	-0.0005	0.0009	-1.078	16.43	13.40	-0.022	0.0005	0.0006	2.422	24.86	24.86	0.012
1995	5	0.0012	0.0004	-1.112	15.32	12.29	-0.021	0.0010	0.0004	2.351	25.49	25.49	0.012
1996	5	0.0008	0.0010	-0.069	6.40	3.37	-0.022	0.0005	0.0008	0.557	5.28	5.28	0.004
1997	5	0.0011	0.0013	-0.021	4.78	1.75	-0.025	0.0011	0.0006	0.130	0.75	0.75	0.002
1998	5	0.0001	0.0005	0.134	4.82	1.79	-0.039	0.0006	0.0010	0.201	0.99	0.99	0.006
1999	5	0.0009	0.0008	0.179	4.20	1.17	-0.047	0.0008	0.0005	0.157	0.43	0.43	0.005
2000	5	0.0005	0.0000	0.185	4.44	1.41	-0.043	0.0008	0.0006	0.188	1.15	1.15	0.006
2001	5	-0.0001	0.0005	-0.078	5.21	2.18	-0.039	0.0005	0.0006	0.239	1.02	1.02	0.003
2002	5	-0.0010	-0.0003	-0.319	6.47	3.44	-0.038	0.0007	0.0003	0.257	2.47	2.47	0.004
2003	5	0.0007	-0.0005	0.320	4.35	1.32	-0.039	0.0004	0.0007	0.224	0.52	0.52	0.009
2004	5	0.0003	0.0004	0.249	4.98	1.95	-0.023	0.0002	0.0003	0.214	1.64	1.64	0.003
2005	5	0.0003	0.0003	-0.207	6.15	3.12	-0.017	0.0004	0.0002	0.464	1.92	1.92	0.003
2006	5	0.0005	0.0005	0.004	5.41	2.38	-0.018	0.0003	0.0003	0.333	1.52	1.52	0.004
2007	5	-0.0007	0.0001	0.026	5.08	2.05	-0.020	0.0009	0.0003	0.081	0.60	0.60	0.004
2008	5	-0.0041	-0.0018	0.209	6.83	3.80	-0.045	0.0026	0.0014	0.234	1.81	1.81	0.011
2009	5	0.0011	-0.0030	-0.833	19.64	16.61	-0.108	0.0018	0.0026	2.358	20.80	20.80	0.038

Panel notes: The variable means are sample averages. The sample consists of a maximum of 5 observations per year from the 5 banks in the LSE that adopted the IFRS standards in 2005. The highlighted record identifies the samples IFRS accounting standards adoption year.

Table P.1 (Continued)

PANEL D

The Secondary Sample Market Price Return Distribution Descriptive Statistics and Variance-Covariance Value-at-Risk using 300 historical observations based on 1-day returns

Year	*Obs.*	Mean						Standard Deviation					
		Return	Dist.	Skew	Kurtosis	Excess Kurtosis	*V*	Return	Dist.	Skew	Kurtosis	Excess Kurtosis	*V*
1993	11	0.0012	0.0021	1.662	15.22	12.19	-0.023	0.0016	0.0010	1.037	9.09	9.09	0.023
1994	11	0.0001	0.0012	0.705	13.88	10.85	-0.021	0.0009	0.0008	1.277	11.23	11.23	0.014
1995	11	0.0007	0.0002	0.049	13.51	10.48	-0.017	0.0008	0.0006	0.749	10.50	10.50	0.008
1996	11	0.0002	0.0006	0.438	14.30	11.27	-0.014	0.0004	0.0004	1.142	9.79	9.79	0.005
1997	11	0.0009	0.0006	0.336	15.48	12.45	-0.014	0.0007	0.0005	1.307	11.54	11.54	0.005
1998	11	0.0002	0.0009	0.173	13.11	10.08	-0.022	0.0006	0.0005	0.866	7.18	7.18	0.009
1999	11	0.0014	0.0005	0.918	19.21	16.18	-0.028	0.0013	0.0005	2.772	36.89	36.89	0.012
2000	11	0.0007	0.0009	0.528	12.27	9.24	-0.027	0.0010	0.0014	0.871	12.09	12.09	0.013
2001	11	-0.0009	-0.0001	-0.259	8.92	5.89	-0.028	0.0007	0.0006	0.608	5.80	5.80	0.015
2002	11	-0.0017	-0.0010	-0.308	8.80	5.77	-0.032	0.0017	0.0010	0.606	4.52	4.52	0.017
2003	11	0.0010	-0.0006	-0.210	6.93	3.90	-0.034	0.0007	0.0012	0.363	2.62	2.62	0.023
2004	11	0.0005	0.0007	0.050	6.73	3.70	-0.023	0.0004	0.0005	0.491	3.71	3.71	0.012
2005	11	0.0009	0.0007	0.065	7.25	4.22	-0.019	0.0007	0.0005	0.614	4.30	4.30	0.007
2006	11	0.0006	0.0010	0.036	7.07	4.04	-0.023	0.0004	0.0006	0.598	2.08	2.08	0.006
2007	11	-0.0006	0.0003	-0.116	7.08	4.05	-0.026	0.0019	0.0007	0.391	2.55	2.55	0.007
2008	11	-0.0017	-0.0013	-0.166	9.69	6.66	-0.042	0.0015	0.0021	0.954	8.48	8.48	0.025
2009	11	0.0012	-0.0006	0.175	7.52	4.49	-0.054	0.0012	0.0005	0.264	3.31	3.31	0.017

Panel notes: The variable means are sample averages. The sample consists of a maximum of 11 observations per year from 11 banking related firms in the LSE that adopted the IFRS standards in 2005. The highlighted record identifies the samples IFRS accounting standards adoption year.

Analysis

The general inference, for the Primary and Secondary sample, the Control group, the Primary sample and the Secondary sample (collectively referred to as the samples and the control group), from analysing the Table P.1 results is that there are materially significant changes to both daily average returns and market price variance-covariance Value-at-Risk immediately after the 2005 accounting change. Table P.1 results, however, infer that the Primary and Secondary sample firms exhibited lower returns and higher Value-at-Risk levels after 2005 compared to the Control group.

Further analysis of these results reveal that the samples and the control group yearly average market price returns (calculated using daily returns), presented in the Return column, infer materially significant changes after 2005 for the time periods 2006 to 2008, and 2008 to 2009, when compared to similar time periods before 2005. Materially significant changes in returns for before 2005 are also inferred for the time period 1999 to 2002. When compared to before 2005, the results show that the sample market price return volatility level, measured using the standard deviation of sample means, increased for the Primary and Secondary sample after 2005. This compares with a decrease in the level of volatility for the Control group after 2005.

The average distribution characteristics for the 300 day average returns are presented in Table P.1 by the distribution descriptive statistics Dist. (Distribution), Skew, Kurtosis and Excess Kurtosis. It is expected that the accuracy for the variance-covariance Value-at-Risk model increase when the property of the distribution tends to the normal distribution. The normal distribution is specified by a mean of 0 and a standard deviation of 1. This distribution property is also characterised by a Skew measure of 0, and an Excess Kurtosis measure of 0. Examining Table P.1 the distribution mean presented in column Dist. does show near 0 levels for the samples and the Control group distributions. However, the Skew and Excess Kurtosis properties deviate for the optimal 0 level. This suggests that the variance-covariance Value-at-Risk results presented in Table P.1 would require further examination.

In addition to the variance-covariance Value-at-Risk model, in Appendix N.3, this study presents results for the historical and Monte Carlo simulation Value-at-Risk models.

P.2 Value-at-Risk Analysis

The Value-at-Risk and *Value-at-Risk backtest breach* results for the variance-covariance, historical and Monte Carlo Simulation Value-at-Risk models for 1-day, 250-day and 500-day time horizons at the 95% confidence level are presented on a yearly basis for the time range 1993 to 2009 in Table P.2. This table presents Value-at-Risk levels for the 1-day time horizon calculated using 300 1-day historical returns, the 250-day time horizon calculated using 300 historical 250-day returns and the 500-day time horizon calculated using 500 historical 500-day returns. Table P.2 presents descriptive statistics for these backtests on a yearly basis for the time range 1993 to 2009.

Table P.2 Panel A presents Value-at-Risk results for the Primary and Secondary Sample for the 1-day time horizon; Panel B presents Value-at-Risk results for the Control group for the 1-day time horizon; Panel C presents Value-at-Risk results for the Primary and Secondary Sample for the 250-day time horizon; Panel D presents Value-at-Risk results for the Control group for the 250-day time horizon; E presents Value-at-Risk results for the Primary and Secondary Sample for the 500-day time horizon; and, Panel F presents Value-at-Risk results for the Control group for the 500-day time horizon.

Table P.2 Value-at-Risk Analysis for Market Price Returns

Table Description

The Table P.2 columns represent the following:

Year is the *panel data* year, represented by the number of days from 1st January to 31st December, and also represents the 31st December variable record date for each year. *Obs.* represents the number of sample firms observed for the year.

The Average Return column represents the average returns for the sample firms observed for year (Year). The average returns are based on the stated time horizon days and calculated using 300 days historical returns for Panel A to Panel D and 500 days historical returns for Panels E and F. The average returns are calculated using equation (M.35).

For the Variance-Covariance Average, Historical Average and Monte Carlo Simulation Average columns:

V 95% is the average Value-at-Risk for the stated time horizons at the 95% confidence level. The Value-at-Risk parameters are calculated for the stated time horizon using 300 days historical returns for Panel A to Panel D and 500 days historical returns for Panel E and Panel F. The variance-covariance Value-at-Risk is calculated using equation (N.5); the historical Value-at-Risk is calculated using equation (N.9); and the Monte Carlo simulation Value-at-Risk is calculated using equation (N.22). For the Value-at-Risk models the average Value-at-Risk for the sample firms observed (*Obs.*) for year (Year) is calculated by applying equation (M.35).

In Hori. Breach Count (*In-time Horizon Breach* Count) is the backtested count for the number of times the actual market price return variable breached the Value-at-Risk level within the number of time horizon days. The In Hori. Breach Count is measured using equation (N.32).

End Hori. Breach Count (*End-time Horizon Breach* Count)[a] is the backtested binary code that is set to 1 if the actual market price return variable breached the Value-at-Risk level at the time horizon date. End Hori. Breach Count is calculated using equation (N.33). In Table P.2, the End Hori. Breach Count is calculated by determining if the average return from the Average Return column is greater than the average Value-at-Risk from the *V* 95% column.

Table description notes:

[a]For a given year, the Value-at-Risk levels (reported in the V95% column) and the in-time horizon breach counts (reported in the In Hori. Breach Count column) may differ from expectation when comparing levels between the three models. This difference is due primarily to sample averaging and rounding effects.

Table P.2 (Continued)

PANEL A

The Primary and Secondary sample Value-at-Risk results for the 1-day time horizon Variance-Covariance, Historical and Monte Carlo Simulation models

Year	*Obs.*	Average Return	Variance-Covariance Average			Historical Average			Monte Carlo Simulation Average		
			V 95%	In Hori. Breach Count[a]	End Hori. Breach Count[b]	*V* 95%	In Hori. Breach Count[a]	End Hori. Breach Count[b]	*V* 95%	In Hori. Breach Count[a]	End Hor. Breach Count[b]
1993	15	0.0019	-0.023	0		-0.0170	0		-0.0249	0	
1994	15	-0.0001	-0.021	0		-0.0183	0		-0.0232	0	
1995	16	0.0009	-0.0180	0		-0.0171	0		-0.0184	0	
1996	16	0.0004	-0.0162	0		-0.0134	0		-0.0172	0	
1997	16	0.0010	-0.0178	0		-0.0152	0		-0.0179	0	
1998	16	0.0002	-0.0270	0		-0.0240	0		-0.0277	0	
1999	16	0.0012	-0.0340	0		-0.0309	0		-0.0356	0	
2000	16	0.0006	-0.0319	0		-0.0289	0		-0.0339	0	
2001	16	-0.0006	-0.0317	0		-0.0305	0		-0.0338	0	
2002	16	-0.0015	-0.0336	0		-0.0333	0		-0.0364	0	
2003	16	0.0009	-0.0355	0		-0.0343	0		-0.0379	0	
2004	16	0.0004	-0.0228	0		-0.0206	0		-0.0234	0	
2005	16	0.0007	-0.0185	0		-0.0166	0		-0.0189	0	
2006	16	0.0006	-0.0212	0		-0.0191	0		-0.0214	0	
2007	16	-0.0006	-0.0239	0		-0.0226	0		-0.0250	0	
2008	16	-0.0024	-0.0432	0		-0.0381	0		-0.0481	0	
2009	16	0.0012	-0.0705	0		-0.0636	0		-0.0778	0	

Panel notes: [a,b] In Table P.2 yearly breaches are rounded to the nearest whole number.

The figures presented are sample averages. The sample consists of a maximum of 16 observations per year from 16 firms in the LSE consisting of the 5 banks and 11 banking related firms that adopted the IFRS standards in 2005. The highlighted record identifies the samples IFRS accounting standards adoption year.

Table P.2 (Continued)

PANEL B

The Control group Value-at-Risk results for the 1-day time horizon Variance-Covariance, Historical and Monte Carlo Simulation models

Year	*Obs.*	Average Return	Variance-Covariance Average			Historical Average			Monte Carlo Simulation Average		
			V 95%	In Hori. Breach Count[a]	End Hori. Breach Count[b]	*V* 95%	In Hori. Breach Count[a]	End Hori. Breach Count[b]	*V* 95%	In Hori. Breach Count[a]	End Hori. Breach Count[b]
1993	12	0.0014	-0.0162	0		-0.0138	0		-0.0139	0	
1994	12	-0.0005	-0.0166	0		-0.0158	0		-0.0152	0	
1995	12	0.0003	-0.0137	0		-0.0141	0		-0.0136	0	
1996	12	0.0001	-0.0108	0		-0.0101	0		-0.0101	0	
1997	12	0.0001	-0.0119	0		-0.0114	0		-0.0111	0	
1998	12	-0.0001	-0.0196	0		-0.0197	0		-0.0173	0	
1999	12	0.0017	-0.0212	0		-0.0218	0		-0.0190	0	
2000	12	-0.0002	-0.0172	0		-0.0156	0		-0.0153	0	
2001	12	-0.0006	-0.0180	0		-0.0179	0		-0.0173	0	
2002	12	-0.0012	-0.0211	0		-0.0207	0		-0.0213	0	
2003	12	0.0010	-0.0231	0		-0.0237	0		-0.0238	0	
2004	12	0.0005	-0.0164	0		-0.0153	0		-0.0156	0	
2005	12	0.0011	-0.0134	0		-0.0121	0		-0.0125	0	
2006	12	0.0004	-0.0167	0		-0.0151	0		-0.0162	0	
2007	12	0.0001	-0.0182	0		-0.0174	0		-0.0183	0	
2008	12	-0.0018	-0.0258	0		-0.0266	0		-0.0264	0	
2009	12	0.0012	-0.0391	0		-0.0394	0		-0.0399	0	

Panel notes: [a,b] In Table P.2 yearly breaches are rounded to the nearest whole number.

The figures presented are yearly averages from the Control group firms. The Control group consists of a maximum of 12 observations per year from 12 banking related firms in the LSE that did not adopt the IFRS standards in 2005. The highlighted record identifies the samples IFRS accounting standards adoption year.

Table P.2 (Continued)

PANEL C

The Primary and Secondary sample Value-at-Risk results for the 250-day time horizon Variance-Covariance, Historical and Monte Carlo Simulation models

Year	*Obs.*	Average Return	Variance-Covariance Average			Historical Average			Monte Carlo Simulation Average		
			V 95%	In Hori. Breach Count	End Hori. Breach Count	*V* 95%	In Hori. Breach Count	End Hori. Breach Count	*V* 95%	In Hori. Breach Count	End Hori. Breach Count
1993	-	-	-	-	-	-	-	-	-	-	-
1994	-	-	-	-	-	-	-	-	-	-	-
1995	15	0.169	-0.291	14		0.062	117		0.021	68	
1996	16	0.156	-0.271	1		-0.181	4		-0.225	5	
1997	16	0.228	-0.184	3		-0.030	45		-0.028	40	
1998	16	0.176	-0.185	7		0.019	27		0.001	30	
1999	16	0.157	-0.234	17		-0.003	88		-0.008	59	
2000	16	0.127	-0.304	20		-0.162	38		-0.224	20	
2001	16	-0.010	-0.317	21		-0.141	65		-0.208	31	
2002	16	-0.210	-0.350	57		-0.236	100		-0.295	67	
2003	16	-0.102	-0.249	119		-0.362	82		-0.405	56	
2004	16	0.144	-0.324	15		-0.517	3		-0.608	10	
2005	16	0.161	-0.342	0		-0.250	8		-0.283	11	
2006	16	0.203	-0.161	3		-0.025	9		-0.053	5	
2007	16	0.035	-0.147	8		0.064	87	1	0.043	55	1
2008	16	-0.414	-0.176	100	1	-0.046	159	1	-0.073	105	1
2009	16	-0.283	-0.313	151		-0.453	136		-0.535	99	

Panel notes: The figures presented are sample averages. The sample consists of a maximum of 16 observations per year from 16 firms in the LSE consisting of the 5 banks and 11 banking related firms that adopted the IFRS standards in 2005. The highlighted record identifies the samples IFRS accounting standards adoption year.

Table P.2 (Continued)

PANEL D

The Control group Value-at-Risk results for the 250-day time horizon Variance-Covariance, Historical and Monte Carlo Simulation models

Year	*Obs.*	Average Return	Variance-Covariance Average			Historical Average			Monte Carlo Simulation Average		
			V 95%	In Hori. Breach Count	End Hori. Breach Count	*V* 95%	In Hori. Breach Count	End Hori. Breach Count	*V* 95%	In Hori. Breach Count	End Hori. Breach Count
1993	-	-	-	-	-	-	-	-	-	-	-
1994	-	-	-	-	-	-	-	-	-	-	-
1995	12	0.047	-0.210	25		-0.004	162		-0.014	42	
1996	12	0.099	-0.196	2		-0.200	4		-0.208	12	
1997	12	0.030	-0.142	14		-0.077	38		-0.080	6	
1998	12	-0.016	-0.119	37		-0.059	47		-0.059	10	
1999	12	0.154	-0.156	48		-0.139	93		-0.077	18	
2000	12	0.207	-0.281	0		-0.232	2		-0.239	6	
2001	12	-0.119	-0.256	28		-0.007	109	1	-0.036	10	1
2002	12	-0.182	-0.244	88		-0.186	127		-0.202	27	
2003	12	-0.095	-0.171	163		-0.323	100		-0.330	19	
2004	12	0.172	-0.276	19		-0.445	7		-0.526	9	
2005	12	0.202	-0.318	0		-0.213	4		-0.230	4	
2006	12	0.220	-0.158	0		0.003	7		-0.012	5	
2007	12	0.109	-0.150	3		0.098	90		0.083	12	
2008	12	-0.229	-0.151	76	1	0.016	129	1	-0.017	17	1
2009	12	-0.156	-0.225	173		-0.258	151		-0.240	28	

Panel notes: The figures presented are yearly averages from the Control group firms. The Control group consists of a maximum of 12 observations per year from 12 banking related firms in the LSE that did not adopt the IFRS standards in 2005. The highlighted record identifies the samples IFRS accounting standards adoption year.

Table P.2 (Continued)

PANEL E

The Primary and Secondary sample Value-at-Risk results for the 500-day time horizon Variance-Covariance, Historical and Monte Carlo Simulation models

Year	*Obs.*	Average Return	Variance-Covariance Average			Historical Average			Monte Carlo Simulation Average		
			V 95%	In Hori. Breach Count	End Hori. Breach Count	*V* 95%	In Hori. Breach Count	End Hori. Breach Count	*V* 95%	In Hori. Breach Count	End Hori. Breach Count
1993	-	-	-	-	-	-	-	-	-	-	-
1994	-	-	-	-	-	-	-	-	-	-	-
1995	-	-	-	-	-	-	-	-	-	-	-
1996	-	-	-	-	-	-	-	-	-	-	-
1997	-	-	-	-	-	-	-	-	-	-	-
1998	15	0.378	-0.254	1		0.077	56		-0.001	133	
1999	15	0.331	-0.210	3		0.069	75		0.055	139	
2000	16	0.295	-0.293	13		0.105	128		0.100	140	
2001	16	0.117	-0.311	16		0.062	144		0.034	189	
2002	16	-0.238	-0.375	46		-0.077	151	1	-0.140	210	1
2003	16	-0.321	-0.374	160		-0.119	276	1	-0.164	134	1
2004	16	0.073	-0.481	126		-0.371	211		-0.478	131	
2005	16	0.296	-0.474	19		-0.657	5		-0.810	8	
2006	16	0.369	-0.418	3		-0.635	0		-0.726	41	
2007	16	0.234	-0.384	4		-0.267	10		-0.331	123	
2008	16	-0.395	-0.218	57	1	0.072	177	1	0.071	165	1
2009	16	-0.694	-0.168	250	1	0.140	405	1	0.144	144	1

Panel notes: The figures presented are sample averages. The sample consists of a maximum of 16 observations per year from 16 firms in the LSE consisting of the 5 banks and 11 banking related firms that adopted the IFRS standards in 2005. The highlighted record identifies the samples IFRS accounting standards adoption year.

Table P.2 (Continued)

PANEL F

The Control group Value-at-Risk results for the 500-day time horizon Variance-Covariance, Historical and Monte Carlo Simulation models

Year	*Obs.*	Average Return	Variance-Covariance Average			Historical Average			Monte Carlo Simulation Average		
			V 95%	In Hori. Breach Count	End Hori. Breach Count	*V* 95%	In Hori. Breach Count	End Hori. Breach Count	*V* 95%	In Hori. Breach Count	End Hori. Breach Count
1993	-	-	-	-	-	-	-	-	-	-	-
1994	-	-	-	-	-	-	-	-	-	-	-
1995	-	-	-	-	-	-	-	-	-	-	-
1996	-	-	-	-	-	-	-	-	-	-	-
1997	-	-	-	-	-	-	-	-	-	-	-
1998	12	0.002	-0.185	46		-0.070	64		-0.101	65	
1999	12	0.138	-0.154	87		-0.080	106		-0.065	72	
2000	12	0.379	-0.198	42		-0.111	97		-0.044	78	
2001	12	0.069	-0.250	5		-0.174	62		-0.139	171	
2002	12	-0.308	-0.340	84		-0.145	186	1	-0.126	356	1
2003	12	-0.284	-0.321	231		-0.048	397	1	-0.055	405	1
2004	12	0.106	-0.443	169		-0.368	196		-0.462	72	
2005	12	0.367	-0.345	21		-0.572	2		-0.687	0	
2006	12	0.430	-0.381	2		-0.554	0		-0.657	0	
2007	12	0.322	-0.373	1		-0.208	4		-0.285	31	
2008	12	-0.126	-0.206	36		0.150	161	1	0.143	322	1
2009	12	-0.383	-0.159	225	1	0.196	399	1	0.226	440	1

Panel notes: The figures presented are yearly averages from the Control group firms. The Control group consists of a maximum of 12 observations per year from 12 banking related firms in the LSE that did not adopt the IFRS standards in 2005. The highlighted record identifies the samples IFRS accounting standards adoption year.

Analysis

From the analysis of Table P.2, it is evident that the three Value-at-Risk models variance-covariance, historical and Monte Carlo simulation at the 95% confidence level, produce similar results.

Panels A and B that present results for the 1-day time horizon do not record any breaches for the Primary and Secondary sample and the Control group.

Panels C and D that present results for the 250-day time horizon show that all three models register end-of-time horizon breaches for 2008. The historical and Monte Carlo simulation models also register end-of-time horizon breaches for the Primary and Secondary sample 2007 year, and for the Control group for the 2001 year.

Panels E and F that present results for the 500-day time horizon show that all three models register end-of-time horizon breaches for 2009. All three models also breach the Primary and Secondary sample 2008 year. The historical and Monte Carlo simulation models also register end-of-time horizon breaches for the Primary and Secondary sample and for the Control group for the years 2002, 2003, 2008 and 2009.

In summary, from the results presented in Table P.2, it is evident that all three models for the 250-day and 500-day time horizons report increasing frequency for end-of-time horizon Value-at-Risk breaches after the 2005 accounting change. The in-time horizon breach counts also show evidence of increase of Value-at-Risk breaches after 2005, with breach counts that are comparable to, or exceed those recorded before 2005.

P.3 Historical Value-at-Risk Actual for the 1-Day, 250-Day and 500-Day Time Horizon at the 95% Confidence Level

The *Historical Value-at-Risk Actual* descriptive statistics for the 1-day, 250-day and 500-day time horizons at the 95% confidence level are presented on a yearly basis for the time range 1993 to 2009 in Table P.3. This table presents the Historical Value-at-Risk Actual results for the 1-day time horizon calculated using 300 and 800 historical 1-day returns, the 250-day time horizon calculated using 300 and 800 historical 250-day returns and the 500-day time horizon calculated using 500 and 800 historical 500-day returns.

Table P.3 Panel A presents results for the Primary and Secondary sample; Panel B presents results for the Control group; Panel C presents results for the Primary sample; and, Panel D presents results for the Secondary sample.

For the charts presented in Panels A, B, C and D respectively:

Figures P.1, P.7, P.13 and P.19 plot the Historical Value-at-Risk Actual for the 1-day time horizon calculated using 300 historical 1-day market price returns averaged for the respective sample and control group. The corresponding daily sample market price returns and standard deviation of sample mean returns are also plotted.

Figures P.2, P.8, P.14 and P.20 plot the Historical Value-at-Risk Actual for the 1-day time horizon calculated using 800 historical 1-day market price returns averaged for the respective sample and control group. The corresponding daily sample market price returns and standard deviation of sample mean returns are also plotted.

Figures P.3, P.9, P.15 and P.21 plot the Historical Value-at-Risk Actual for the 250-day time horizon calculated using 300 historical 250-day market price returns averaged for the respective sample and control group. The corresponding 250-day sample market price returns and standard deviation of sample mean returns are also plotted.

Figures P.4, P.10, P.16 and P.22 plot the Historical Value-at-Risk Actual for the 250-day time horizon calculated using 800 historical 250-day market price returns averaged for the respective sample and control group. The corresponding 250-day sample market price returns and standard deviation of sample mean returns are also plotted.

Figures P.5, P.11, P.17 and P.23 plot the Historical Value-at-Risk Actual for the 500-day time horizon calculated using 500 historical 500-day market price returns averaged for the respective sample and control group. The corresponding 500-day market price returns and standard deviation of sample mean returns are also plotted.

Figures P.6, P.12, P.18 and P.24 plot the Historical Value-at-Risk Actual for the 500-day time horizon calculated using 800 historical 500-day market price returns averaged for the respective sample and control group. The corresponding 500-day sample market price returns and standard deviation of sample mean returns are also plotted.

Table P.3 Descriptive Statistics for Historical Value-at-Risk Actual

Table Description

The Table P.3 Panel A to Panel D columns represent the following:

The Statistic column represents the panels: Mean calculated using equation (O.1); and, Standard Deviation of sample means calculated using equation (O.2), for the sample firms observed (*Obs.*) for year (Year). Year is the *panel data* year represented by the number of days from 1st January to 31st December, and also represents the 31st December variable record date for each year.

For the Time Horizon (Days) column: 1, 250 and 500 represent the time horizon days columns; Historical Data (Days) represents the number of historical returns corresponding to the time horizon days; 300, 800 and 500 columns represent the number of historical returns applied to calculate Historical Value-at-Risk Actual. *Obs.* represents the number of sample firms observed for the year.

Table P.3 (Continued)

PANEL A

The Primary and Secondary sample Descriptive Statistics for Historical Value-at-Risk Actual for the 1-Day, 250-Day and 500-Day Time Horizons at the 95% Confidence Level

Statistic	Year	Time Horizon (Days) 1		250		500		*Obs.*
		Historical Data (Days)						
		300	800	300	800	500	800	
Mean	1993	-0.017	-	-	-	-	-	15
	1994	-0.018	-	0.073	-	-	-	15
	1995	-0.017	-0.017	-0.176	-	-	-	16
	1996	-0.013	-0.016	-0.038	-0.147	0.198	-	16
	1997	-0.015	-0.015	0.005	-0.138	0.222	0.066	16
	1998	-0.024	-0.020	0.005	-0.080	0.142	0.023	16
	1999	-0.031	-0.025	-0.164	-0.145	-0.027	0.038	16
	2000	-0.029	-0.029	-0.140	-0.211	-0.197	-0.080	16
	2001	-0.030	-0.030	-0.228	-0.279	-0.194	-0.114	16
	2002	-0.033	-0.031	-0.354	-0.388	-0.172	-0.348	16
	2003	-0.034	-0.033	-0.516	-0.510	-0.408	-0.623	16
	2004	-0.021	-0.030	-0.270	-0.506	-0.418	-0.627	16
	2005	-0.017	-0.024	-0.027	-0.466	-0.221	-0.619	16
	2006	-0.019	-0.019	0.063	-0.177	-0.014	-0.330	16
	2007	-0.023	-0.020	-0.034	-0.050	0.069	-0.004	16
	2008	-0.038	-0.029	-0.458	-0.378	-0.426	-0.318	16
	2009	-0.064	-0.043	-0.916	-0.822	-1.678	-0.970	16
Standard Deviations	1993	0.002	-	-	-	-	-	
	1994	0.002	-	0.051	-	-	-	
	1995	0.002	0.001	0.032	-	-	-	
	1996	0.002	4.9E-04	0.101	0.004	0.003	-	
	1997	0.002	0.001	0.026	0.002	0.049	0.006	
	1998	0.005	0.003	0.120	0.055	0.113	0.022	
	1999	0.003	0.001	0.041	0.019	0.023	0.035	
	2000	0.002	0.001	0.093	0.041	0.096	0.058	
	2001	0.004	0.001	0.150	0.064	0.021	0.047	
	2002	0.004	0.002	0.072	0.037	0.078	0.140	
	2003	0.004	0.001	0.032	0.031	0.029	0.023	
	2004	0.003	0.002	0.196	0.007	0.015	0.002	
	2005	0.001	0.002	0.024	0.013	0.068	0.015	
	2006	0.002	0.001	0.032	0.165	0.086	0.144	
	2007	0.003	0.001	0.077	0.044	0.036	0.138	
	2008	0.007	0.004	0.157	0.133	0.292	0.177	
	2009	0.004	0.002	0.070	0.058	0.172	0.079	

Panel notes: The variable means are sample averages. The sample consists of a maximum of 16 observations per year from 16 firms in the LSE consisting of the 5 banks and 11 banking related firms that adopted the IFRS standards in 2005. The highlighted record identifies the samples IFRS accounting standards adoption year.

Figures P.1 to P.24 Plots of Historical Value-at-Risk Actual

Figure Description

The chart plots in Figures P.1 to P.24 represent the following:

The Market Price Return Average plot is the sample average return calculated on a daily basis for the specified time horizon using equation (M.35), where the returns are calculated on a daily basis for the specified time horizon using equation (N.1); the Market Price Return Standard Deviation plot is the standard deviation of the sample mean returns for the specified time horizon, and calculated on a daily basis by applying equation (M.36) with the maximum time increment set to 1 day.

The Value-at-Risk Average plot is the plot of the Historical Value-at-Risk Actual and the corresponding time horizon at the specified confidence level using the specified number of historical returns, and is calculated using equation (O.1) with the maximum time increment set to 1 day.

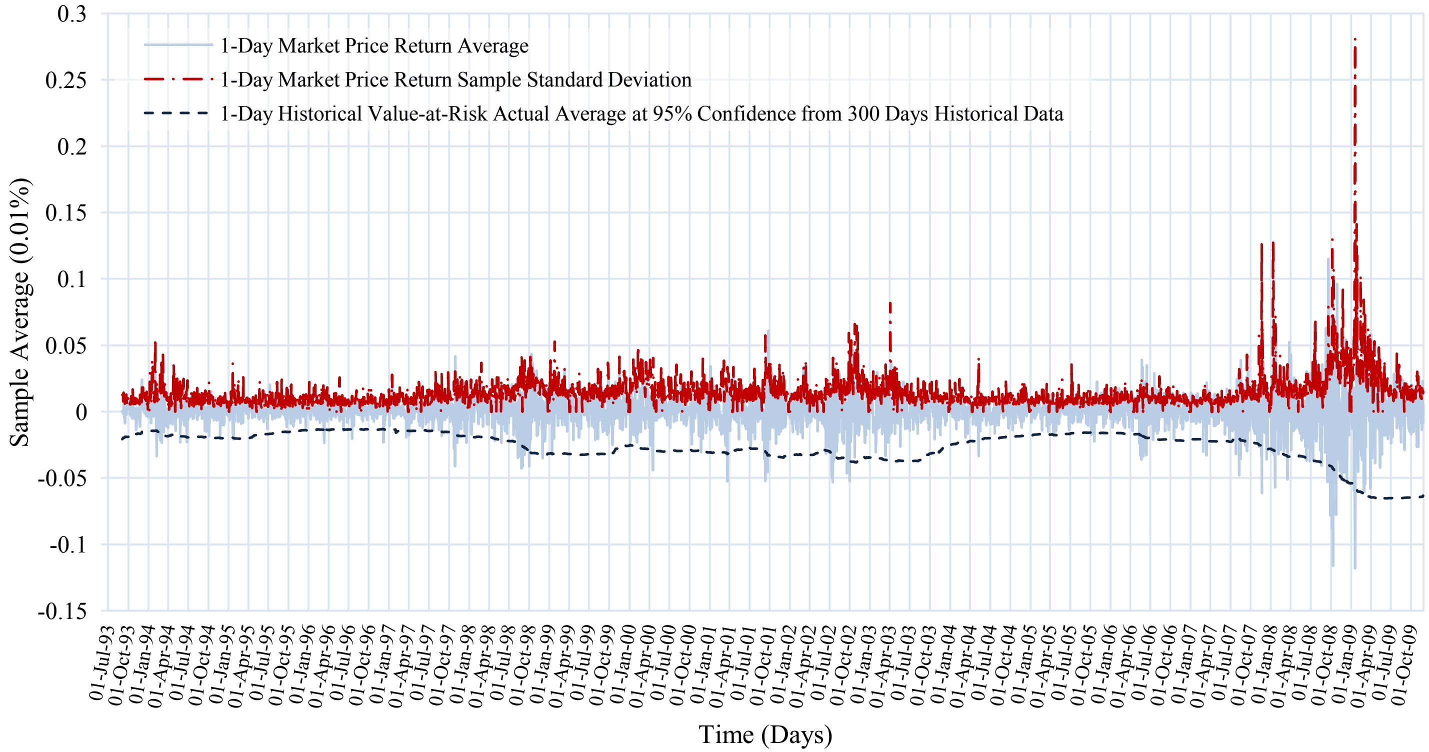

Figure P.1 The Primary and Secondary Sample 1-Day Historical Value-at-Risk Actual at the 95% Confidence Level with 300 Days Historical Data from September 1993 to November 2009

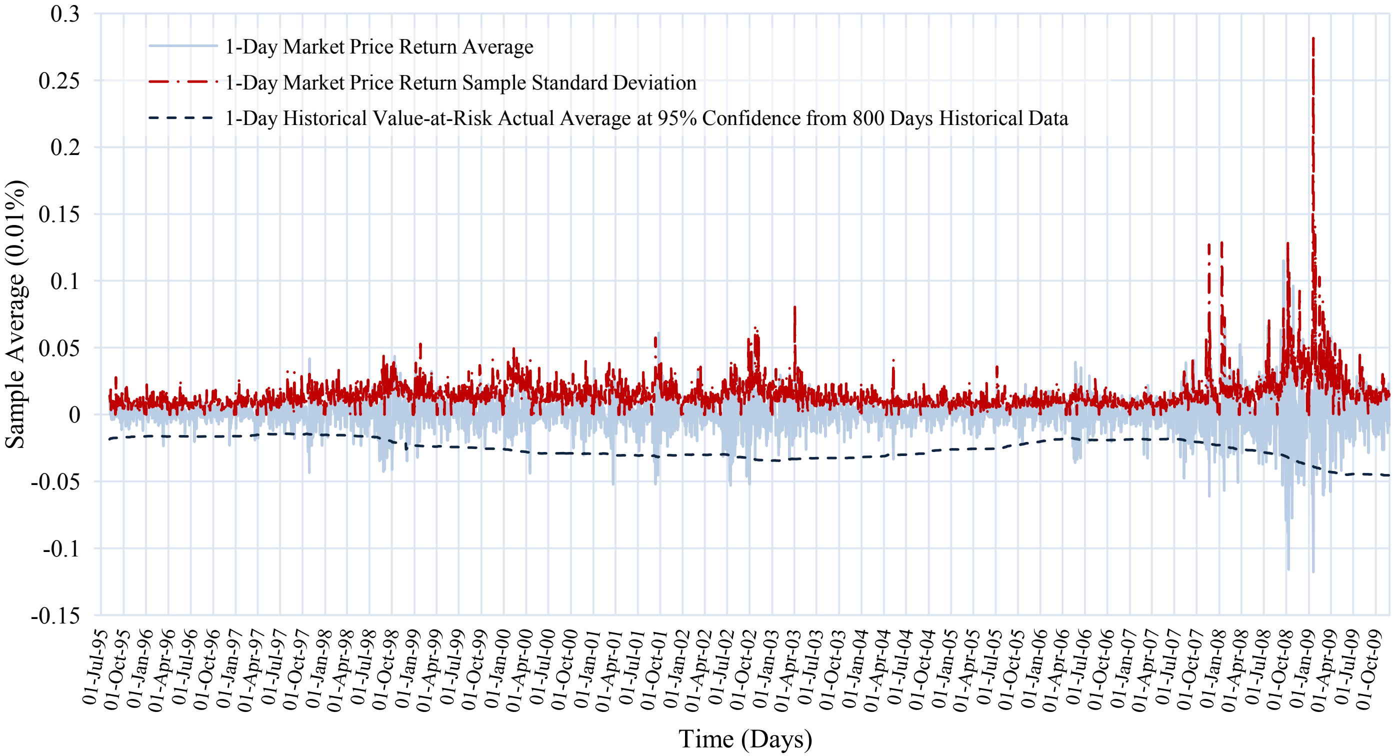

Figure P.2 The Primary and Secondary Sample 1-Day Historical Value-at-Risk Actual at the 95% Confidence Level with 800 Days Historical Data from August 1995 to November 2009

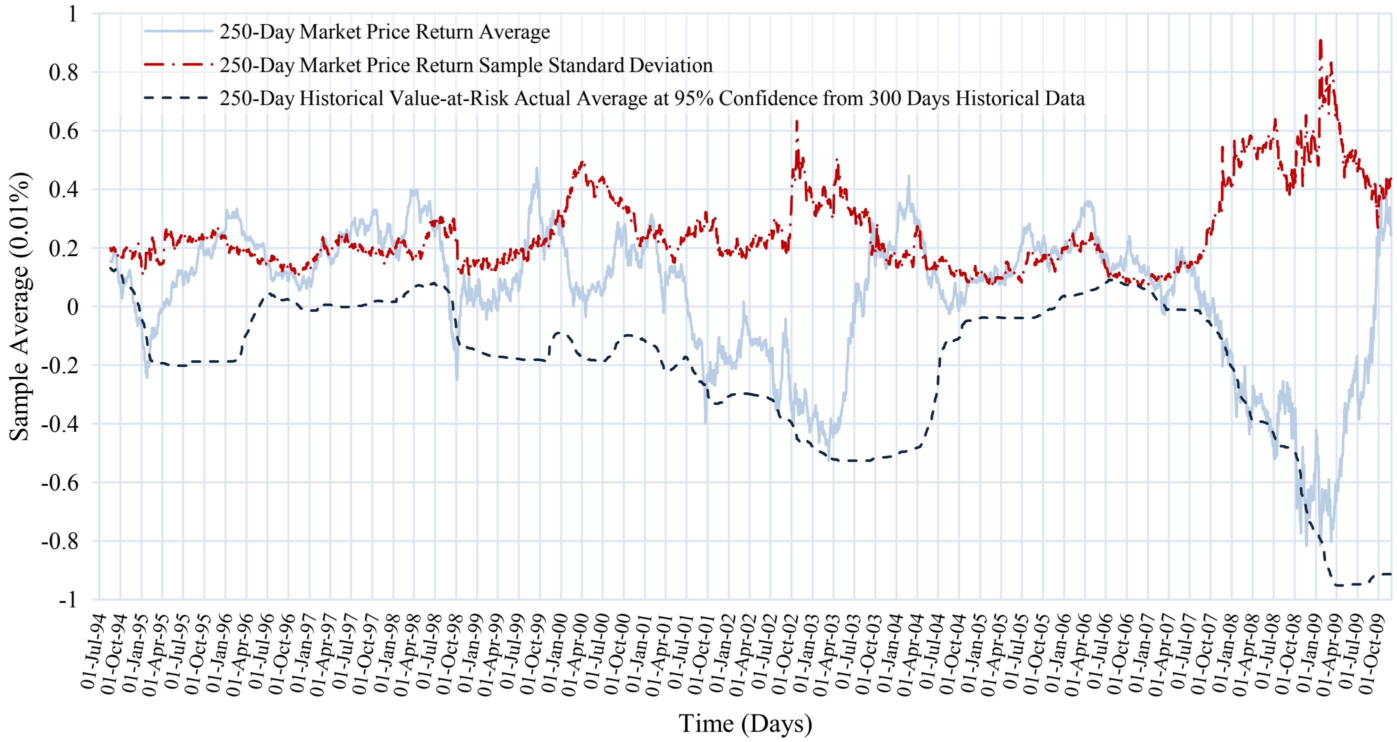

Figure P.3 The Primary and Secondary Sample 250-Day Historical Value-at-Risk Actual at the 95% Confidence Level with 300 Days Historical Data from August 1994 to November 2009

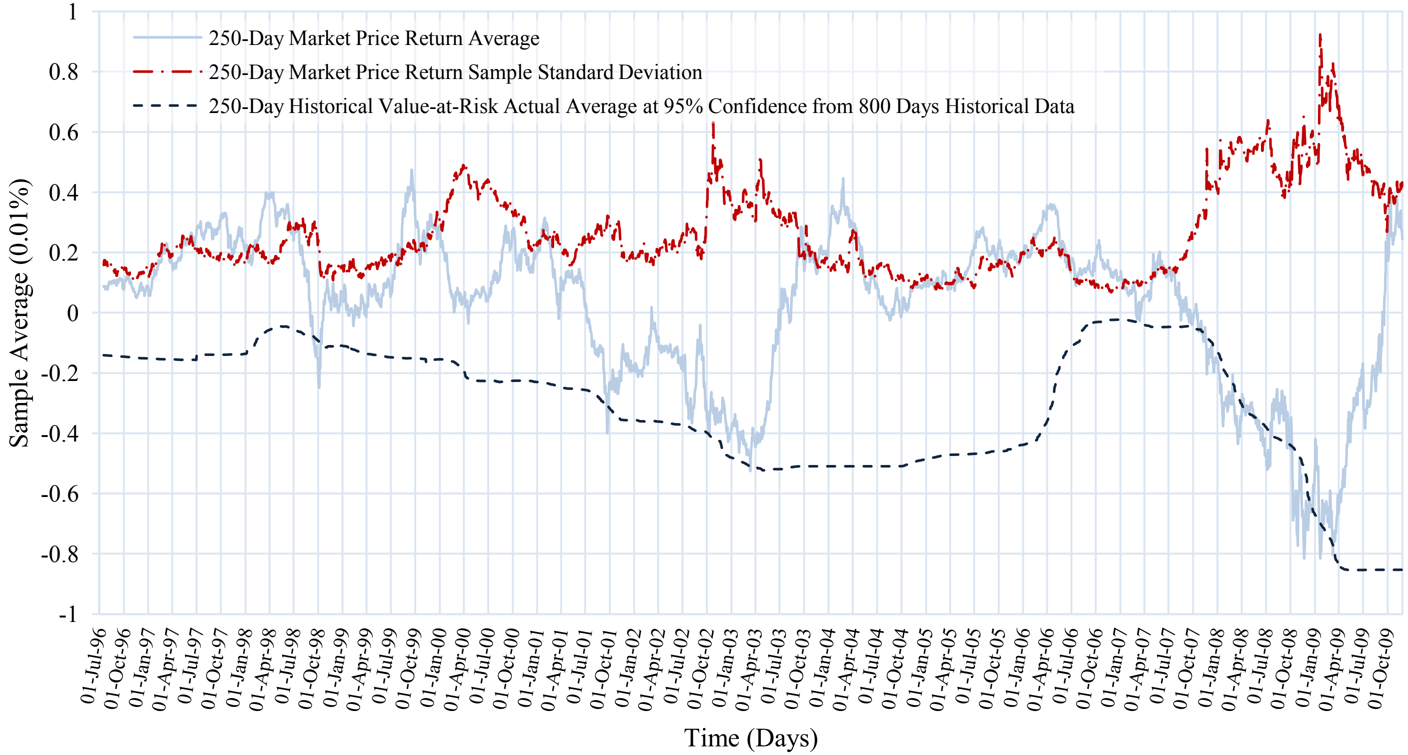

Figure P.4 The Primary and Secondary Sample 250-Day Historical Value-at-Risk Actual at the 95% Confidence Level with 800 Days Historical Data from July 1996 to November 2009

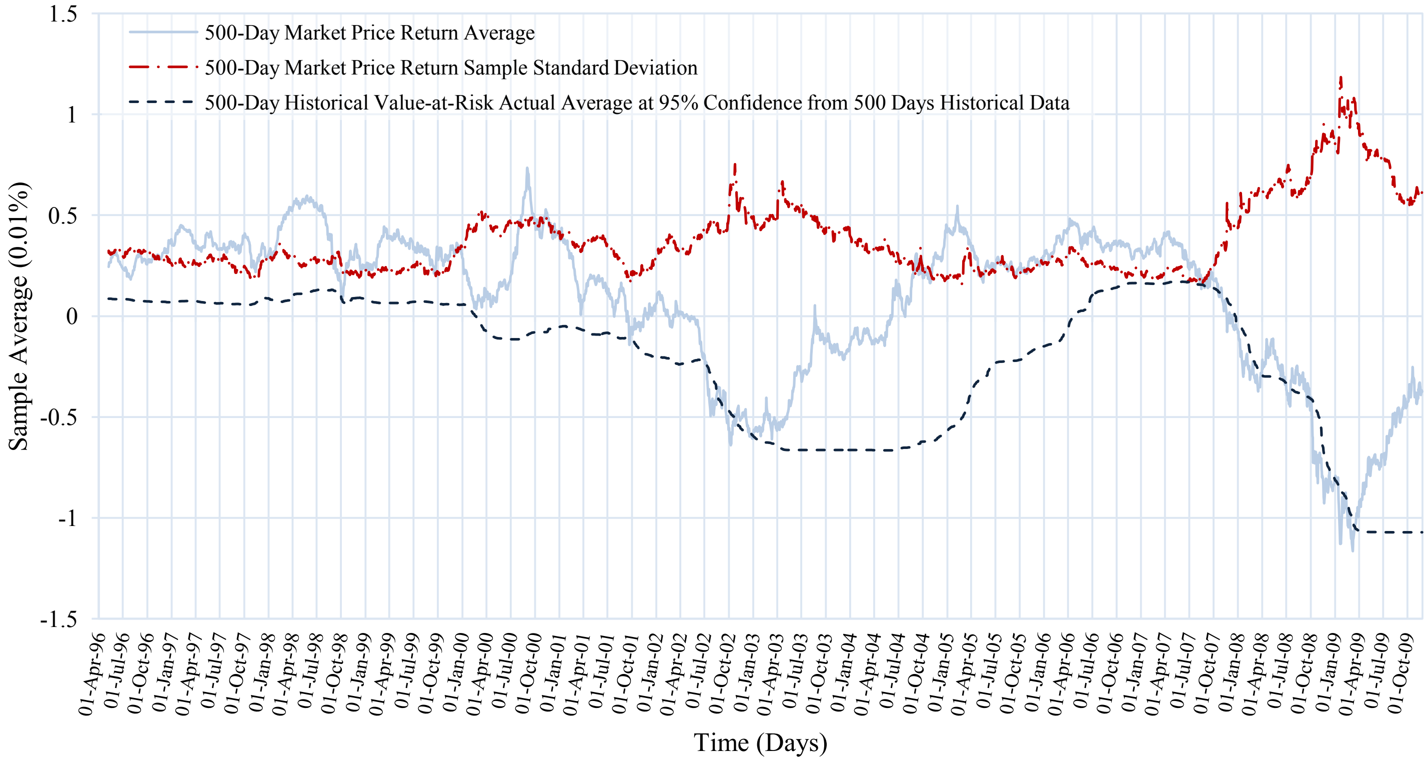

Figure P.5 The Primary and Secondary Sample 500-Day Historical Value-at-Risk Actual at the 95% Confidence Level with 500 Days Historical Data from May 1996 to November 2009

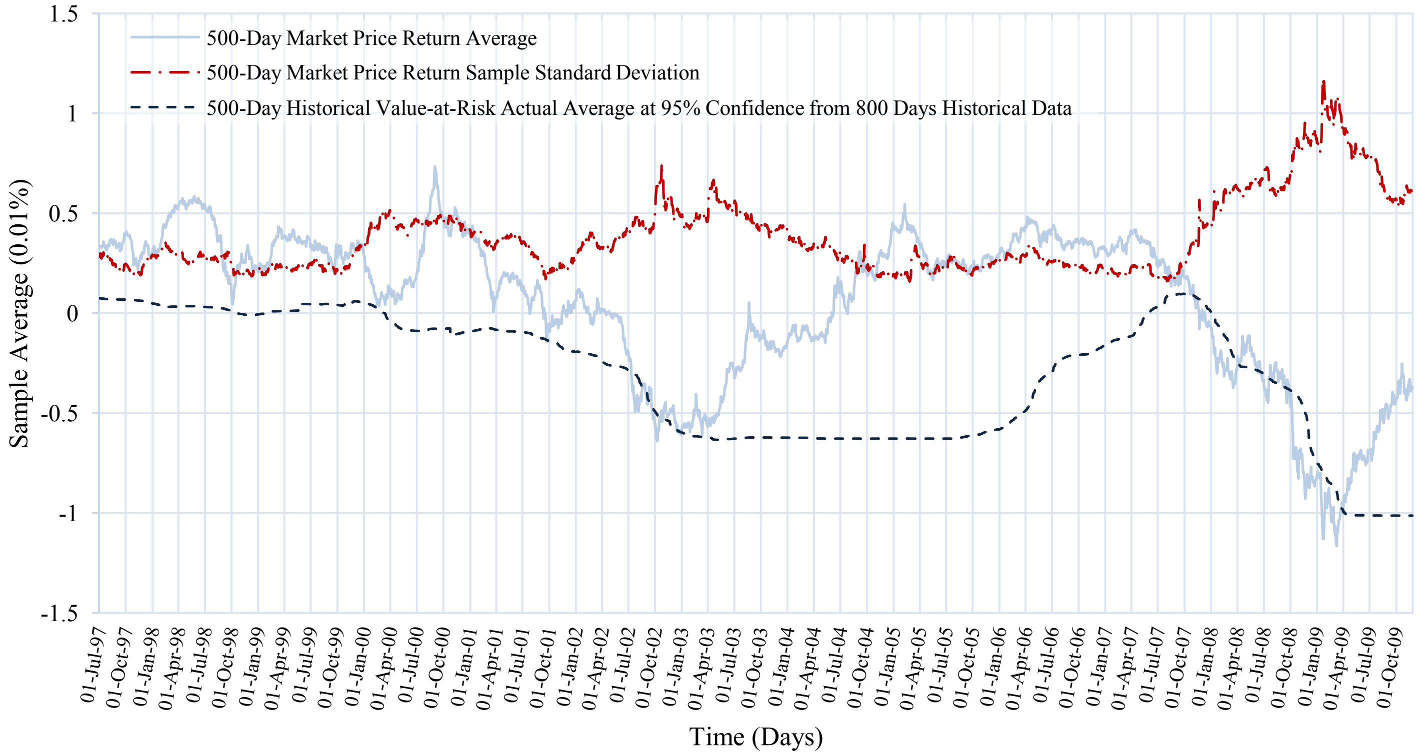

Figure P.6 The Primary and Secondary Sample 500-Day Historical Value-at-Risk Actual at the 95% Confidence Level with 800 Days Historical Data from July 1997 to November 2009

Table P.3 (Continued)

PANEL B

The Control Group Descriptive Statistics for Historical Value-at-Risk Actual for the 1-Day, 250-Day and 500-Day Time Horizons at the 95% Confidence Level

Statistic	Year	Time Horizon (Days) 1		250		500		*Obs.*
		Historical Data (Days)						
		300	800	300	800	500	800	
Mean	1993	-0.014	-	-	-	-	-	12
	1994	-0.016	-	0.007	-	-	-	12
	1995	-0.014	-0.015	-0.196	-	-	-	12
	1996	-0.010	-0.014	-0.085	-0.167	-0.070	-	12
	1997	-0.011	-0.012	-0.057	-0.176	-0.078	-0.069	12
	1998	-0.020	-0.014	-0.132	-0.147	-0.105	-0.164	12
	1999	-0.022	-0.018	-0.237	-0.204	-0.174	-0.171	12
	2000	-0.016	-0.019	-0.010	-0.203	-0.157	-0.168	12
	2001	-0.018	-0.019	-0.174	-0.241	-0.033	-0.192	12
	2002	-0.021	-0.018	-0.322	-0.295	-0.339	-0.324	12
	2003	-0.024	-0.021	-0.440	-0.429	-0.570	-0.554	12
	2004	-0.015	-0.020	-0.232	-0.427	-0.557	-0.560	12
	2005	-0.012	-0.017	0.001	-0.420	-0.241	-0.543	12
	2006	-0.015	-0.014	0.098	-0.138	0.123	-0.273	12
	2007	-0.017	-0.015	0.022	-0.004	0.224	0.064	12
	2008	-0.027	-0.021	-0.241	-0.179	-0.109	-0.072	12
	2009	-0.039	-0.029	-0.549	-0.489	-0.554	-0.531	12
Standard Deviations	1993	0.001	-	-	-	-	-	
	1994	0.001	-	0.052	-	-	-	
	1995	0.002	4.4E-04	0.020	-	-	-	
	1996	0.001	3.8E-04	0.080	0.004	0.001	-	
	1997	0.002	0.001	0.028	0.002	0.036	0.015	
	1998	0.004	0.002	0.078	0.055	0.057	0.028	
	1999	0.003	3.7E-04	0.045	0.019	0.004	0.016	
	2000	0.001	0.001	0.115	0.041	0.053	0.008	
	2001	0.002	0.001	0.102	0.064	0.108	0.055	
	2002	0.003	0.002	0.040	0.037	0.125	0.132	
	2003	0.003	0.001	0.037	0.031	0.013	0.011	
	2004	0.002	0.001	0.205	0.007	0.008	0.001	
	2005	0.001	0.001	0.036	0.013	0.150	0.008	
	2006	0.003	0.001	0.038	0.165	0.132	0.165	
	2007	0.002	0.001	0.035	0.044	0.056	0.138	
	2008	0.005	0.003	0.150	0.133	0.158	0.131	
	2009	0.001	0.001	0.002	0.058	0.023	0.027	

Panel notes: The variable means are yearly averages from the Control group firms. The Control group consists of a maximum of 12 observations per year from 12 banking related firms in the LSE that did not adopt the IFRS standards in 2005. The highlighted record identifies the samples IFRS accounting standards adoption year.

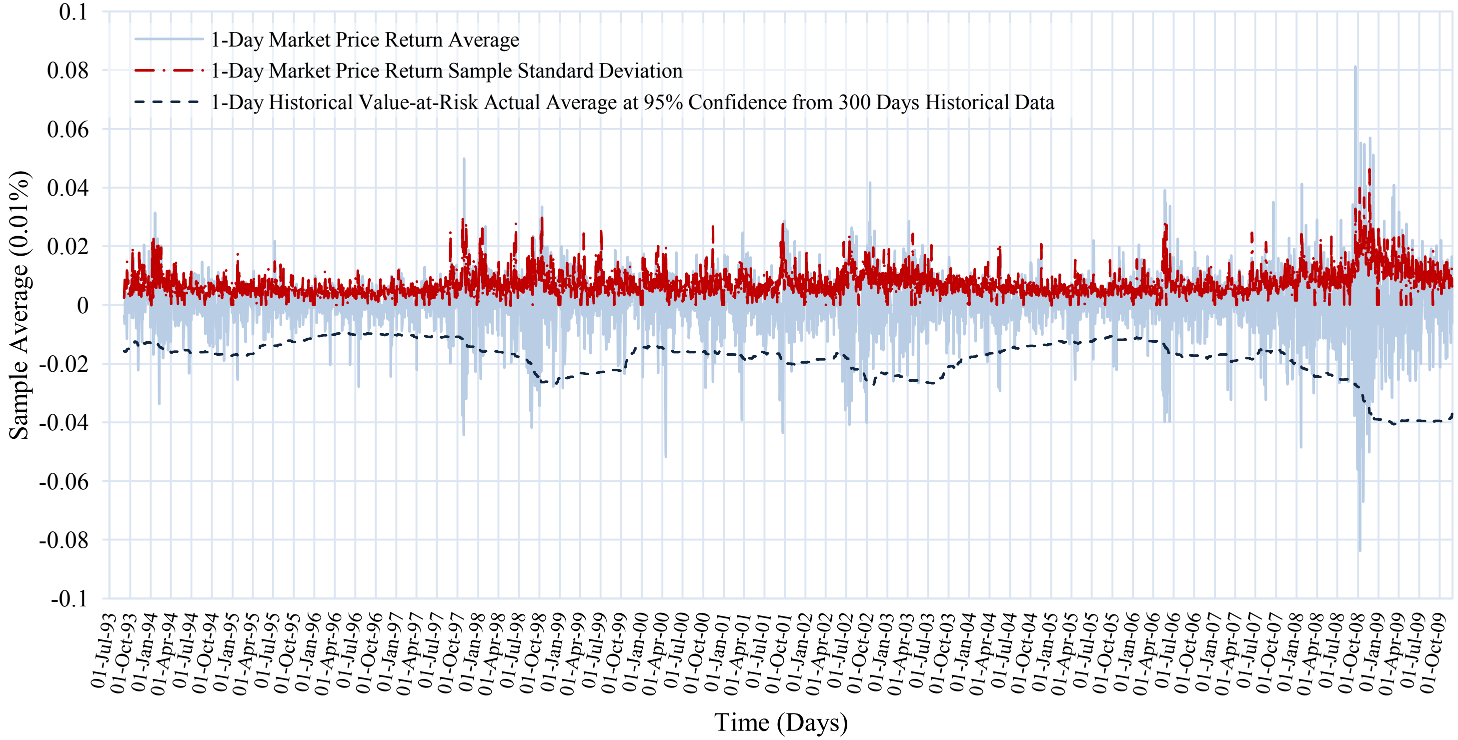

Figure P.7 The Control Group 1-Day Historical Value-at-Risk Actual at the 95% Confidence Level with 300 Days Historical Data from September 1993 to November 2009

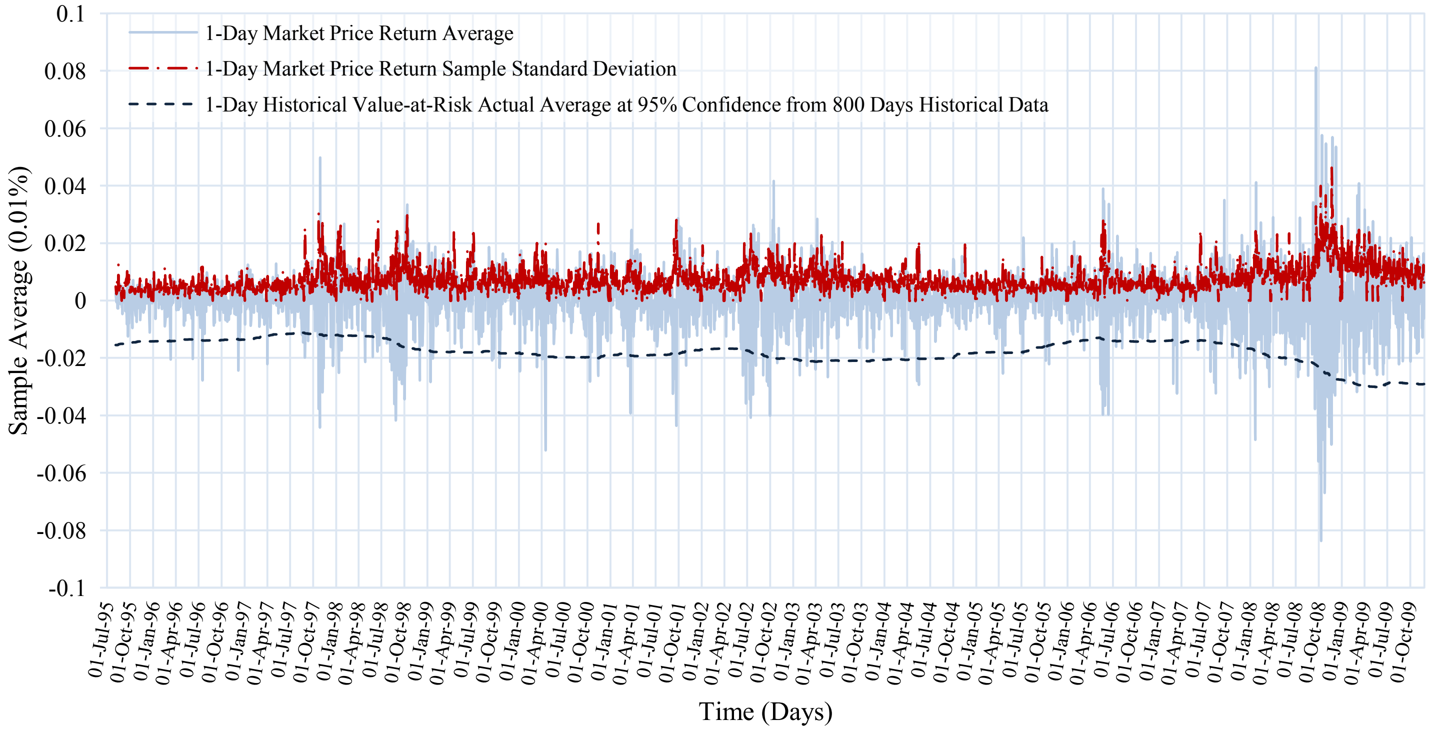

Figure P.8 The Control Group 1-Day Historical Value-at-Risk Actual at the 95% Confidence Level with 800 Days Historical Data from August 1995 to November 2009

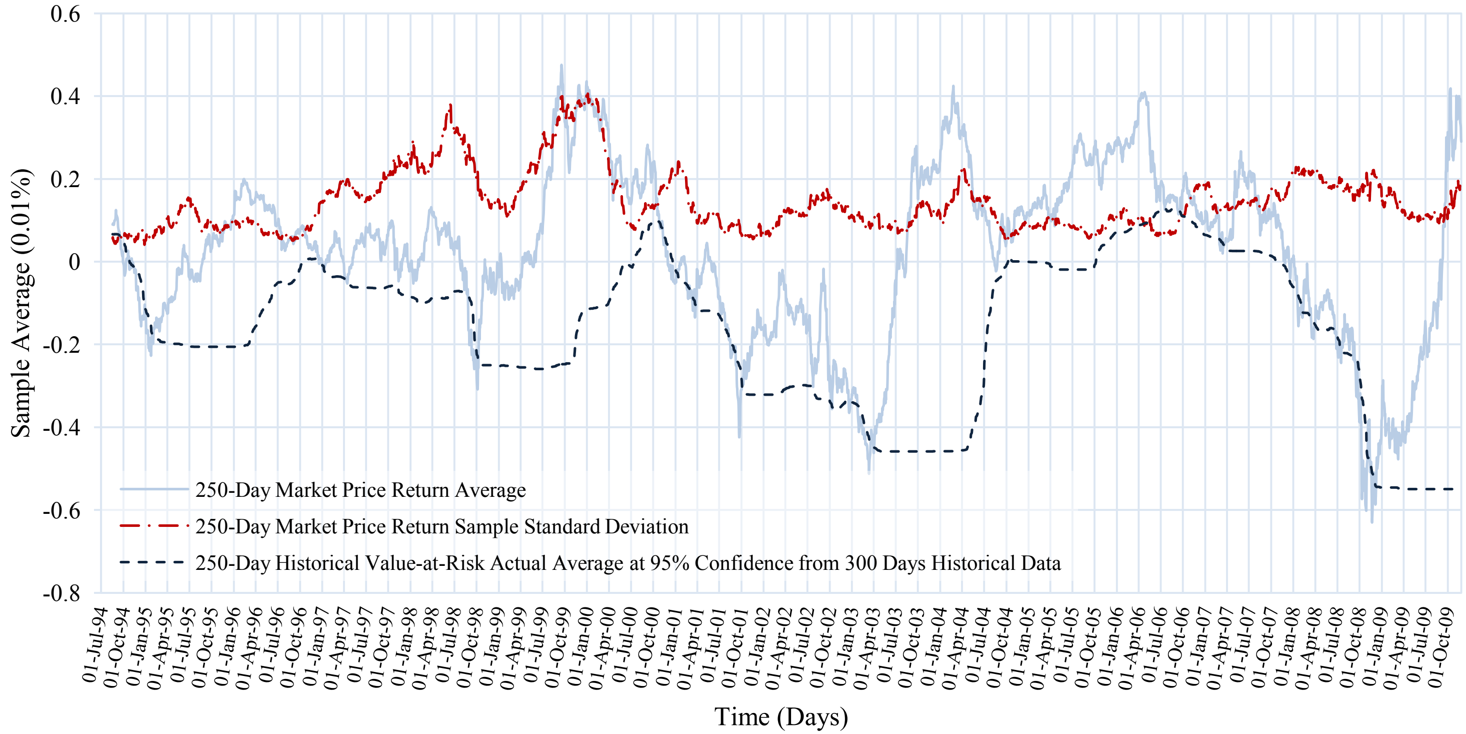

Figure P.9 The Control Group 250-Day Historical Value-at-Risk Actual at the 95% Confidence Level with 300 Days Historical Data from August 1994 to November 2009

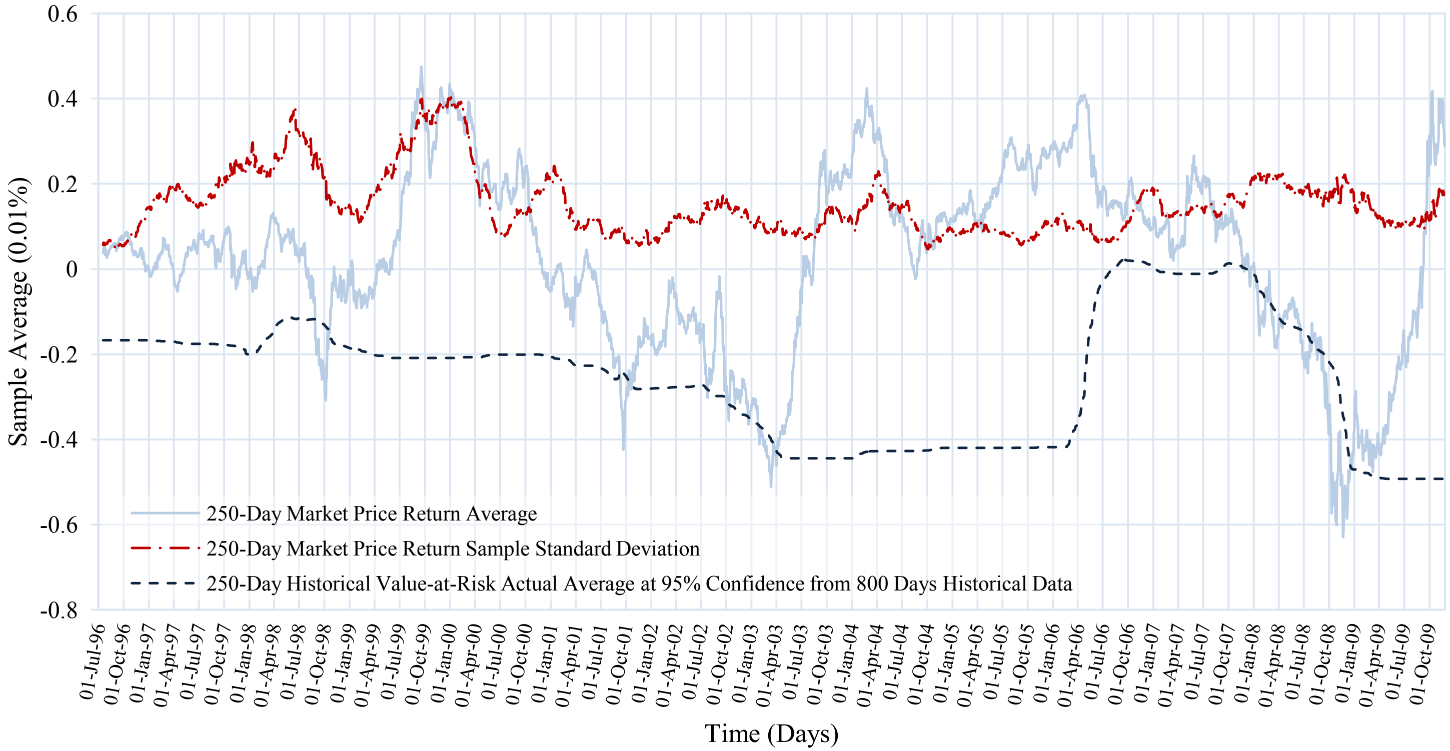

Figure P.10 The Control Group 250-Day Historical Value-at-Risk Actual at the 95% Confidence Level with 800 Days Historical Data from July 1996 to November 2009

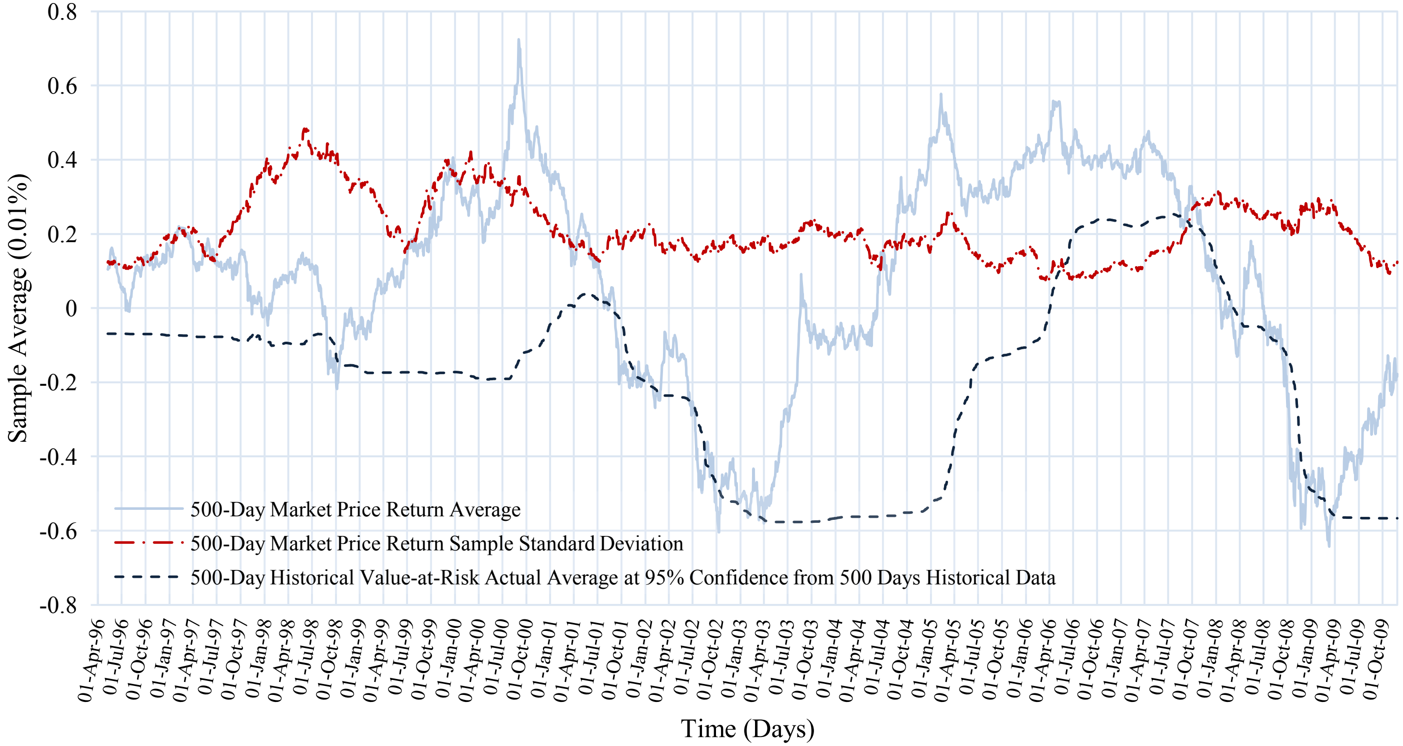

Figure P.11 The Control Group 500-Day Historical Value-at-Risk Actual at the 95% Confidence Level with 500 Days Historical Data from May 1996 to November 2009

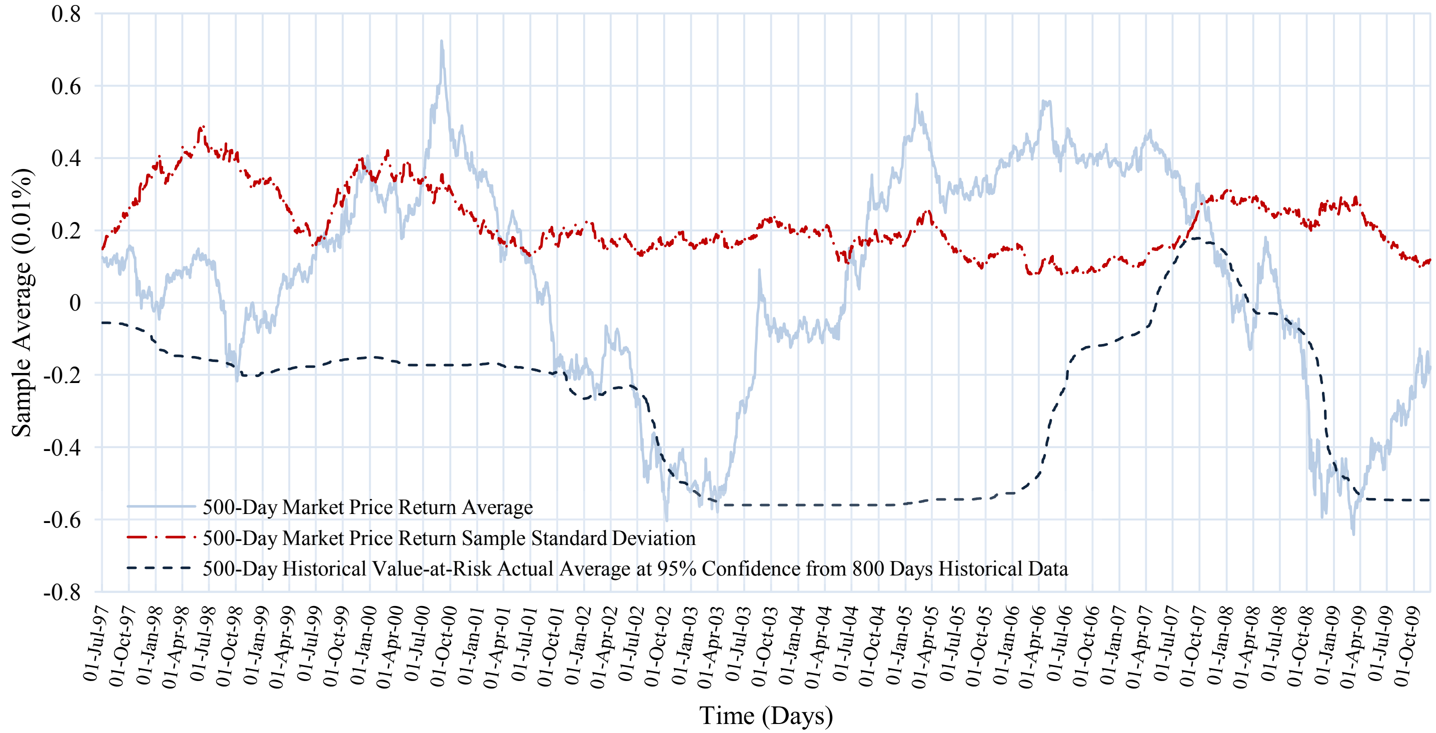

Figure P.12 The Control Group 500-Day Historical Value-at-Risk Actual at the 95% Confidence Level with 800 Days Historical Data from July 1997 to November 2009

Table P.3 (Continued)

PANEL C

The Primary sample Descriptive Statistics for Historical Value-at-Risk Actual for the 1-Day, 250-Day and 500-Day Time Horizons at the 95% Confidence Level

Statistic	Year	Time Horizon (Days) 1		250		500		*Obs.*
		Historical Data (Days)						
		300	800	300	800	500	800	
Mean	1993	-0.024	-	-	-	-	-	4
	1994	-0.025	-	0.047	-	-	-	4
	1995	-0.025	-0.025	-0.217	-	-	-	5
	1996	-0.021	-0.024	0.030	-0.131	0.198	-	5
	1997	-0.023	-0.023	0.077	-0.133	0.222	0.205	5
	1998	-0.037	-0.034	-0.057	-0.122	0.142	0.104	5
	1999	-0.044	-0.036	-0.319	-0.277	-0.027	0.023	5
	2000	-0.042	-0.042	-0.276	-0.358	-0.197	-0.171	5
	2001	-0.038	-0.042	-0.236	-0.364	-0.194	-0.178	5
	2002	-0.037	-0.040	-0.203	-0.319	-0.172	-0.219	5
	2003	-0.037	-0.037	-0.385	-0.387	-0.408	-0.375	5
	2004	-0.021	-0.032	-0.214	-0.388	-0.418	-0.397	5
	2005	-0.015	-0.026	-0.029	-0.348	-0.221	-0.396	5
	2006	-0.016	-0.017	0.005	-0.140	-0.014	-0.228	5
	2007	-0.019	-0.017	-0.038	-0.039	0.069	-0.036	5
	2008	-0.042	-0.029	-0.512	-0.400	-0.426	-0.352	5
	2009	-0.096	-0.054	-1.507	-1.308	-1.678	-1.551	5
Standard Deviations	1993	0.001	-	-	-	-	-	
	1994	0.002	-	0.073	-	-	-	
	1995	0.002	0.001	0.021	-	-	-	
	1996	0.001	3.2E-04	0.145	0.004	0.003	-	
	1997	0.004	0.001	0.031	0.002	0.049	0.014	
	1998	0.005	0.005	0.213	0.055	0.113	0.045	
	1999	0.003	0.001	0.082	0.019	0.023	0.010	
	2000	0.002	0.001	0.081	0.041	0.096	0.052	
	2001	0.004	0.001	0.115	0.064	0.021	0.009	
	2002	0.004	0.002	0.069	0.037	0.078	0.048	
	2003	0.004	0.001	0.039	0.031	0.029	0.021	
	2004	0.003	0.002	0.144	0.007	0.015	0.006	
	2005	0.001	0.002	0.017	0.013	0.068	0.007	
	2006	0.001	0.001	0.009	0.165	0.086	0.081	
	2007	0.004	0.002	0.070	0.044	0.036	0.082	
	2008	0.012	0.006	0.241	0.133	0.292	0.245	
	2009	0.008	0.005	0.151	0.058	0.172	0.171	

Panel notes: The variable means are sample averages. The sample consists of a maximum of 5 observations per year from the 5 banks in the LSE that adopted the IFRS standards in 2005. The highlighted record identifies the samples IFRS accounting standards adoption year.

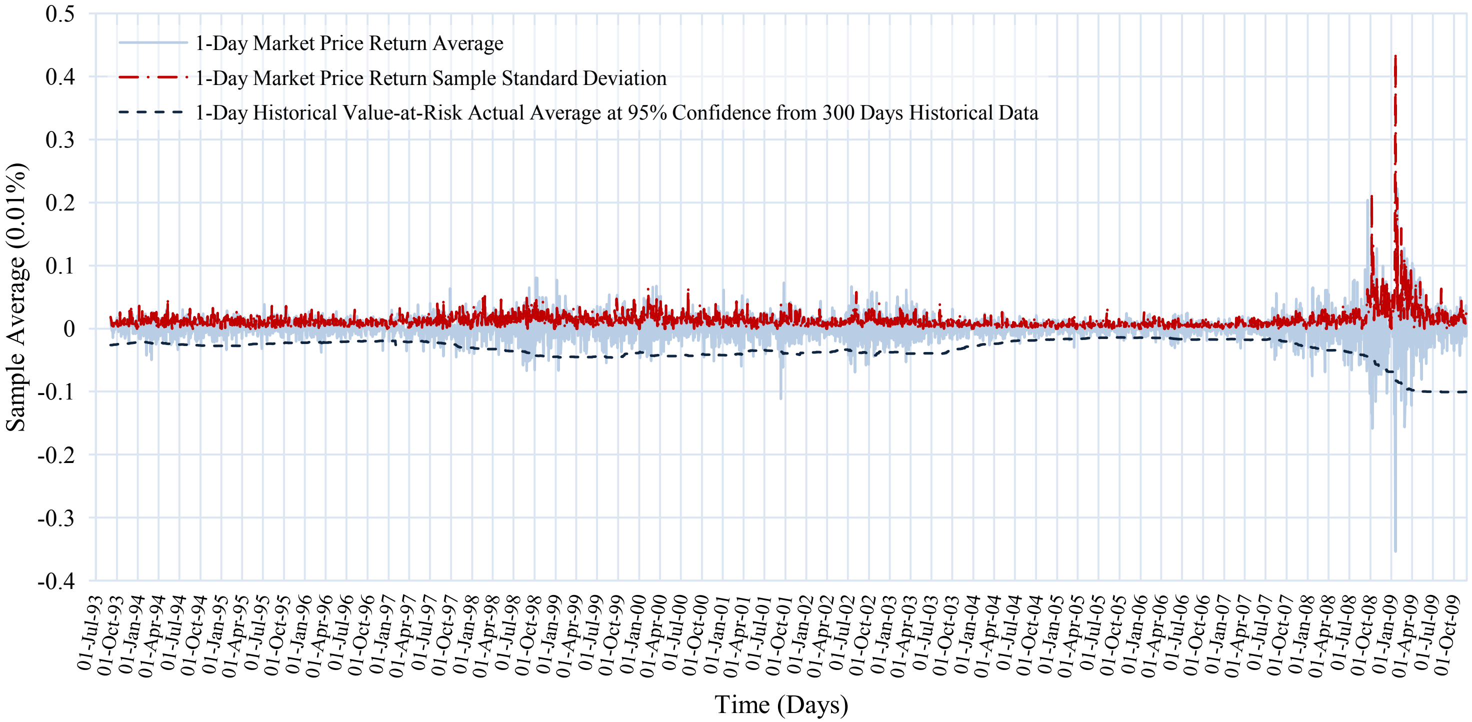

Figure P.13 The Primary Sample 1-Day Historical Value-at-Risk Actual at the 95% Confidence Level with 300 Days Historical Data from September 1993 to November 2009

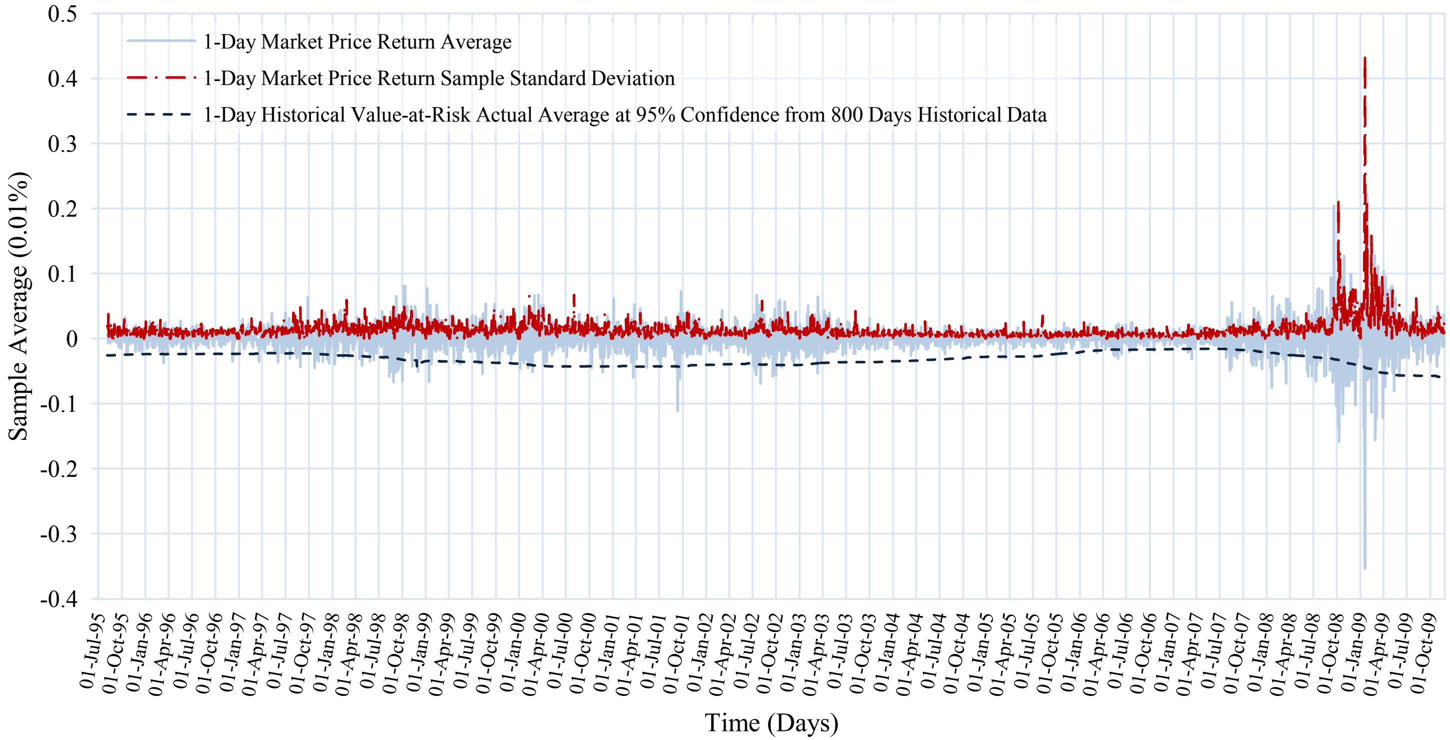

Figure P.14 The Primary Sample 1-Day Historical Value-at-Risk Actual at the 95% Confidence Level with 800 Days Historical Data from August 1995 to November 2009

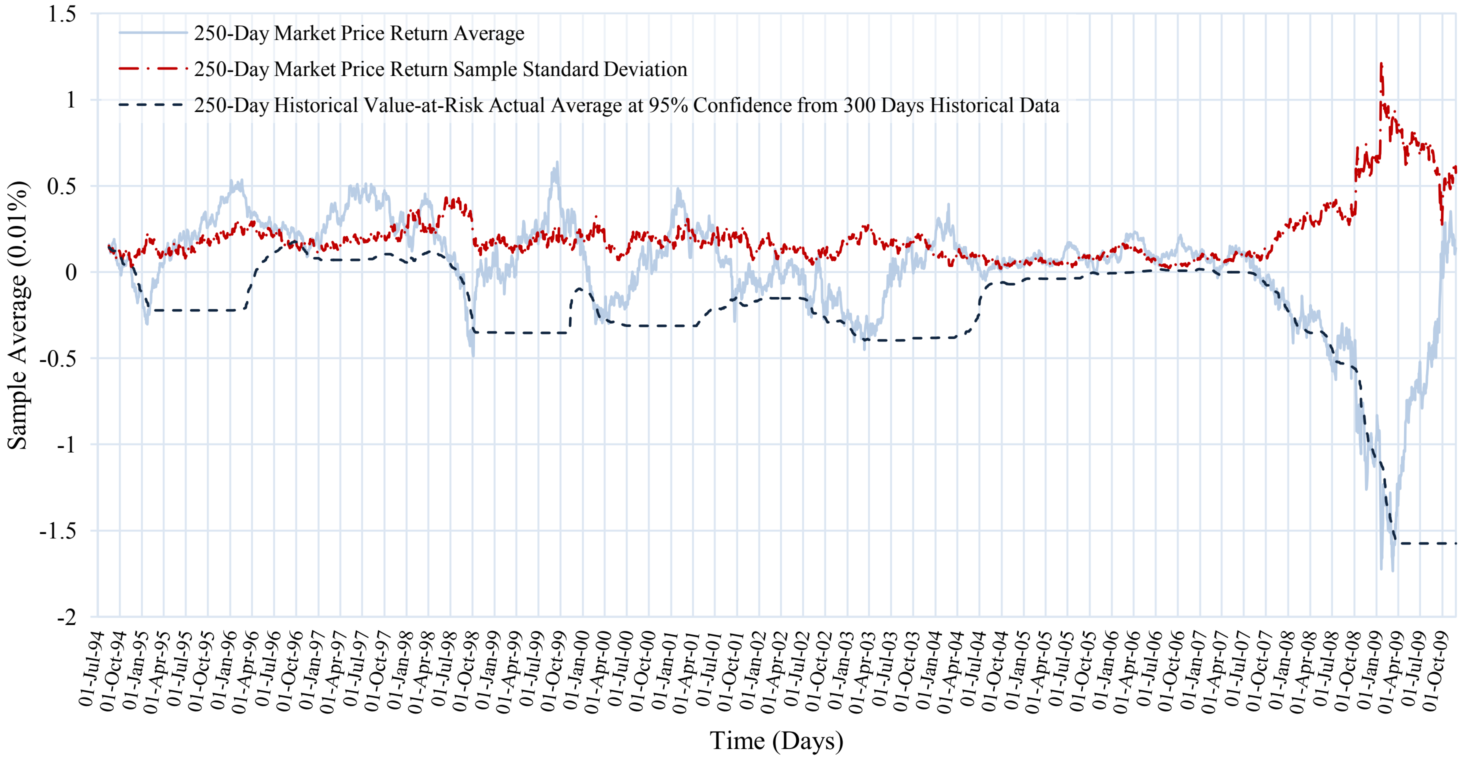

Figure P.15 The Primary Sample 250-Day Historical Value-at-Risk Actual at the 95% Confidence Level with 300 Days Historical Data from August 1994 to November 2009

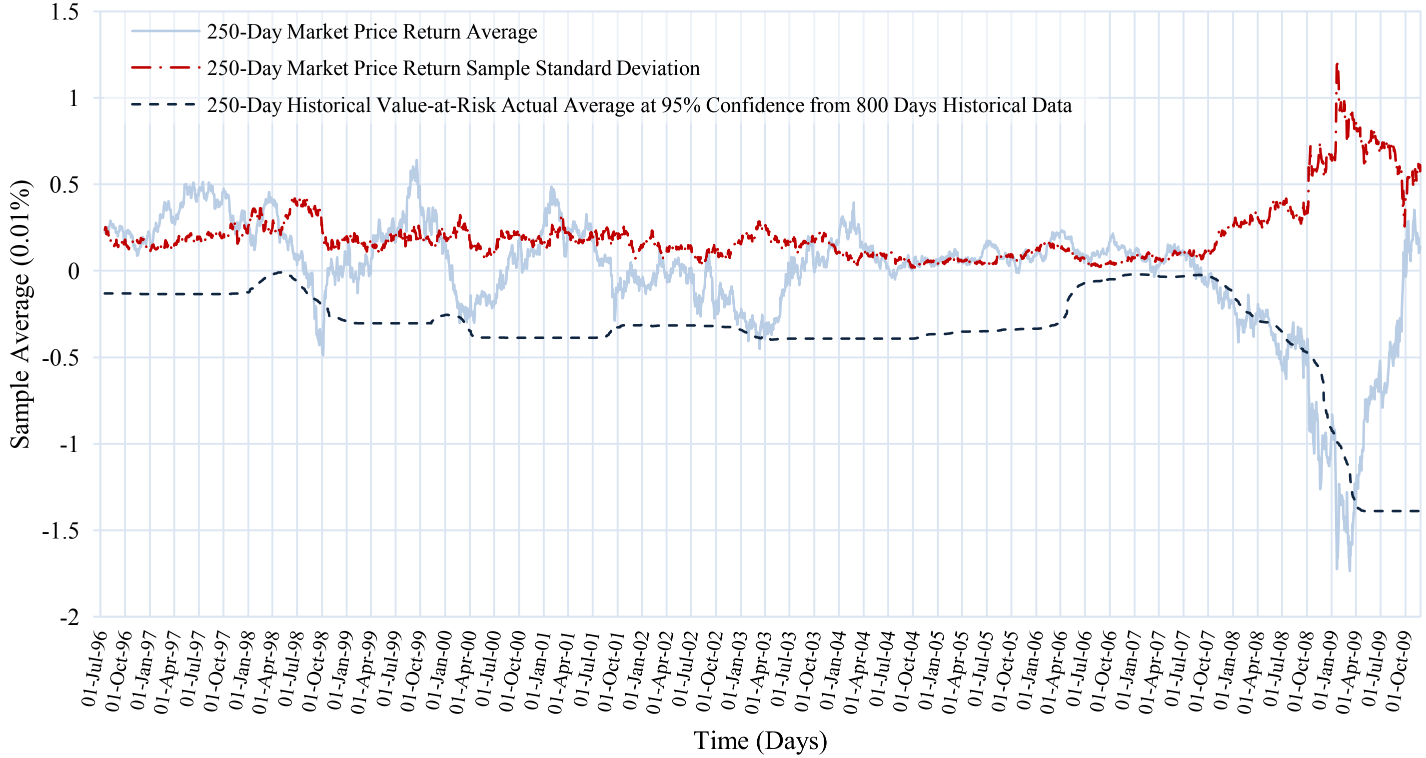

Figure P.16 The Primary Sample 250-Day Historical Value-at-Risk Actual at the 95% Confidence Level with 800 Days Historical Data from July 1996 to November 2009

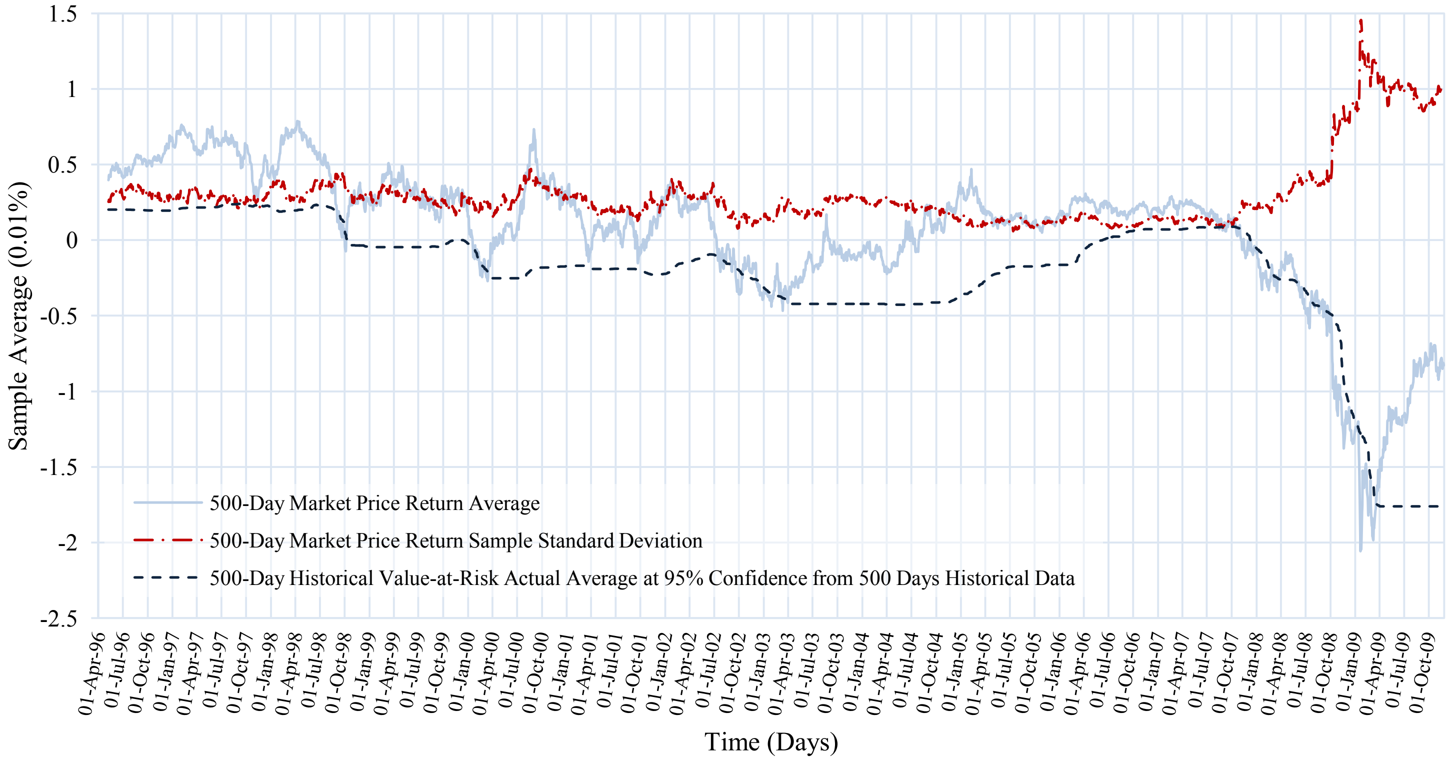

Figure P.17 The Primary Sample 500-Day Historical Value-at-Risk Actual at the 95% Confidence Level with 500 Days Historical Data from May 1996 to November 2009

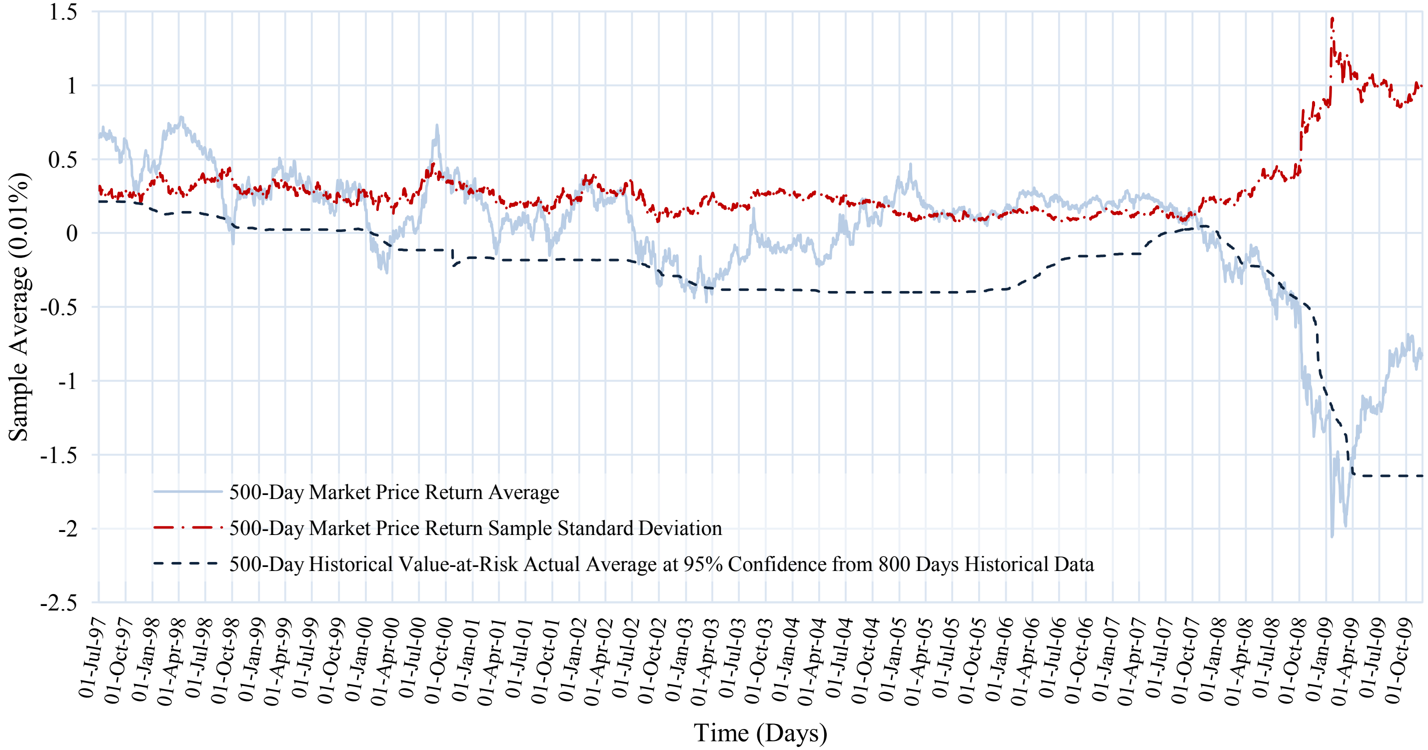

Figure P.18 The Primary Sample 500-Day Historical Value-at-Risk Actual at the 95% Confidence Level with 800 Days Historical Data from July 1997 to November 2009

Table P.3 (Continued)

PANEL D

The Secondary sample Descriptive Statistics for Historical Value-at-Risk Actual for the 1-Day, 250-Day and 500-Day Time Horizons at the 95% Confidence Level

Statistic	Year	Time Horizon (Days): 1		250		500		Obs.
		Historical Data (Days): 300	800	300	800	500	800	
Mean	1993	-0.014	-	-	-	-	-	11
	1994	-0.016	-	0.084	-	-	-	11
	1995	-0.014	-0.014	-0.162	-	-	-	11
	1996	-0.011	-0.014	-0.062	-0.153	0.029	-	11
	1997	-0.011	-0.012	-0.021	-0.140	0.007	0.011	11
	1998	-0.018	-0.014	0.033	-0.065	0.095	-0.009	11
	1999	-0.025	-0.019	-0.094	-0.085	0.105	0.043	11
	2000	-0.023	-0.022	-0.078	-0.143	-0.010	-0.039	11
	2001	-0.027	-0.025	-0.224	-0.240	-0.065	-0.084	11
	2002	-0.031	-0.028	-0.423	-0.420	-0.411	-0.407	11
	2003	-0.033	-0.031	-0.575	-0.566	-0.763	-0.735	11
	2004	-0.020	-0.029	-0.295	-0.560	-0.747	-0.731	11
	2005	-0.017	-0.024	-0.027	-0.519	-0.335	-0.720	11
	2006	-0.020	-0.020	0.090	-0.193	0.074	-0.377	11
	2007	-0.024	-0.021	-0.032	-0.056	0.173	0.011	11
	2008	-0.037	-0.029	-0.434	-0.369	-0.337	-0.302	11
	2009	-0.049	-0.039	-0.648	-0.602	-0.740	-0.706	11
Standard Deviations	1993	0.002	-	-	-	-	-	
	1994	0.002	-	0.042	-	-	-	
	1995	0.003	0.001	0.036	-	-	-	
	1996	0.002	5.5E-04	0.084	0.004	0.007	-	
	1997	0.001	0.001	0.025	0.002	0.026	0.003	
	1998	0.005	0.002	0.077	0.055	0.049	0.012	
	1999	0.003	0.001	0.023	0.019	0.035	0.044	
	2000	0.002	0.001	0.099	0.041	0.068	0.060	
	2001	0.003	0.002	0.166	0.064	0.084	0.064	
	2002	0.004	0.002	0.073	0.037	0.223	0.182	
	2003	0.004	0.001	0.029	0.031	0.016	0.024	
	2004	0.002	0.002	0.219	0.007	0.036	4.1E-08	
	2005	0.001	0.002	0.027	0.013	0.163	0.019	
	2006	0.003	0.001	0.042	0.165	0.131	0.174	
	2007	0.002	0.001	0.080	0.044	0.084	0.164	
	2008	0.005	0.003	0.119	0.133	0.152	0.146	
	2009	0.002	0.001	0.032	0.058	0.033	0.037	

Panel notes: The variable means are sample averages. The sample consists of a maximum of 11 observations per year from 11 banking related firms in the LSE that adopted the IFRS standards in 2005. The highlighted record identifies the samples IFRS accounting standards adoption year.

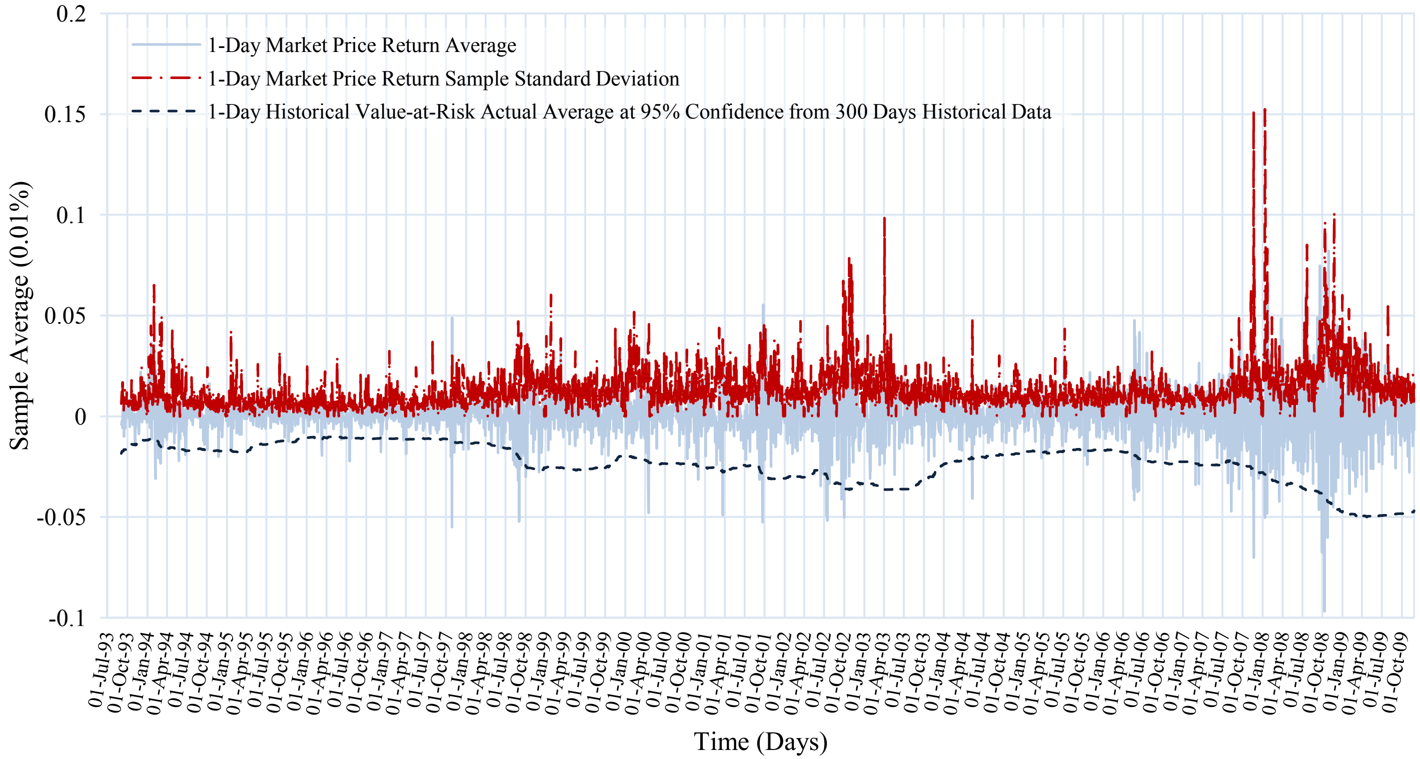

Figure P.19 The Secondary Sample 1-Day Historical Value-at-Risk Actual at the 95% Confidence Level with 300 Days Historical Data from September 1993 to November 2009

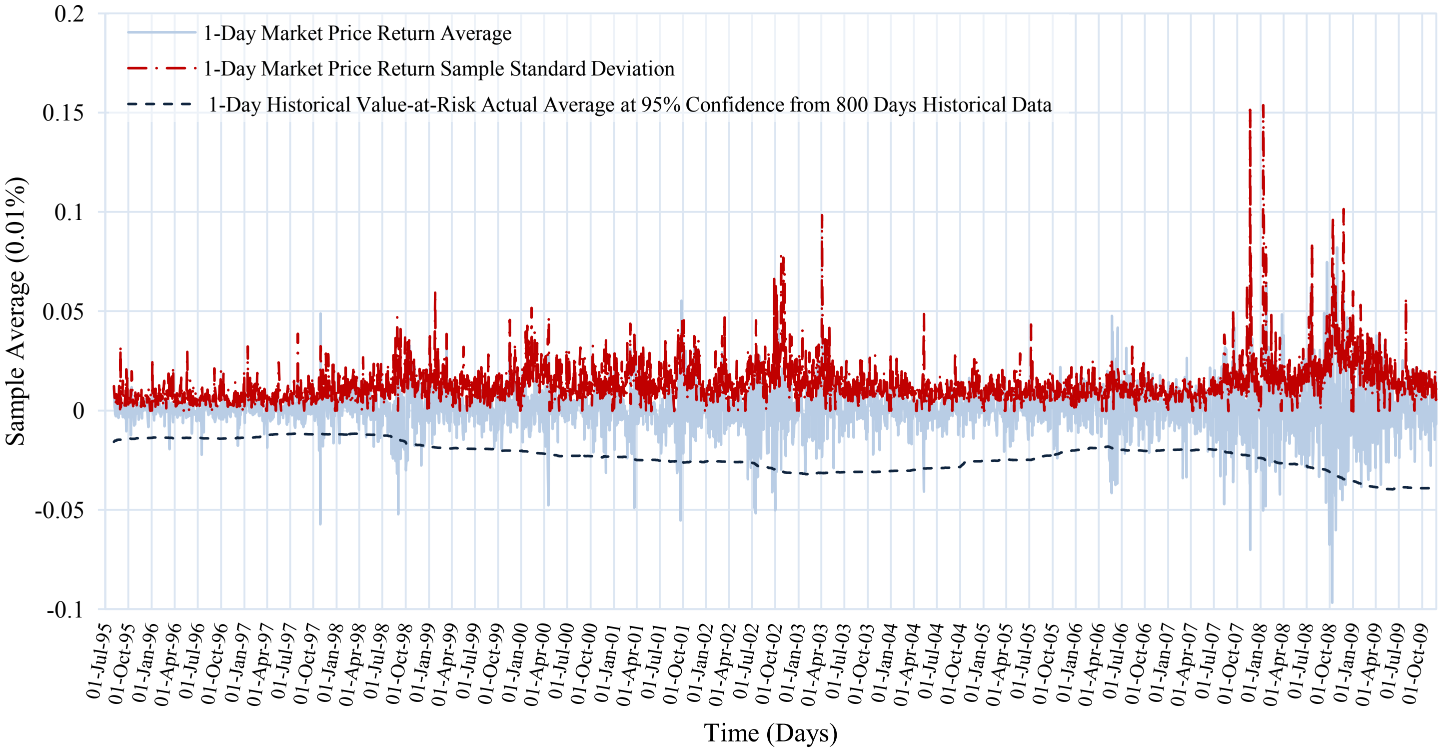

Figure P.20 The Secondary Sample 1-Day Historical Value-at-Risk Actual at the 95% Confidence Level with 800 Days Historical Data from August 1995 to November 2009

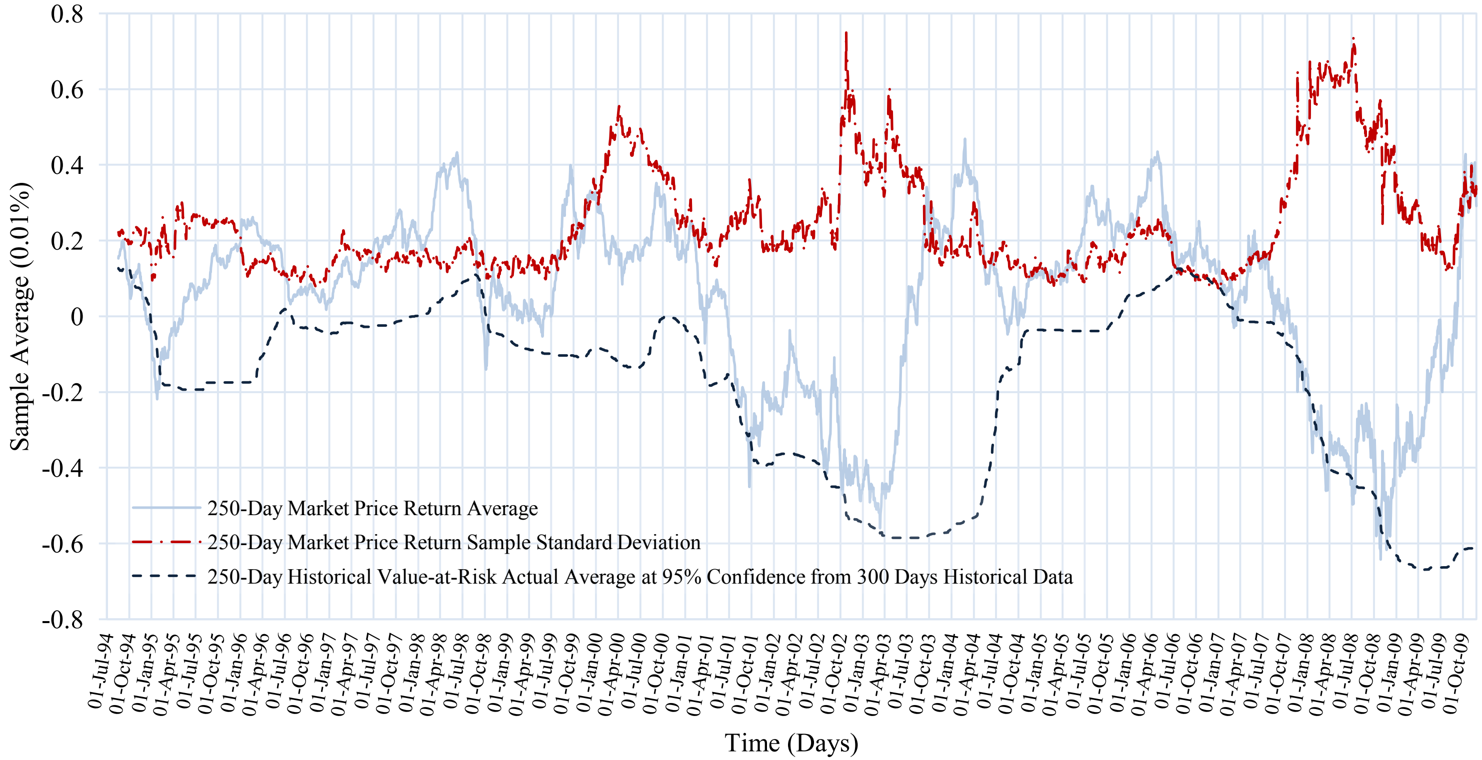

Figure P.21 The Secondary Sample 250-Day Historical Value-at-Risk Actual at the 95% Confidence Level with 300 Days Historical Data from August 1994 to November 2009

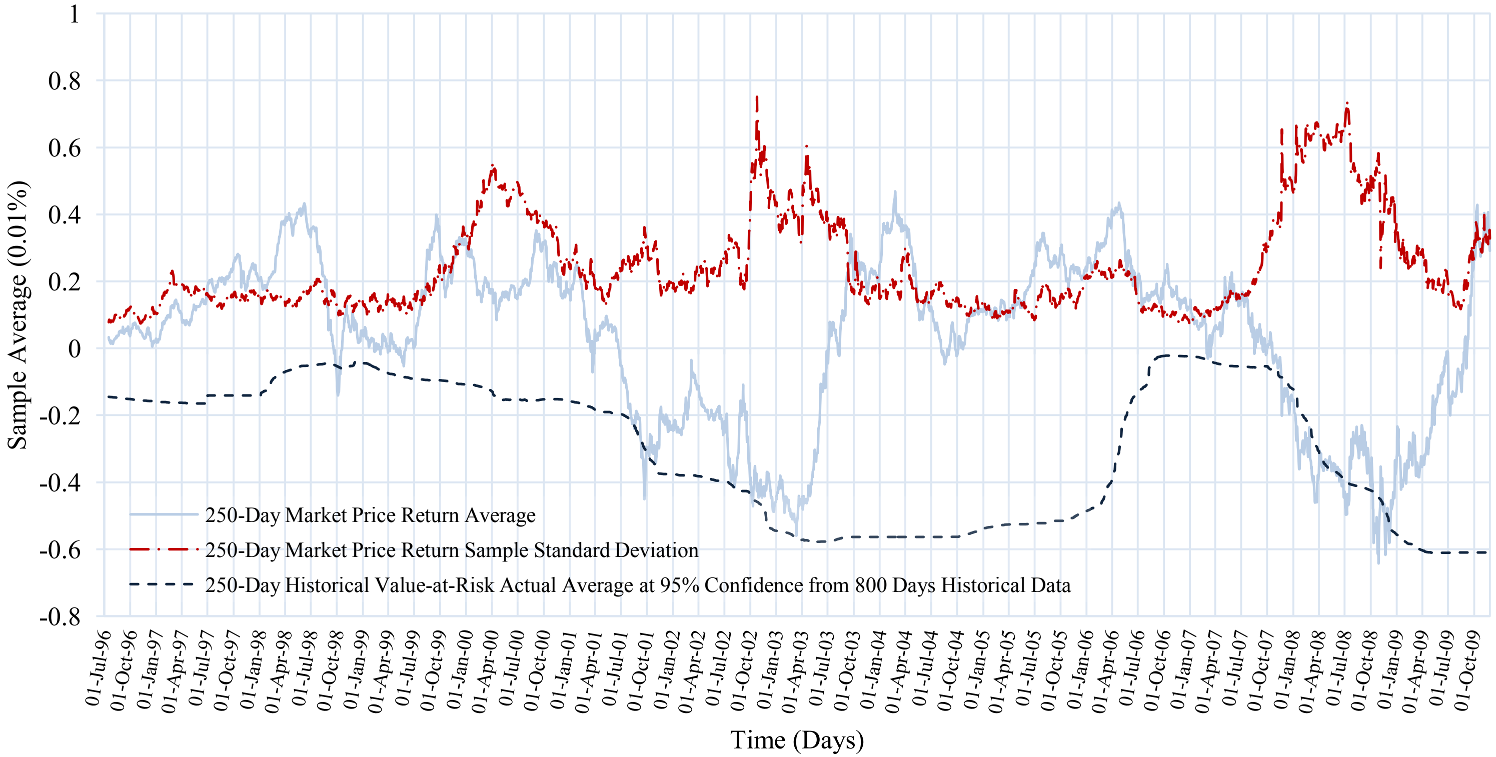

Figure P.22 The Secondary Sample 250-Day Historical Value-at-Risk Actual at the 95% Confidence Level with 800 Days Historical Data from July 1996 to November 2009

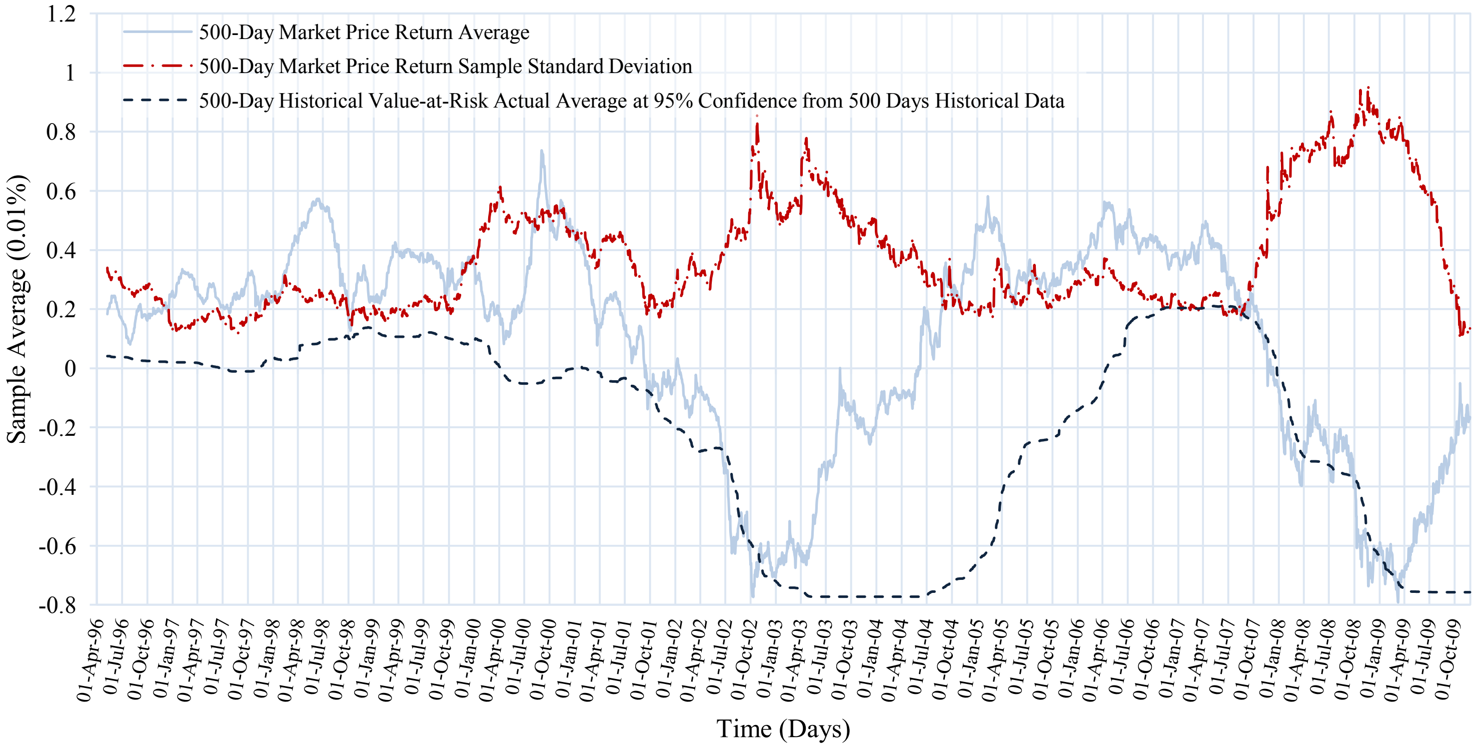

Figure P.23 The Secondary Sample 500-Day Historical Value-at-Risk Actual at the 95% Confidence Level with 500 Days Historical Data from May 1996 to November 2009

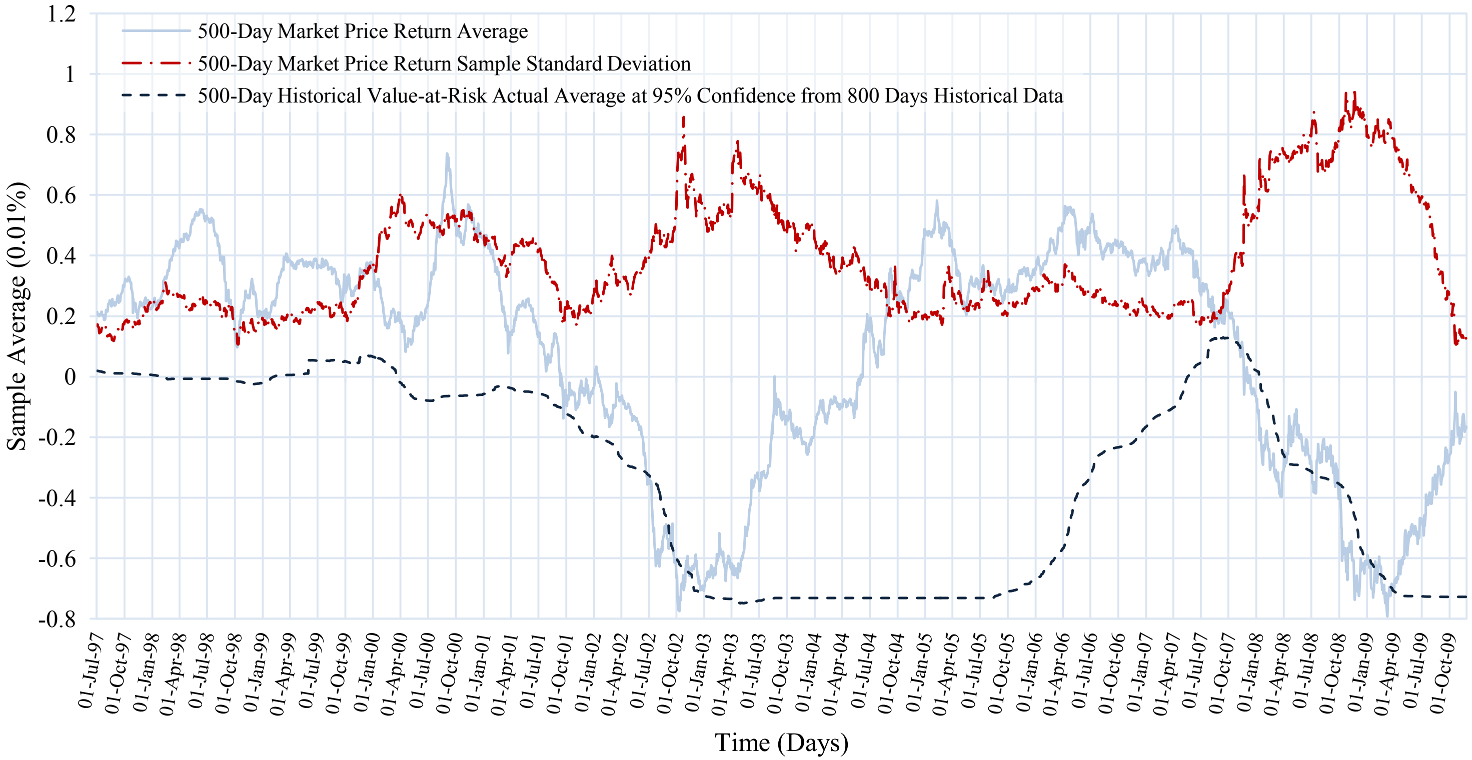

Figure P.24 The Secondary Sample 500-Day Historical Value-at-Risk Actual at the 95% Confidence Level with 800 Days Historical Data from July 1997 to November 2009

Analysis

Table P.3 and the corresponding Figures P.1 to P.24 present descriptive statistics and plots for the Historical Value-at-Risk Actual measure at the 95% confidence level. The specification for this historical Value-at-Risk model is presented in Appendix N.8. The time horizons 1-day, 250-day and 500-day tested for the samples and the control group with the 300 and 500 days historical returns, generally exhibit a lower level of Historical Value-at-Risk Actual for a shorter time period when compared to the 800 days historical returns. This signifies the expected result that for the 95% confidence level, the Historical Value-at-Risk Actual level at the 5% distribution tail changes to a new level more frequently the less the number of historical returns applied to construct its distribution. Conversely, the Value-at-Risk level changes to a new level less frequently the more the number of historical returns applied to construct its distribution.

Examination of Figures P.1 to P.24, it is evident that Value-at-Risk levels were breached for the Primary and Secondary sample and the Control group after 2005.

P.4 Historical Value-at-Risk Actual Confidence Level Analysis with the 95% Confidence Level

The Historical Value-at-Risk Actual regression analysis for the 250-day time horizon calculated using 300 historical 250-day returns at the 99% and 99.9%, and the 95% confidence levels are presented in Table P.4 and Table P.5. This analysis is presented for the time range 1994 to 2008. In the regressions, the Historical Value-at-Risk Actual at the 95% confidence level is tested as the dependent variable, and the Historical Value-at-Risk Actual at the 99% and 99.9% confidence levels are individually tested as the independent variable.

Table P.4 Cross-Sectional Regression Analysis for Historical Value-at-Risk Confidence Levels

Cross-Sectional Regression

Table P.4 Panel A to Panel D show the results for the cross-sectional regressions that test the Historical Value-at-Risk Actual at the 99% and the 95% confidence levels by applying the regression specified in equation (O.3). In this table, Panel A presents results for the Primary and Secondary sample; Panel B presents results for the Control group; Panel C presents results for the Primary sample; and, Panel D presents results for the Secondary sample.

Table P.4 Panels E to H show the results for the cross-sectional regressions that test the Historical Value-at-Risk Actual at the 99.9% and the 95% confidence levels by applying the regression specified in equation (O.4). In this table, Panel E presents results for the Primary and Secondary sample; Panel F presents results for the Control group; Panel G presents results for the Primary sample; and, Panel H presents results for the Secondary sample.

Cross-Sectional Regression Table Description

The Table P.4 columns represent the following:

Year is the *panel data* year represented by the number of days from 1st January to 31st December, and also represents the 31st December variable record date for each year.

The Regression column presents the coefficients and related statistics for the regressions specified in equations (O.3) and (O.4), and follows the respective models:

$$V_{95:i,t} = a + bV_{99:\,i,i} + e_{95:\,i,t}$$
$$V_{95:i,t} = a + bV_{99.9:\,i,i} + e_{95:\,i,t}$$

Where: $V_{95:i,t}$ is the Value-at-Risk at the 95% confidence level for the i^{th} firm at time t; $V_{99:i,t}$ and $V_{99.9:i,t}$ is the Value-at-Risk for the 99% and 99.9% confidence levels respectively for the i^{th} firm at time t, and $e_{95:i,t}$ is the regression error term. The *Lower* and *Upper* are the corresponding coefficient levels predicted at a 99% confidence level.

The Correlation column presents the correlation statistics for the relationship between the dependent and independent variables. The Descriptive Statistics column presents for the independent variable, the sample mean calculated using equation (O.1) and the sample standard deviation, SD, using equation (O.2). The Obs. column presents the number of sample firms observed for the year.

Table P.4 (Continued)

PANEL A

The Primary and Secondary Sample Cross-Sectional Regression Analysis for Historical Value-at-Risk Actual at the 99% and 95% Confidence Levels

Year	Regression													Correlation		Descriptive Statistics		*Obs.*
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	1.094**	21.36	6.4E-11	0.94	1.25	0.053**	5.55	1.3E-04	0.02	0.08	0.97	0.04	12	0.987**	3.2E-11	-0.01	0.19	14
1995	0.911**	35.85	2.2E-14	0.83	0.99	0.019*	2.39	3.3E-02	-4.8E-03	0.04	0.99	0.02	13	0.995**	1.1E-14	-0.22	0.21	15
1996	0.992**	16.01	6.2E-10	0.80	1.18	0.043**	4.02	1.5E-03	0.01	0.08	0.95	0.04	13	0.976**	3.1E-10	-0.03	0.18	15
1997	0.99**	22.52	8.4E-12	0.86	1.12	0.028**	5.33	1.4E-04	0.01	0.04	0.98	0.02	13	0.987**	4.2E-12	-0.02	0.12	15
1998	0.945**	25.50	1.7E-12	0.83	1.06	0.066**	5.53	9.7E-05	0.03	0.10	0.98	0.04	13	0.99**	8.7E-13	-0.18	0.28	15
1999	0.987**	13.04	3.2E-09	0.76	1.21	0.048**	3.16	6.9E-03	2.9E-03	0.09	0.92	0.04	14	0.961**	1.6E-09	-0.16	0.13	16
2000	1.017**	30.21	3.8E-14	0.92	1.12	0.05**	4.29	7.5E-04	0.02	0.08	0.98	0.04	14	0.992**	1.9E-14	-0.18	0.30	16
2001	0.808**	13.90	1.4E-09	0.63	0.98	0.010	0.41	6.9E-01	-0.07	0.09	0.93	0.05	14	0.966**	7.0E-10	-0.38	0.22	16
2002	0.916**	14.98	5.2E-10	0.73	1.10	0.024	0.73	4.8E-01	-0.07	0.12	0.94	0.06	14	0.97**	2.6E-10	-0.48	0.26	16
2003	0.885**	149.8	7.7E-24	0.87	0.90	-0.003	-0.70	5.0E-01	-0.02	0.01	1.00	0.01	14	1**	3.8E-24	-0.58	0.53	16
2004	0.904**	30.59	3.2E-14	0.82	0.99	0.037**	4.43	5.7E-04	0.01	0.06	0.99	0.03	14	0.993**	1.6E-14	-0.14	0.25	16
2005	0.821**	14.68	6.8E-10	0.65	0.99	0.03**	5.51	7.7E-05	0.01	0.05	0.94	0.02	14	0.969**	3.4E-10	-0.02	0.10	16
2006	0.991**	26.60	2.2E-13	0.88	1.10	0.029**	6.01	3.2E-05	0.01	0.04	0.98	0.02	14	0.99**	1.1E-13	0.03	0.13	16
2007	0.791**	18.67	2.7E-11	0.66	0.92	0.021	1.73	1.1E-01	-0.01	0.06	0.96	0.04	14	0.981**	1.4E-11	-0.17	0.23	16
2008	0.949**	77.13	8.3E-20	0.91	0.99	0.065**	4.94	2.2E-04	0.03	0.10	1.00	0.03	14	0.999**	4.1E-20	-0.84	0.68	16

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The sample consists of a maximum of 16 observations per yearly regression from 16 firms in the LSE consisting of the 5 banks and 11 banking related firms that adopted the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table P.4 (Continued)

PANEL B

The Control Group Cross-Sectional Regression Analysis for Historical Value-at-Risk Actual at the 99% and 95% Confidence Levels

Year	Regression													Correlation		Descriptive Statistics		*Obs.*
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	0.805**	7.91	2.4E-05	0.47	1.14	0.008	0.51	6.2E-01	-0.04	0.06	0.87	0.03	9	0.935**	1.2E-05	-0.13	0.09	11
1995	0.934**	31.35	2.6E-11	0.84	1.03	0.017*	2.36	4.0E-02	-0.01	0.04	0.99	0.01	10	0.995**	1.3E-11	-0.22	0.12	12
1996	0.954**	38.88	3.0E-12	0.88	1.03	0.017**	4.50	1.1E-03	4.9E-03	0.03	0.99	0.01	10	0.997**	1.5E-12	-0.05	0.15	12
1997	0.991**	40.74	1.9E-12	0.91	1.07	0.023**	4.95	5.8E-04	0.01	0.04	0.99	0.02	10	0.997**	9.5E-13	-0.07	0.19	12
1998	0.943**	41.75	1.5E-12	0.87	1.01	0.032**	3.83	3.3E-03	0.01	0.06	0.99	0.02	10	0.997**	7.5E-13	-0.29	0.23	12
1999	0.963**	66.66	1.4E-14	0.92	1.01	0.018**	3.81	3.4E-03	2.9E-03	0.03	1.00	0.01	10	0.999**	7.0E-15	-0.20	0.26	12
2000	0.987**	23.20	5.0E-10	0.85	1.12	0.037**	3.82	3.4E-03	0.01	0.07	0.98	0.03	10	0.991**	2.5E-10	-0.05	0.23	12
2001	1.016**	15.16	3.2E-08	0.80	1.23	0.076*	2.88	1.6E-02	-0.01	0.16	0.96	0.03	10	0.979**	1.6E-08	-0.37	0.13	12
2002	0.928**	11.65	3.9E-07	0.68	1.18	0.011	0.32	7.6E-01	-0.10	0.12	0.93	0.02	10	0.965**	1.9E-07	-0.42	0.08	12
2003	0.949**	12.81	1.6E-07	0.71	1.18	0.019	0.50	6.3E-01	-0.10	0.14	0.94	0.02	10	0.971**	7.9E-08	-0.50	0.09	12
2004	1.045**	18.40	4.8E-09	0.87	1.23	0.037**	8.31	8.4E-06	0.02	0.05	0.97	0.01	10	0.986**	2.4E-09	-0.04	0.07	12
2005	0.904**	27.55	9.2E-11	0.80	1.01	0.028**	10.1	1.4E-06	0.02	0.04	0.99	0.01	10	0.993**	4.6E-11	0.03	0.08	12
2006	0.988**	67.44	1.3E-14	0.94	1.03	0.02**	8.60	6.2E-06	0.01	0.03	1.00	0.01	10	0.999**	6.3E-15	0.03	0.16	12
2007	0.888**	17.41	8.3E-09	0.73	1.05	0.031**	3.19	9.7E-03	1.9E-04	0.06	0.97	0.03	10	0.984**	4.1E-09	-0.09	0.17	12
2008	0.927**	21.71	9.6E-10	0.79	1.06	0.042	1.71	1.2E-01	-0.04	0.12	0.98	0.03	10	0.99**	4.8E-10	-0.55	0.19	12

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The Control group consists of a maximum of 12 observations per yearly regression from 12 banking related firms in the LSE that did not adopt the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table P.4 (Continued)

PANEL C

The Primary Sample Cross-Sectional Regression Analysis for Historical Value-at-Risk Actual at the 99% and 95% Confidence Levels

Year	Regression													Correlation		Descriptive Statistics		*Obs.*
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	0.995**	11.18	7.9E-03	0.11	1.88	0.067	3.79	6.3E-02	-0.11	0.24	0.98	0.03	2	0.992**	4.0E-03	-0.09	0.21	4
1995	0.812**	19.78	2.5E-03	0.40	1.22	0.012	0.91	4.6E-01	-0.12	0.15	0.99	0.01	2	0.997**	1.3E-03	-0.29	0.18	4
1996	0.692	2.56	1.2E-01	-1.99	3.37	0.077	3.28	8.2E-02	-0.16	0.31	0.77	0.03	2	0.875	6.2E-02	0.06	0.07	4
1997	1.085**	50.03	4.0E-04	0.87	1.30	0.047**	16.1	3.8E-03	0.02	0.08	1.00	0.01	2	1**	2.0E-04	0.01	0.15	4
1998	1.055**	30.98	1.0E-03	0.72	1.39	0.142*	7.29	1.8E-02	-0.05	0.34	1.00	0.02	2	0.999**	5.2E-04	-0.49	0.35	4
1999	1.274*	3.77	3.3E-02	-0.70	3.25	0.124	1.79	1.7E-01	-0.28	0.53	0.83	0.06	3	0.909*	1.6E-02	-0.19	0.09	5
2000	0.919**	23.06	1.8E-04	0.69	1.15	0.017	1.05	3.7E-01	-0.08	0.11	0.99	0.02	3	0.997**	8.9E-05	-0.36	0.21	5
2001	0.971**	26.69	1.2E-04	0.76	1.18	0.056*	5.52	1.2E-02	-3.3E-03	0.12	1.00	0.01	3	0.998**	5.8E-05	-0.23	0.19	5
2002	0.969**	5.88	9.8E-03	0.01	1.93	0.039	0.61	5.8E-01	-0.33	0.41	0.92	0.03	3	0.959**	4.9E-03	-0.37	0.10	5
2003	0.926**	263.5	1.2E-07	0.91	0.95	0.009*	5.34	1.3E-02	-8.5E-04	0.02	1.00	2E-03	3	1**	6.0E-08	-0.42	0.26	5
2004	0.586**	6.83	6.4E-03	0.08	1.09	0.013	1.10	3.5E-01	-0.06	0.08	0.94	0.02	3	0.969**	3.2E-03	-0.10	0.11	5
2005	0.917*	4.53	2.0E-02	-0.26	2.10	0.024	2.82	6.7E-02	-0.03	0.07	0.87	0.01	3	0.934*	1.0E-02	-0.03	0.03	5
2006	0.963**	16.05	5.3E-04	0.61	1.31	0.021**	9.29	2.6E-03	0.01	0.03	0.99	0.01	3	0.994**	2.6E-04	-4.1E-03	0.04	5
2007	0.961**	20.71	2.5E-04	0.69	1.23	0.031	2.19	1.2E-01	-0.05	0.11	0.99	0.02	3	0.997**	1.2E-04	-0.27	0.17	5
2008	0.962**	30.38	7.8E-05	0.78	1.15	0.083	1.93	1.5E-01	-0.17	0.33	1.00	0.04	3	0.998**	3.9E-05	-1.21	0.67	5

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The sample consists of a maximum of 5 observations per yearly regression from the 5 banks in the LSE that adopted the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table P.4 (Continued)

PANEL D

The Secondary Sample Cross-Sectional Regression Analysis for Historical Value-at-Risk Actual at the 99% and 95% Confidence Levels

Year	Regression													Correlation		Descriptive Statistics		*Obs.*
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	1.163**	21.71	2.1E-08	0.98	1.34	0.042**	4.38	2.3E-03	0.01	0.07	0.98	0.03	8	0.992**	1.1E-08	0.02	0.19	10
1995	0.944**	69.03	1.4E-13	0.90	0.99	0.017**	4.19	2.3E-03	0.00	0.03	1.00	0.01	9	0.999**	7.1E-14	-0.20	0.23	11
1996	0.983**	14.10	1.9E-07	0.76	1.21	0.036*	2.69	2.5E-02	-0.01	0.08	0.96	0.04	9	0.978**	9.6E-08	-0.06	0.19	11
1997	0.911**	25.96	9.0E-10	0.80	1.03	0.018**	4.57	1.3E-03	0.01	0.03	0.99	0.01	9	0.993**	4.5E-10	-0.03	0.11	11
1998	0.925**	11.99	7.8E-07	0.67	1.18	0.057**	4.76	1.0E-03	0.02	0.10	0.94	0.04	9	0.97**	3.9E-07	-0.07	0.15	11
1999	0.965**	22.70	3.0E-09	0.83	1.10	0.036**	4.17	2.4E-03	0.01	0.06	0.98	0.02	9	0.991**	1.5E-09	-0.14	0.15	11
2000	1.038**	22.38	3.4E-09	0.89	1.19	0.051**	3.49	6.8E-03	3.5E-03	0.10	0.98	0.05	9	0.991**	1.7E-09	-0.10	0.31	11
2001	0.729**	8.62	1.2E-05	0.45	1.00	-0.029	-0.70	5.0E-01	-0.16	0.11	0.89	0.06	9	0.944**	6.1E-06	-0.45	0.21	11
2002	0.918**	11.69	9.6E-07	0.66	1.17	0.028	0.58	5.7E-01	-0.13	0.18	0.94	0.07	9	0.969**	4.8E-07	-0.53	0.30	11
2003	0.883**	138.0	2.8E-16	0.86	0.90	-0.002	-0.28	7.8E-01	-0.02	0.02	1.00	0.01	9	1**	1.4E-16	-0.65	0.61	11
2004	0.919**	37.49	3.4E-11	0.84	1.00	0.036**	4.45	1.6E-03	0.01	0.06	0.99	0.02	9	0.997**	1.7E-11	-0.16	0.30	11
2005	0.813**	12.53	5.3E-07	0.60	1.02	0.034**	4.60	1.3E-03	0.01	0.06	0.95	0.02	9	0.972**	2.7E-07	-0.01	0.12	11
2006	0.982**	21.65	4.5E-09	0.83	1.13	0.033**	4.72	1.1E-03	0.01	0.06	0.98	0.02	9	0.991**	2.3E-09	0.05	0.15	11
2007	0.717**	26.76	6.9E-10	0.63	0.80	0.027**	3.81	4.2E-03	4.0E-03	0.05	0.99	0.02	9	0.994**	3.4E-10	-0.12	0.25	11
2008	0.945**	61.05	4.3E-13	0.89	0.99	0.061**	4.35	1.9E-03	0.02	0.11	1.00	0.03	9	0.999**	2.1E-13	-0.67	0.64	11

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The sample consists of a maximum of 11 observations per yearly regression from 11 banking related firms in the LSE that adopted the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table P.4 (Continued)

PANEL E

The Primary and Secondary Sample Cross-Sectional Regression Analysis for Historical Value-at-Risk Actual at the 99.9% and 95% Confidence Levels

Year	Regression													Correlation		Descriptive Statistics		*Obs.*
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	1.098**	19.41	2.0E-10	0.93	1.27	0.072*	6.78	2.1E-02	0.04	0.10	0.97	0.04	12	0.984**	9.9E-11	-0.03	0.19	14
1995	0.88**	24.69	2.6E-12	0.77	0.99	0.031**	2.68	2.0E-03	0.00	0.07	0.98	0.03	13	0.99**	1.3E-12	-0.25	0.22	15
1996	0.957**	12.65	1.1E-08	0.73	1.19	0.056	4.12	5.4E-01	0.02	0.10	0.92	0.05	13	0.962**	5.5E-09	-0.04	0.18	15
1997	0.961**	14.88	1.5E-09	0.77	1.15	0.039	5.00	7.8E-01	0.02	0.06	0.94	0.03	13	0.972**	7.6E-10	-0.03	0.12	15
1998	0.891**	18.03	1.4E-10	0.74	1.04	0.095	5.34	4.5E-01	0.04	0.15	0.96	0.05	13	0.981**	7.0E-11	-0.22	0.29	15
1999	0.893**	8.68	5.2E-07	0.59	1.20	0.06*	2.54	3.0E-02	-0.01	0.13	0.84	0.06	14	0.918**	2.6E-07	-0.19	0.14	16
2000	1.017**	19.23	1.8E-11	0.86	1.17	0.074	3.96	4.5E-01	0.02	0.13	0.96	0.06	14	0.982**	9.1E-12	-0.21	0.30	16
2001	0.786**	9.23	2.5E-07	0.53	1.04	0.047	1.14	6.3E-01	-0.08	0.17	0.86	0.07	14	0.927**	1.3E-07	-0.44	0.22	16
2002	0.731**	13.19	2.7E-09	0.57	0.90	-0.028	-0.82	2.2E-01	-0.13	0.07	0.93	0.07	14	0.962**	1.4E-09	-0.53	0.32	16
2003	0.807**	61.87	1.8E-18	0.77	0.85	-0.010	-0.92	7.8E-01	-0.04	0.02	1.00	0.03	14	0.998**	8.9E-19	-0.63	0.58	16
2004	0.862**	30.00	4.2E-14	0.78	0.95	0.048*	5.52	2.4E-02	0.02	0.07	0.98	0.03	14	0.992**	2.1E-14	-0.16	0.27	16
2005	0.799**	15.47	3.4E-10	0.65	0.95	0.044*	8.18	3.3E-02	0.03	0.06	0.94	0.02	14	0.972**	1.7E-10	-0.04	0.10	16
2006	1.03**	14.92	5.5E-10	0.82	1.24	0.049	5.92	7.7E-02	0.02	0.07	0.94	0.03	14	0.97**	2.7E-10	0.01	0.12	16
2007	0.764**	14.59	7.4E-10	0.61	0.92	0.033	2.10	5.2E-01	-0.01	0.08	0.94	0.05	14	0.969**	3.7E-10	-0.19	0.24	16
2008	0.92**	68.44	4.4E-19	0.88	0.96	0.092	6.10	3.7E-01	0.05	0.14	1.00	0.04	14	0.999**	2.2E-19	-0.89	0.70	16

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The sample consists of a maximum of 16 observations per yearly regression from 16 firms in the LSE consisting of the 5 banks and 11 banking related firms that adopted the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table P.4 (Continued)

PANEL F

The Control Group Cross-Sectional Regression Analysis for Historical Value-at-Risk Actual at the 99.9% and 95% Confidence Levels

Year	Regression													Correlation		Descriptive Statistics		*Obs.*
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	0.757**	6.74	8.4E-05	0.39	1.12	0.013	0.68	5.1E-01	-0.05	0.08	0.83	0.03	9	0.914**	4.2E-05	-0.15	0.10	11
1995	0.919**	20.33	1.8E-09	0.78	1.06	0.028*	2.35	4.1E-02	-0.01	0.07	0.98	0.02	10	0.988**	9.2E-10	-0.24	0.12	12
1996	0.949**	32.23	1.9E-11	0.86	1.04	0.026**	5.82	1.7E-04	0.01	0.04	0.99	0.01	10	0.995**	9.7E-12	-0.06	0.15	12
1997	0.971**	33.24	1.4E-11	0.88	1.06	0.03**	5.08	4.8E-04	0.01	0.05	0.99	0.02	10	0.996**	7.2E-12	-0.08	0.19	12
1998	0.937**	38.45	3.4E-12	0.86	1.01	0.055**	5.82	1.7E-04	0.02	0.08	0.99	0.02	10	0.997**	1.7E-12	-0.31	0.24	12
1999	0.951**	39.09	2.9E-12	0.87	1.03	0.031**	3.86	3.2E-03	0.01	0.06	0.99	0.02	10	0.997**	1.4E-12	-0.21	0.26	12
2000	0.952**	20.27	1.9E-09	0.80	1.10	0.054**	4.77	7.6E-04	0.02	0.09	0.98	0.04	10	0.988**	9.4E-10	-0.07	0.24	12
2001	0.956**	9.14	3.6E-06	0.62	1.29	0.102	2.21	5.1E-02	-0.04	0.25	0.89	0.05	10	0.945**	1.8E-06	-0.42	0.13	12
2002	0.735**	7.09	3.3E-05	0.41	1.06	-0.042	-0.86	4.1E-01	-0.20	0.11	0.83	0.03	10	0.913**	1.7E-05	-0.46	0.10	12
2003	0.849**	7.70	1.6E-05	0.50	1.20	-0.010	-0.17	8.7E-01	-0.20	0.18	0.86	0.03	10	0.925**	8.2E-06	-0.53	0.10	12
2004	1.058**	18.41	4.8E-09	0.88	1.24	0.047**	9.86	1.8E-06	0.03	0.06	0.97	0.01	10	0.986**	2.4E-09	-0.05	0.07	12
2005	0.878**	19.18	3.2E-09	0.73	1.02	0.04**	10.47	1.0E-06	0.03	0.05	0.97	0.01	10	0.987**	1.6E-09	0.02	0.08	12
2006	0.988**	43.62	9.6E-13	0.92	1.06	0.036**	10.00	1.6E-06	0.02	0.05	0.99	0.01	10	0.997**	4.8E-13	0.02	0.16	12
2007	0.831**	17.66	7.2E-09	0.68	0.98	0.046**	4.64	9.3E-04	0.01	0.08	0.97	0.03	10	0.984**	3.6E-09	-0.12	0.18	12
2008	0.818**	18.74	4.1E-09	0.68	0.96	0.021	0.75	4.7E-01	-0.07	0.11	0.97	0.03	10	0.986**	2.0E-09	-0.59	0.22	12

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The Control group consists of a maximum of 12 observations per yearly regression from 12 banking related firms in the LSE that did not adopt the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table P.4 (Continued)

PANEL G

The Primary Sample Cross-Sectional Regression Analysis for Historical Value-at-Risk Actual at the 99.9% and 95% Confidence Levels

Year	Regression													Correlation		Descriptive Statistics		*Obs.*
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	1.014**	12.62	6.2E-03	0.22	1.81	0.093*	5.56	3.1E-02	-0.07	0.26	0.99	0.03	2	0.994**	3.1E-03	-0.11	0.20	4
1995	0.733**	44.66	5.0E-04	0.57	0.90	0.012	2.02	1.8E-01	-0.05	0.07	1.00	0.01	2	0.999**	2.5E-04	-0.32	0.20	4
1996	0.545	1.98	1.9E-01	-2.18	3.27	0.099*	4.35	4.9E-02	-0.13	0.32	0.66	0.04	2	0.814	9.3E-02	0.04	0.09	4
1997	1.053**	12.07	6.8E-03	0.19	1.92	0.075*	6.24	2.5E-02	-0.04	0.19	0.99	0.02	2	0.993**	3.4E-03	-0.02	0.16	4
1998	1.029**	10.36	9.2E-03	0.04	2.01	0.198	3.14	8.8E-02	-0.43	0.82	0.98	0.06	2	0.991**	4.6E-03	-0.55	0.36	4
1999	1.188	1.95	1.5E-01	-2.37	4.74	0.163	1.09	3.5E-01	-0.71	1.03	0.56	0.10	3	0.748	7.3E-02	-0.23	0.08	5
2000	0.861**	15.63	5.7E-04	0.54	1.18	0.018	0.76	5.0E-01	-0.12	0.16	0.99	0.02	3	0.994**	2.8E-04	-0.38	0.22	5
2001	0.947**	7.61	4.7E-03	0.22	1.67	0.134	3.03	5.6E-02	-0.12	0.39	0.95	0.05	3	0.975**	2.4E-03	-0.31	0.19	5
2002	0.856*	4.31	2.3E-02	-0.30	2.02	0.020	0.24	8.3E-01	-0.46	0.50	0.86	0.04	3	0.928*	1.2E-02	-0.40	0.11	5
2003	0.922**	35.01	5.1E-05	0.77	1.08	0.059*	4.20	2.5E-02	-0.02	0.14	1.00	0.01	3	0.999**	2.6E-05	-0.48	0.26	5
2004	0.583**	6.46	7.5E-03	0.06	1.11	0.022	1.61	2.1E-01	-0.06	0.10	0.93	0.02	3	0.966**	3.8E-03	-0.12	0.11	5
2005	0.718*	3.50	3.9E-02	-0.48	1.91	0.031	2.48	9.0E-02	-0.04	0.10	0.80	0.01	3	0.896*	2.0E-02	-0.05	0.04	5
2006	0.902**	16.81	4.6E-04	0.59	1.22	0.031**	13.4	8.9E-04	0.02	0.04	0.99	5.E-03	3	0.995**	2.3E-04	-0.02	0.05	5
2007	0.965**	13.81	8.2E-04	0.56	1.37	0.044	1.96	1.4E-01	-0.09	0.17	0.98	0.02	3	0.992**	4.1E-04	-0.28	0.17	5
2008	0.91**	26.22	1.2E-04	0.71	1.11	0.083	1.67	1.9E-01	-0.21	0.37	1.00	0.05	3	0.998**	6.1E-05	-1.28	0.71	5

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The sample consists of a maximum of 5 observations per yearly regression from the 5 banks in the LSE that adopted the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table P.4 (Continued)

PANEL H

The Secondary Sample Cross-Sectional Regression Analysis for Historical Value-at-Risk Actual at the 99.9% and 95% Confidence Levels

Year	Regression													Correlation		Descriptive Statistics		*Obs.*
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	1.175**	19.87	4.3E-08	0.98	1.37	0.059**	5.63	4.9E-04	0.02	0.09	0.98	0.03	8	0.99**	2.1E-08	0.00	0.19	10
1995	0.932**	37.57	3.3E-11	0.85	1.01	0.032**	4.20	2.3E-03	0.01	0.06	0.99	0.02	9	0.997**	1.7E-11	-0.22	0.23	11
1996	0.95**	12.06	7.4E-07	0.69	1.21	0.045*	2.81	2.0E-02	-0.01	0.10	0.94	0.05	9	0.97**	3.7E-07	-0.07	0.20	11
1997	0.886**	19.23	1.3E-08	0.74	1.04	0.024**	4.54	1.4E-03	0.01	0.04	0.98	0.02	9	0.988**	6.4E-09	-0.04	0.11	11
1998	0.868**	8.95	8.9E-06	0.55	1.18	0.083**	4.81	9.6E-04	0.03	0.14	0.90	0.05	9	0.948**	4.5E-06	-0.10	0.15	11
1999	0.909**	20.83	6.4E-09	0.77	1.05	0.048**	4.89	8.6E-04	0.02	0.08	0.98	0.02	9	0.99**	3.2E-09	-0.17	0.16	11
2000	1.056**	14.37	1.6E-07	0.82	1.29	0.078**	3.36	8.4E-03	0.00	0.15	0.96	0.07	9	0.979**	8.2E-08	-0.13	0.30	11
2001	0.667**	6.32	1.4E-04	0.32	1.01	-0.028	-0.50	6.3E-01	-0.21	0.16	0.82	0.07	9	0.903**	6.9E-05	-0.49	0.22	11
2002	0.729**	10.46	2.5E-06	0.50	0.96	-0.028	-0.59	5.7E-01	-0.18	0.13	0.92	0.08	9	0.961**	1.2E-06	-0.59	0.37	11
2003	0.797**	65.47	2.3E-13	0.76	0.84	-0.023	-2.01	7.5E-02	-0.06	0.01	1.00	0.03	9	0.999**	1.1E-13	-0.70	0.68	11
2004	0.874**	32.26	1.3E-10	0.79	0.96	0.047**	4.96	7.8E-04	0.02	0.08	0.99	0.03	9	0.996**	6.5E-11	-0.18	0.32	11
2005	0.795**	13.68	2.5E-07	0.61	0.98	0.048**	6.94	6.7E-05	0.03	0.07	0.95	0.02	9	0.977**	1.3E-07	-0.03	0.12	11
2006	1.019**	12.30	6.2E-07	0.75	1.29	0.056**	4.81	9.5E-04	0.02	0.09	0.94	0.04	9	0.972**	3.1E-07	0.03	0.15	11
2007	0.685**	20.17	8.4E-09	0.57	0.80	0.041**	4.23	2.2E-03	0.01	0.07	0.98	0.03	9	0.989**	4.2E-09	-0.15	0.26	11
2008	0.928**	55.48	1.0E-12	0.87	0.98	0.096**	6.02	2.0E-04	0.04	0.15	1.00	0.03	9	0.999**	5.0E-13	-0.72	0.65	11

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The sample consists of a maximum of 11 observations per yearly regression from 11 banking related firms in the LSE that adopted the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table P.5 Time Series Regression Analysis for Historical Value-at-Risk Confidence Levels

Time Series Regression

Table P.5 Panel A to Panel D show the results for the time series regressions that test the Historical Value-at-Risk Actual at the 99% and the 95% confidence levels by applying the regression specified in equation (O.5). In this table, Panel A presents results for the Primary and Secondary sample; Panel B presents results for the Control group; Panel C presents results for the Primary sample; and, Panel D presents results for the Secondary sample.

Table P.5 Panels E to H show the results for the time series regressions that test the Historical Value-at-Risk Actual at the 99.9% and the 95% confidence levels by applying the regression specified in equation (O.6). Table P.5 Panel E presents results for the Primary and Secondary sample; Panel F presents results for the Control group; Panel G presents results for the Primary sample; and, Panel H presents results for the Secondary sample.

Time Series Regression Table Description

The Table P.5 columns represent the following:

The Total Period column represents the time series regression results for the year range 1994 to 2008, with a single year represented by the number of days from 1st January to 31st December. The Sub-Periods column represents the time series regression results for the year range 1994 to 2004, and for 1994 to 2007, with a single year represented by the number of days from 1st January to 31st December.

The *Regression* panel presents the coefficients and related statistics for the regressions specified in equations (O.5) and (O.6), and follows the respective models:

$$V_{95:N,t} = a + bV_{99:\,N,i} + e_{95:\,N,t}$$
$$V_{95:N,t} = a + bV_{99.9:\,N,i} + e_{95:\,N,t}$$

Where: $V_{95:N,t}$ is the Value-at-Risk at the 95% confidence level for N firms at time t, $V_{99:\,N,i}$ and $bV_{99:.9\,N,i}$ is the Value-at-Risk at the 99% and 99.9% confidence levels respectively for N firms at time t, and $e_{N,t}$ is the regression error term. The *Lower* and *Upper* are the corresponding coefficient levels predicted at a 99% confidence level.

The *Correlation* panel presents the correlation statistics for the relationship between the dependent and independent variables. The *Descriptive Statistics* panel presents for the variables tested, the average sample means calculated using equation (M.6), that applies the sample average for each time series panel year, calculated using equation (M.10); the standard deviation, *SD*, of sample means for the time series using equation (M.7); and, the standard error of means, *SE*, for the time series. The *Observations* panel presents: *Firms (n)* (term *N* in the regression) that represents the average number of sample firms in the time series regression (for the Primary and Secondary sample, for the time period 1994 to 2004, the number of firms are rounded down); *Years (T)* represents the number of time series years; *Total (n* x *T)* represents the number of averaged pooled time series regression observations.

Table P.5 (Continued)

PANEL A

The Primary and Secondary Sample Time Series Regression Analysis for Historical Value-at-Risk Actual at the 99% and 95% Confidence Levels

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	0.926**	0.948**	0.938**
		t (b)	67.24	40.64	48.85
		p (b)	6.5E-18	1.6E-11	3.5E-15
		SE(b)	0.014	0.023	0.019
		Lower	0.885	0.872	0.879
		Upper	0.968	1.024	0.997
	Intercept	*a*	0.038**	0.043**	0.04**
		t (a)	8.50	6.54	8.17
		p (a)	1.1E-06	1.1E-04	3.0E-06
		SE(a)	0.005	0.007	0.005
		Lower	0.025	0.022	0.025
		Upper	0.052	0.064	0.055
	Model	R^2	0.997	0.995	0.995
		s(e)	0.013	0.014	0.013
		df(e)	13	9	12
Correlation		*r*	0.999**	0.997**	0.997**
		p(r)	3.2E-18	8.2E-12	1.8E-15
Descriptive Statistics		*V*	-0.225	-0.217	-0.181
		SD (V)	0.246	0.189	0.184
		SE(V)	0.063	0.057	0.049
		V 95	-0.170	-0.163	-0.130
		SD (V 95)	0.228	0.179	0.173
		SE(V 95)	0.059	0.054	0.046
Observations		*Firms (n)*[a]	16	15	16
		Years (T)	15	11	14
		Total (n x T)	234	170	218

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.

[a]*Firms(n)* is the average number of firms surveyed for each year, rounded to the nearest whole number. In addition, *Firms(n)* reflects missing data items presented in Table Z.1. These same criteria applies to the presentation of the variable *Firms(n)* for all the time series results presented in this study.

The sample consists of a maximum of 234 observations from 16 firms in the LSE consisting of the 5 banks and 11 banking related firms that adopted the IFRS standards in 2005. Observations are based on yearly averages calculated using daily levels from 1994 to 2008.
See main table notes for the regression model applied.
Regression coefficients and related statistics are calculated using OLS regression.

Table P.5 (Continued)

PANEL B

The Control Group Time Series Regression Analysis for Historical Value-at-Risk Actual at the 99% and 95% Confidence Levels

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	0.928**	0.945**	0.946**
		t (b)	56.65	42.70	55.88
		p (b)	6.0E-17	1.1E-11	7.1E-16
		SE(b)	0.016	0.022	0.017
		Lower	0.879	0.874	0.894
		Upper	0.977	1.017	0.998
	Intercept	*a*	0.024**	0.026**	0.026**
		t (a)	5.57	4.37	6.57
		p (a)	9.1E-05	1.8E-03	2.7E-05
		SE(a)	0.004	0.006	0.004
		Lower	0.011	0.007	0.014
		Upper	0.038	0.045	0.038
	Model	R^2	0.996	0.995	0.996
		s(e)	0.012	0.011	0.010
		df(e)	13	9	12
Correlation		*r*	0.998**	0.998**	0.998**
		p(r)	3.0E-17	5.3E-12	3.6E-16
Descriptive Statistics		*V*	-0.195	-0.214	-0.170
		SD (V)	0.190	0.163	0.170
		SE(V)	0.049	0.049	0.045
		V 95	-0.156	-0.177	-0.134
		SD (V 95)	0.177	0.155	0.161
		SE(V 95)	0.046	0.047	0.043
Observations		*Firms (n)*	12	12	12
		Years (T)	15	11	14
		Total (n x T)	179	131	167

Panel notes:

**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.

The control consists of a maximum of 179 observations from 12 banking related firms in the LSE that did not adopt the IFRS standards in 2005. Observations are based on yearly averages calculated using daily levels from 1994 to 2008.

See main table notes for the regression model applied.

Regression coefficients and the related statistics are calculated using OLS regression.

Table P.5 (Continued)

PANEL C

The Primary Sample Time Series Regression Analysis for Historical Value-at-Risk Actual at the 99% and 95% Confidence Levels

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	0.932**	0.969**	0.944**
		t (b)	52.35	26.72	27.80
		p (b)	1.7E-16	7.0E-10	2.9E-12
		SE(b)	0.018	0.036	0.034
		Lower	0.878	0.851	0.840
		Upper	0.986	1.086	1.048
	Intercept	*a*	0.042**	0.055**	0.044**
		t (a)	5.88	5.38	4.99
		p (a)	5.4E-05	4.4E-04	3.1E-04
		SE(a)	0.007	0.010	0.009
		Lower	0.021	0.022	0.017
		Upper	0.064	0.088	0.071
	Model	R^2	0.995	0.988	0.985
		s(e)	0.021	0.021	0.021
		df(e)	13	9	12
Correlation		*r*	0.998**	0.994**	0.992**
		p(r)	8.3E-17	3.5E-10	1.5E-12
Descriptive Statistics		*V*	-0.265	-0.224	-0.197
		SD (V)	0.312	0.180	0.175
		SE(V)	0.080	0.054	0.047
		V 95	-0.205	-0.162	-0.142
		SD (V 95)	0.291	0.175	0.167
		SE(V 95)	0.075	0.053	0.045
Observations		*Firms (n)*	5	5	5
		Years (T)	15	11	14
		Total (n x T)	70	51	64

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.
The sample consists of a maximum of 70 observations from the 5 banks in the LSE that adopted the IFRS standards in 2005. Observations are based on yearly averages calculated using daily levels from 1994 to 2008.
See main table notes for the regression model applied.
Regression coefficients and the related statistics are calculated using OLS regression.

Table P.5 (Continued)

PANEL D

The Secondary Sample Time Series Regression Analysis for Historical Value-at-Risk Actual at the 99% and 95% Confidence Levels

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	0.923**	0.929**	0.93**
		t (b)	60.29	42.93	51.14
		p (b)	2.7E-17	1.0E-11	2.1E-15
		SE(b)	0.015	0.022	0.018
		Lower	0.877	0.859	0.875
		Upper	0.969	1.000	0.986
	Intercept	*a*	0.037**	0.036**	0.038**
		t (a)	7.71	5.55	7.63
		p (a)	3.3E-06	3.6E-04	6.1E-06
		SE(a)	0.005	0.007	0.005
		Lower	0.023	0.015	0.023
		Upper	0.051	0.058	0.053
	Model	R^2	0.996	0.995	0.995
		s(e)	0.014	0.015	0.014
		df(e)	13	9	12
Correlation		*r*	0.998**	0.998**	0.998**
		p(r)	1.3E-17	5.0E-12	1.0E-15
Descriptive Statistics		*V*	-0.209	-0.216	-0.176
		SD (V)	0.242	0.223	0.214
		SE(V)	0.063	0.067	0.057
		V 95	-0.156	-0.165	-0.126
		SD (V 95)	0.224	0.208	0.200
		SE(V 95)	0.058	0.063	0.053
Observations		*Firms (n)*	11	11	11
		Years (T)	15	11	14
		Total (n x T)	164	120	153

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.
The sample consists of a maximum of 164 observations from 11 banking related firms in the LSE that adopted the IFRS standards in 2005. Observations are based on yearly averages calculated using daily levels from 1994 to 2008.
See main table notes for the regression model applied.
Regression coefficients and the related statistics are calculated using OLS regression.

Table P.5 (Continued)

PANEL E

The Primary and Secondary Sample Time Series Regression Analysis for Historical Value-at-Risk Actual at the 99.9% and 95% Confidence Levels

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	0.877**	0.881**	0.876**
		t (b)	47.836	26.591	33.649
		p (b)	5.3E-16	7.3E-10	3.0E-13
		SE(b)	0.018	0.033	0.026
		Lower	0.822	0.773	0.797
		Upper	0.932	0.989	0.956
	Intercept	*a*	0.054**	0.056**	0.054**
		t (a)	8.186	5.341	7.268
		p (a)	1.7E-06	4.7E-04	9.9E-06
		SE(a)	0.007	0.010	0.007
		Lower	0.034	0.022	0.031
		Upper	0.073	0.089	0.076
	Model	R^2	0.994	0.987	0.990
		s(e)	0.018	0.021	0.018
		df(e)	13	9	12
Correlation		*r*	0.997**	0.994**	0.995**
		p(r)	2.7E-16	3.6E-10	1.5E-13
Descriptive Statistics		*V*	-0.255	-0.248	-0.210
		SD (V)	0.259	0.202	0.197
		SE(V)	0.067	0.061	0.053
		V 95	-0.170	-0.163	-0.130
		SD (V 95)	0.228	0.179	0.173
		SE(V 95)	0.059	0.054	0.046
Observations		*Firms (n)*	16	15	16
		Years (T)	15	11	14
		Total (n x T)	234	170	218

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.
The sample consists of a maximum of 234 observations from 16 firms in the LSE consisting of the 5 banks and 11 banking related firms that adopted the IFRS standards in 2005. Observations are based on yearly averages calculated using daily levels from 1994 to 2008.
See main table notes for the regression model applied.
Regression coefficients and related statistics are calculated using OLS regression.

Table P.5 (Continued)

PANEL F

The Control Group Time Series Regression Analysis for Historical Value-at-Risk Actual at the 99.9% and 95% Confidence Levels

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	0.876**	0.885**	0.896**
		t (b)	36.98	26.19	33.92
		p (b)	1.5E-14	8.3E-10	2.7E-13
		SE(b)	0.024	0.034	0.026
		Lower	0.804	0.776	0.815
		Upper	0.947	0.995	0.977
	Intercept	*a*	0.034**	0.032**	0.036**
		t (a)	4.90	3.26	5.33
		p (a)	2.9E-04	9.8E-03	1.8E-04
		SE(a)	0.007	0.010	0.007
		Lower	0.013	1.3E-04	0.015
		Upper	0.055	0.063	0.057
	Model	R^2	0.991	0.987	0.990
		s(e)	0.018	0.019	0.017
		df(e)	13	9	12
Correlation		*r*	0.995**	0.994**	0.995**
		p(r)	7.4E-15	4.2E-10	1.4E-13
Descriptive Statistics		*V*	-0.217	-0.235	-0.190
		SD (V)	0.201	0.173	0.179
		SE(V)	0.052	0.052	0.048
		V 95	-0.156	-0.177	-0.134
		SD (V 95)	0.177	0.155	0.161
		SE(V 95)	0.046	0.047	0.043
Observations		*Firms (n)*	12	12	12
		Years (T)	15	11	14
		Total (n x T)	179	131	167

Panel notes:

**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.

The control consists of a maximum of 179 observations from 12 banking related firms in the LSE that did not adopt the IFRS standards in 2005. Observations are based on yearly averages calculated using daily levels from 1994 to 2008.

See main table notes for the regression model applied.

Regression coefficients and the related statistics are calculated using OLS regression.

Table P.5 (Continued)

PANEL G

The Primary Sample Time Series Regression Analysis for Historical Value-at-Risk Actual at the 99.9% and 95% Confidence Levels

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	0.889**	0.903**	0.874**
		t (b)	33.50	16.86	17.62
		p (b)	5.3E-14	4.1E-08	6.1E-10
		SE(b)	0.027	0.054	0.050
		Lower	0.809	0.729	0.722
		Upper	0.969	1.077	1.025
	Intercept	*a*	0.063**	0.076**	0.060**
		t (a)	5.42	4.42	4.10
		p (a)	1.2E-04	0.002	0.001
		SE(a)	0.012	0.017	0.015
		Lower	0.028	0.020	0.015
		Upper	0.097	0.131	0.104
	Model	R^2	0.989	0.969	0.963
		s(e)	0.032	0.032	0.033
		df(e)	13	9	12
Correlation		*r*	0.994**	0.985**	0.981**
		p(r)	2.6E-14	2.0E-08	3.0E-10
Descriptive Statistics		*V*	-0.301	-0.263	-0.231
		SD (V)	0.326	0.191	0.187
		SE(V)	0.084	0.058	0.050
		V 95	-0.205	-0.162	-0.142
		SD (V 95)	0.291	0.175	0.167
		SE(V 95)	0.075	0.053	0.045
Observations		*Firms (n)*	5	5	5
		Years (T)	15	11	14
		Total (n x *T)*	70	51	64

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.
The sample consists of a maximum of 70 observations from the 5 banks in the LSE that adopted the IFRS standards in 2005. Observations are based on yearly averages calculated using daily levels from 1994 to 2008.
See main table notes for the regression model applied.
Regression coefficients and the related statistics are calculated using OLS regression.

Table P.5 (Continued)

PANEL H

The Secondary Sample Time Series Regression Analysis for Historical Value-at-Risk Actual at the 99.9% and 95% Confidence Levels

Measure			Total Period 1994-2008	Sub-Periods 1994-2004	Sub-Periods 1994-2007
Regression	*Slope*	*b*	0.875**	0.874**	0.88**
		t (b)	44.45	30.85	36.90
		p (b)	1.4E-15	1.9E-10	1.0E-13
		SE(b)	0.020	0.028	0.024
		Lower	0.816	0.782	0.807
		Upper	0.935	0.966	0.953
	Intercept	*a*	0.052**	0.048**	0.052**
		t (a)	7.67	5.13	7.35
		p (a)	3.5E-06	6.2E-04	8.9E-06
		SE(a)	0.007	0.009	0.007
		Lower	0.031	0.018	0.030
		Upper	0.072	0.079	0.074
	Model	R^2	0.993	0.991	0.991
		s(e)	0.019	0.021	0.019
		df(e)	13	9	12
Correlation		*r*	0.997**	0.995**	0.996**
		p(r)	6.9E-16	9.7E-11	5.0E-14
Descriptive Statistics		*V*	-0.237	-0.244	-0.202
		SD (V)	0.255	0.237	0.226
		SE(V)	0.066	0.071	0.060
		V 95	-0.156	-0.165	-0.126
		SD (V 95)	0.224	0.208	0.200
		SE(V 95)	0.058	0.063	0.053
Observations		*Firms (n)*	11	11	11
		Years (T)	15	11	14
		Total (n x T)	164	120	153

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.
The sample consists of a maximum of 164 observations from 11 banking related firms in the LSE that adopted the IFRS standards in 2005. Observations are based on yearly averages calculated using daily levels from 1994 to 2008.
See main table notes for the regression model applied.
Regression coefficients and the related statistics are calculated using OLS regression.

Analysis

For the samples and the control group Table P.4 and Table P.5 show that the cross-sectional and time series regressions for the Historical Value-at-Risk Actual (specified for the 250-day time horizon) at the 95% confidence level exhibit similar magnitude slopes with the 99% and the 99.9% confidence levels. Table P.4 and Table P.5 also exhibit the expected result that the Historical Value-at-Risk Actual at the 95% confidence level, vary in magnitude with greater statistical significance to the 99% than the 99.9% confidence level.

P.5 Market Price Returns and Historical Value-at-Risk Actual

The regression analysis for the market price returns and Historical Value-at-Risk Actual is presented for the time range 1994 to 2008 in Table P.6 and Table P.7. In the regressions, the Historical Value-at-Risk Actual is tested as the dependent variable, and the market price return variable is tested as the independent variable.

Table P.6 Cross-Sectional Regression Analysis for Market Price Returns and Historical Value-at-Risk Actual

Cross-Sectional Regression

Table P.6 Panel A to Panel D show the results for the cross-sectional regressions that test the market price returns and Historical Value-at-Risk Actual by applying the regression specified in equation (O.9). In this table, Panel A presents results for the Primary and Secondary sample; Panel B presents results for the Control group; Panel C presents results for the Primary sample; and, Panel D presents results for the Secondary sample.

Cross-Sectional Regression Table Description

The Table P.6 columns represent the following:

Year is the *panel data* year represented by the number of days from 1st January to 31st December, and also represents the 31st December variable record date for each year.

The Regression column presents the coefficients and related statistics for the regression specified in equation (O.9) and follows the model:

$$V_{i,t} = a + b \ dM_{i,t} + e_{i,t}$$

Where: $V_{i,t}$ is the Value-at-Risk (V_t) for the i^{th} firm at time t, $dM_{i,t}$ is the log Market Price return$(M_{t-1,t})$ for the i^{th} firm at time t, and $e_{N,t}$ is the regression error term. The *Lower* and *Upper* are the corresponding coefficient levels predicted at a 99% confidence level.

The Correlation column presents the correlation statistics for the relationship between the dependent and independent variables. The Descriptive Statistics column presents for the independent variable, the sample mean calculated using equation (O.17) and the sample standard deviation, *SD*, using equation (O.18). The *Obs.* column presents the number of sample firms observed for the year.

Table P.6 (Continued)

PANEL A

The Primary and Secondary Sample Cross-Sectional Regression Analysis for Market Price Returns and Historical Value-at-Risk Actual

Year	Regression													Correlation		Descriptive Statistics		*Obs.*
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	0.904**	14.67	5.0E-09	0.72	1.09	0.010	0.01	4.9E-01	-0.03	0.05	0.95	0.05	12	0.973**	2.5E-09	0.03	0.23	14
1995	0.472*	2.53	2.7E-02	-0.10	1.04	-0.284**	-0.28	5.2E-04	-0.47	-0.10	0.35	0.17	12	0.589*	1.3E-02	0.21	0.25	14
1996	0.841*	2.82	1.5E-02	-0.06	1.74	-0.063	-0.06	2.0E-01	-0.20	0.08	0.38	0.15	13	0.616**	7.3E-03	0.09	0.13	15
1997	0.192	1.06	3.1E-01	-0.35	0.74	-0.042	-0.04	4.7E-01	-0.21	0.13	0.08	0.12	13	0.282	1.5E-01	0.26	0.18	15
1998	0.520	1.73	1.1E-01	-0.38	1.42	-0.135	-0.13	6.5E-02	-0.34	0.07	0.19	0.25	13	0.433	5.3E-02	0.06	0.22	15
1999	0.293*	2.40	3.1E-02	-0.07	0.66	-0.183**	-0.18	8.3E-04	-0.31	-0.05	0.29	0.12	14	0.54*	1.5E-02	0.26	0.25	16
2000	0.485*	2.41	3.0E-02	-0.11	1.08	-0.221*	-0.22	1.2E-02	-0.45	0.01	0.29	0.27	14	0.541*	1.5E-02	0.18	0.35	16
2001	0.425*	2.59	2.1E-02	-0.06	0.91	-0.229**	-0.23	2.8E-04	-0.37	-0.09	0.32	0.16	14	0.569*	1.1E-02	-0.16	0.25	16
2002	0.721**	9.73	1.3E-07	0.50	0.94	-0.146**	-0.15	1.1E-03	-0.25	-0.04	0.87	0.09	14	0.933**	6.5E-08	-0.37	0.32	16
2003	1.230	2.05	6.0E-02	-0.56	3.02	-0.804**	-0.80	4.4E-04	-1.33	-0.28	0.23	0.43	14	0.48*	3.0E-02	0.23	0.18	16
2004	-0.581	-0.83	4.2E-01	-2.66	1.50	-0.040	-0.04	6.4E-01	-0.29	0.21	0.05	0.23	14	-0.217	2.1E-01	0.09	0.09	16
2005	0.194	2.14	5.0E-02	-0.08	0.46	-0.026	-0.03	3.4E-01	-0.10	0.05	0.25	0.07	14	0.497*	2.5E-02	0.20	0.21	16
2006	0.635	1.99	6.7E-02	-0.32	1.59	-0.035	-0.03	5.6E-01	-0.21	0.14	0.22	0.12	14	0.469*	3.3E-02	0.15	0.10	16
2007	0.651**	10.81	3.5E-08	0.47	0.83	-0.063**	-0.06	2.0E-03	-0.11	-0.01	0.89	0.06	14	0.945**	1.8E-08	-0.08	0.27	16
2008	0.993**	16.16	1.9E-10	0.81	1.18	-0.098	-0.10	9.3E-02	-0.26	0.06	0.95	0.15	14	0.974**	9.4E-11	-0.64	0.64	16

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The sample consists of a maximum of 16 observations per yearly regression from 16 firms in the LSE consisting of the 5 banks and 11 banking related firms that adopted the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table P.6 (Continued)

PANEL B

The Control Group Cross-Sectional Regression Analysis for Market Price Returns and Historical Value-at-Risk Actual

Year	Regression													Correlation		Descriptive Statistics		*Obs.*
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	0.353	1.89	9.2E-02	-0.25	0.96	-0.065*	-0.07	4.3E-02	-0.16	0.02	0.28	0.07	9	0.532*	4.6E-02	-0.09	0.12	11
1995	1.223*	3.19	1.1E-02	-0.02	2.47	-0.313**	-0.31	9.0E-05	-0.47	-0.16	0.53	0.08	9	0.728**	5.5E-03	0.10	0.07	11
1996	0.758**	8.64	6.0E-06	0.48	1.04	-0.046*	-0.05	1.1E-02	-0.09	0.00	0.88	0.05	10	0.939**	3.0E-06	0.02	0.17	12
1997	1.002**	5.10	4.7E-04	0.38	1.62	-0.152**	-0.15	1.8E-03	-0.27	-0.04	0.72	0.10	10	0.85**	2.3E-04	0.10	0.16	12
1998	0.749**	4.22	1.8E-03	0.19	1.31	-0.161**	-0.16	4.7E-03	-0.30	-0.02	0.64	0.14	10	0.801**	8.8E-04	-0.11	0.24	12
1999	-0.078	-0.35	7.3E-01	-0.78	0.62	-0.144	-0.14	2.2E-01	-0.49	0.20	0.01	0.26	10	-0.112	3.7E-01	0.35	0.36	12
2000	0.873**	11.09	6.1E-07	0.62	1.12	-0.030	-0.03	1.5E-01	-0.09	0.03	0.92	0.07	10	0.962**	3.1E-07	0.02	0.26	12
2001	0.268	0.52	6.1E-01	-1.36	1.90	-0.254*	-0.25	3.2E-02	-0.58	0.07	0.03	0.14	10	0.162	3.1E-01	-0.18	0.08	12
2002	0.223	1.84	9.6E-02	-0.16	0.61	-0.314**	-0.31	2.4E-05	-0.45	-0.18	0.25	0.07	10	0.502*	4.8E-02	-0.31	0.18	12
2003	-0.092	-0.44	6.7E-01	-0.75	0.57	-0.434**	-0.43	1.6E-05	-0.61	-0.26	0.02	0.09	10	-0.138	3.3E-01	0.24	0.13	12
2004	0.801**	6.89	4.2E-05	0.43	1.17	-0.106**	-0.11	9.7E-05	-0.16	-0.05	0.83	0.03	10	0.909**	2.1E-05	0.12	0.08	12
2005	-0.272	-1.54	1.5E-01	-0.83	0.29	0.147*	0.15	3.9E-02	-0.05	0.34	0.19	0.07	10	-0.438	7.7E-02	0.33	0.12	12
2006	0.878**	14.46	5.0E-08	0.69	1.07	-0.028*	-0.03	3.8E-02	-0.07	0.01	0.95	0.04	10	0.977**	2.5E-08	0.09	0.18	12
2007	0.578**	6.51	6.8E-05	0.30	0.86	-0.062*	-0.06	1.4E-02	-0.13	0.00	0.81	0.07	10	0.9**	3.4E-05	0.02	0.24	12
2008	0.695**	3.93	2.8E-03	0.13	1.26	-0.172	-0.17	6.3E-02	-0.43	0.09	0.61	0.12	10	0.779**	1.4E-03	-0.42	0.20	12

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The Control group consists of a maximum of 12 observations per yearly regression from 12 banking related firms in the LSE that did not adopt the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table P.6 (Continued)

PANEL C

The Primary Sample Cross-Sectional Regression Analysis for Market Price Returns and Historical Value-at-Risk Actual

Year	Regression													Correlation		Descriptive Statistics		*Obs.*
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	0.893**	11.38	7.6E-03	0.11	1.67	0.031	1.91	2.0E-01	-0.13	0.19	0.98	0.03	2	0.992**	3.8E-03	-0.06	0.23	4
1995	-0.160	-0.42	7.1E-01	-3.92	3.60	-0.170	-1.15	3.7E-01	-1.65	1.31	0.08	0.17	2	-0.286	3.6E-01	0.32	0.26	4
1996	0.403	1.37	3.1E-01	-2.53	3.34	0.025	0.35	7.6E-01	-0.69	0.74	0.48	0.05	2	0.695	1.5E-01	0.23	0.10	4
1997	0.341	0.84	4.9E-01	-3.67	4.36	-0.021	-0.16	8.9E-01	-1.28	1.24	0.26	0.18	2	0.512	2.4E-01	0.23	0.25	4
1998	-0.679	-0.35	7.6E-01	-19.76	18.40	-0.395	-1.72	2.3E-01	-2.67	1.88	0.06	0.44	2	-0.242	3.8E-01	-0.03	0.13	4
1999	0.254	1.18	3.2E-01	-1.01	1.51	-0.200	-2.22	1.1E-01	-0.73	0.33	0.32	0.12	3	0.562	1.6E-01	0.33	0.28	5
2000	0.104	0.13	9.0E-01	-4.54	4.74	-0.322	-2.59	8.1E-02	-1.05	0.40	0.01	0.22	3	0.076	4.5E-01	0.09	0.14	5
2001	1.252*	4.79	1.7E-02	-0.27	2.78	-0.122*	-3.65	3.5E-02	-0.32	0.07	0.88	0.07	3	0.94**	8.6E-03	-0.03	0.14	5
2002	0.514*	4.18	2.5E-02	-0.20	1.23	-0.186*	-4.89	1.6E-02	-0.41	0.04	0.85	0.04	3	0.924*	1.2E-02	-0.27	0.18	5
2003	1.464	1.82	1.7E-01	-3.23	6.16	-0.639*	-3.89	3.0E-02	-1.60	0.32	0.53	0.19	3	0.725	8.3E-02	0.18	0.12	5
2004	0.045	0.07	9.5E-01	-3.84	3.93	-0.048	-0.86	4.5E-01	-0.38	0.28	0.00	0.08	3	0.039	4.7E-01	0.07	0.06	5
2005	0.182	1.96	1.4E-01	-0.36	0.72	-0.022	-1.76	1.8E-01	-0.09	0.05	0.56	0.02	3	0.750	7.2E-02	0.09	0.12	5
2006	0.214	0.70	5.4E-01	-1.59	2.01	-0.009	-0.20	8.5E-01	-0.25	0.24	0.14	0.04	3	0.372	2.7E-01	0.12	0.07	5
2007	0.631*	4.81	1.7E-02	-0.14	1.40	-0.117*	-3.20	4.9E-02	-0.33	0.10	0.89	0.07	3	0.941**	8.6E-03	-0.17	0.25	5
2008	0.94**	13.59	8.6E-04	0.54	1.34	-0.076	-0.89	4.4E-01	-0.57	0.42	0.98	0.09	3	0.992**	4.3E-04	-1.07	0.68	5

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The sample consists of a maximum of 5 observations per yearly regression from 16 firms in the LSE consisting of the 5 banks and 11 banking related firms that adopted the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table P.6 (Continued)

PANEL D

The Secondary Sample Cross-Sectional Regression Analysis for Market Price Returns and Historical Value-at-Risk Actual

Year	Regression													Correlation		Descriptive Statistics		*Obs.*
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	0.93**	11.28	3.4E-06	0.65	1.21	-0.001	-0.05	9.6E-01	-0.06	0.06	0.94	0.06	8	0.97**	1.7E-06	0.07	0.23	10
1995	0.792**	5.10	9.3E-04	0.27	1.31	-0.301**	-6.66	1.6E-04	-0.45	-0.15	0.76	0.12	8	0.875**	4.6E-04	0.17	0.25	10
1996	1.052	2.00	7.6E-02	-0.65	2.76	-0.067	-1.20	2.6E-01	-0.25	0.11	0.31	0.17	9	0.556*	3.8E-02	0.04	0.10	11
1997	0.114	0.53	6.1E-01	-0.59	0.82	-0.041	-0.62	5.5E-01	-0.26	0.17	0.03	0.11	9	0.173	3.1E-01	0.27	0.16	11
1998	0.437**	3.53	6.4E-03	0.03	0.84	-0.047	-1.54	1.6E-01	-0.15	0.05	0.58	0.10	9	0.762**	3.2E-03	0.09	0.24	11
1999	0.344	2.08	6.7E-02	-0.19	0.88	-0.18**	-3.41	7.8E-03	-0.35	-0.01	0.32	0.13	9	0.57*	3.4E-02	0.23	0.24	11
2000	0.453	2.07	6.8E-02	-0.26	1.17	-0.151	-1.55	1.5E-01	-0.47	0.17	0.32	0.28	9	0.568*	3.4E-02	0.21	0.41	11
2001	0.240	1.34	2.1E-01	-0.34	0.82	-0.305**	-5.05	6.9E-04	-0.50	-0.11	0.17	0.15	9	0.409	1.1E-01	-0.22	0.27	11
2002	0.732**	7.80	2.7E-05	0.43	1.04	-0.149*	-2.92	1.7E-02	-0.31	0.02	0.87	0.11	9	0.933**	1.3E-05	-0.42	0.36	11
2003	1.401	1.88	9.2E-02	-1.02	3.82	-0.941**	-3.89	3.6E-03	-1.73	-0.16	0.28	0.49	9	0.532*	4.6E-02	0.26	0.21	11
2004	-0.621	-0.67	5.2E-01	-3.63	2.38	-0.052	-0.42	6.9E-01	-0.45	0.35	0.05	0.29	9	-0.219	2.6E-01	0.10	0.10	11
2005	0.200	1.57	1.5E-01	-0.21	0.61	-0.029	-0.67	5.2E-01	-0.17	0.11	0.21	0.09	9	0.463	7.6E-02	0.26	0.23	11
2006	0.657	1.52	1.6E-01	-0.75	2.06	-0.027	-0.32	7.6E-01	-0.30	0.25	0.20	0.14	9	0.452	8.1E-02	0.17	0.10	11
2007	0.613**	10.87	1.8E-06	0.43	0.80	-0.04*	-2.65	2.6E-02	-0.09	0.01	0.93	0.05	9	0.964**	8.9E-07	-0.03	0.28	11
2008	1.115**	12.50	5.4E-07	0.83	1.40	-0.080	-1.33	2.1E-01	-0.27	0.11	0.95	0.15	9	0.972**	2.7E-07	-0.44	0.53	11

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The sample consists of a maximum of 11 observations per yearly regression from 11 banking related firms in the LSE that adopted the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table P.7 Analysis for Market Price Returns and Historical Value-at-Risk Actual

Time Series Regression

Table P.7 Panel A to Panel D show the results for the time series regressions that test the market price returns and Historical Value-at-Risk Actual by applying the regression specified in equation (O.12). In this table, Panel A presents results for the Primary and Secondary sample; Panel B presents results for the Control group; Panel C presents results for the Primary sample; and, Panel D presents results for the Secondary sample.

Time Series Regression Table Description

The Table P.7 columns represent the following:

The Total Period column represents the time series regression results for the year range 1994 to 2008, with a single year represented by the number of days from 1st January to 31st December. The Sub-Periods column represents the time series regression results for the year range 1994 to 2004, and for 1994 to 2007, with a single year represented by the number of days from 1st January to 31st December.

Measure column represents the time series regression results for the total and sub-time periods and is represented by the data panels:
The *Regression* panel presents the coefficients and related statistics for the regression specified in equation (O.12) and follows the model:

$$V_{N,\mathrm{t}} = a + b\, dM_{N,t} + e_{N,t}$$

Where: $V_{N,t}$ is the Value-at-Risk (V_{t}) for N firms at time t, $dM_{N,t}$ is the log Market Price return (dM_t) for N firms at time t, and $e_{N,t}$ is the regression error term. The *Lower* and *Upper* are the corresponding coefficient levels predicted at a 99% confidence level.

The *Correlation* panel presents the correlation statistics for the relationship between the dependent and independent variables. The *Descriptive Statistics* panel presents for the variables tested, the average sample means calculated using equation (M.6); the standard deviation, *SD*, of sample means for the time series using equation (M.7); standard error of means, *SE*, for the time series. The *Observations* panel presents: *Firms (n)* (term *N* in the regression) that represents the average number of sample firms in the time series regression (for the Primary and Secondary sample, for the time period 1994 to 2004, the number of firms are rounded down); *Years (T)* represents the number of time series years; *Total (n* x *T)* represents the number of averaged pooled time series regression observations.

Table P.7 (Continued)

PANEL A

The Primary and Secondary Sample Time Series Regression Analysis for Market Price Returns and Historical Value-at-Risk Actual

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	0.613**	0.326	0.361
		t (b)	3.38	1.13	1.40
		p (b)	4.9E-03	2.9E-01	1.9E-01
		SE(b)	0.181	0.287	0.257
		Lower	0.067	-0.608	-0.425
		Upper	1.159	1.260	1.147
	Intercept	*a*	-0.191**	-0.188*	-0.16**
		t (a)	-4.26	-3.25	-3.23
		p (a)	9.4E-04	1.0E-02	7.2E-03
		SE(a)	0.045	0.058	0.050
		Lower	-0.327	-0.377	-0.311
		Upper	-0.056	8.2E-05	-0.009
	Model	R^2	0.468	0.125	0.141
		s(e)	0.172	0.177	0.167
		df(e)	13	9	12
Correlation		*r*	0.684**	0.353	0.375
		p(r)	2.5E-03	1.4E-01	9.3E-02
Descriptive Statistics		*M*	0.035	0.080	0.083
		SD (M)	0.254	0.194	0.180
		SE(M)	0.066	0.059	0.048
		V 95	-0.170	-0.162	-0.130
		SD (V 95)	0.228	0.179	0.173
		SE(V 95)	0.059	0.054	0.046
Observations		*Firms (n)*	16	15	16
		Years (T)	15	11	14
		Total (n x T)	233	169	217

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.
The sample consists of a maximum of 233 observations from 16 firms in the LSE consisting of the 5 banks and 11 banking related firms that adopted the IFRS standards in 2005. Observations are based on yearly averages calculated using daily levels from 1994 to 2008.
See main table notes for the regression model applied.
Regression coefficients and related statistics are calculated using OLS regression.

Table P.7 (Continued)

PANEL B

The Control Group Time Series Regression Analysis for Market Price Returns and Historical Value-at-Risk Actual

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	0.42*	0.165	0.291
		t (b)	2.16	0.62	1.24
		p (b)	5.0E-02	5.5E-01	2.4E-01
		SE(b)	0.194	0.266	0.236
		Lower	-0.165	-0.699	-0.429
		Upper	1.006	1.029	1.012
	Intercept	*a*	-0.165**	-0.181**	-0.149**
		t (a)	-4.03	-3.72	-3.40
		p (a)	1.4E-03	4.8E-03	5.3E-03
		SE(a)	0.041	0.049	0.044
		Lower	-0.288	-0.338	-0.283
		Upper	-0.041	-0.023	-0.015
	Model	R^2	0.264	0.041	0.113
		s(e)	0.158	0.159	0.158
		df(e)	13	9	12
Correlation		*r*	0.514*	0.203	0.336
		p(r)	2.5E-02	2.8E-01	1.2E-01
Descriptive Statistics		*M*	0.020	0.025	0.051
		SD (M)	0.217	0.190	0.186
		SE(M)	0.056	0.057	0.050
		V 95	-0.156	-0.177	-0.134
		SD (V 95)	0.177	0.155	0.161
		SE(V 95)	0.046	0.047	0.043
Observations		*Firms (n)*	12	12	12
		Years (T)	15	11	14
		Total (n x T)	178	130	166

Panel notes:

**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.

The control consists of a maximum of 178 observations from 12 banking related firms in the LSE that did not adopt the IFRS standards in 2005. Observations are based on yearly averages calculated using daily levels from 1994 to 2008.

See main table notes for the regression model applied.

Regression coefficients and the related statistics are calculated using OLS regression.

Table P.7 (Continued)

PANEL C

The Primary Sample Time Series Regression Analysis for Market Price Returns and Historical Value-at-Risk Actual

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	0.696**	0.314	0.322
		t (b)	5.11	1.05	1.26
		p (b)	2.0E-04	3.2E-01	2.3E-01
		SE(b)	0.136	0.299	0.256
		Lower	0.286	-0.659	-0.460
		Upper	1.106	1.287	1.104
	Intercept	*a*	-0.206**	-0.192*	-0.167**
		t (a)	-4.58	-3.20	-3.49
		p (a)	5.1E-04	1.1E-02	4.4E-03
		SE(a)	0.045	0.060	0.048
		Lower	-0.342	-0.387	-0.314
		Upper	-0.071	0.003	-0.021
	Model	R^2	0.668	0.109	0.116
		s(e)	0.174	0.174	0.163
		df(e)	13	9	12
Correlation		*r*	0.817**	0.330	0.341
		p(r)	1.0E-04	1.6E-01	1.2E-01
Descriptive Statistics		*M*	0.001	0.096	0.078
		SD (M)	0.342	0.184	0.177
		SE(M)	0.088	0.055	0.047
		V 95	-0.205	-0.162	-0.142
		SD (V 95)	0.291	0.175	0.167
		SE(V 95)	0.075	0.053	0.045
Observations		*Firms (n)*	5	5	5
		Years (T)	15	11	14
		Total (n x T)	70	51	64

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.
The sample consists of a maximum of 70 observations from the 5 banks in the LSE that adopted the IFRS standards in 2005. Observations are based on yearly averages calculated using daily levels from 1994 to 2008.
See main table notes for the regression model applied.
Regression coefficients and the related statistics are calculated using OLS regression.

Table P.7 (Continued)

PANEL D

The Secondary Sample Time Series Regression Analysis for Market Price Returns and Historical Value-at-Risk Actual

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	0.569*	0.388	0.429
		t (b)	2.65	1.30	1.62
		p (b)	2.0E-02	2.3E-01	1.3E-01
		SE(b)	0.215	0.299	0.265
		Lower	-0.077	-0.583	-0.380
		Upper	1.215	1.359	1.238
	Intercept	*a*	-0.184**	-0.192*	-0.162*
		t (a)	-3.71	-2.98	-2.94
		p (a)	2.6E-03	1.5E-02	1.2E-02
		SE(a)	0.050	0.064	0.055
		Lower	-0.333	-0.402	-0.331
		Upper	-0.034	0.017	0.006
	Model	R^2	0.351	0.158	0.179
		s(e)	0.187	0.201	0.189
		df(e)	13	9	12
Correlation		*r*	0.593**	0.397	0.423
		p(r)	1.0E-02	1.1E-01	6.6E-02
Descriptive Statistics		*M*	0.050	0.072	0.085
		SD (M)	0.233	0.213	0.197
		SE(M)	0.060	0.064	0.053
		V 95	-0.155	-0.164	-0.126
		SD (V 95)	0.224	0.208	0.200
		SE(V 95)	0.058	0.063	0.053
Observations		*Firms (n)*	11	11	11
		Years (T)	15	11	14
		Total (n x T)	163	119	152

Panel notes:

**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.

The sample consists of a maximum of 163 observations from 11 banking related firms in the LSE that adopted the IFRS standards in 2005. Observations are based on yearly averages calculated using daily levels from 1994 to 2008.

See main table notes for the regression model applied.

Regression coefficients and the related statistics are calculated using OLS regression.

Analysis

The Table P.6 cross-sectional regression slopes show that the samples and the control group market price return variable exhibits some statistically significant explanatory power to the Historical Value-at-Risk Actual variable at varying times both before and after the 2005 accounting change.

The Table P.7 time series regression slopes show that the samples and the control group market price return variable exhibits statistically significant explanatory power to the Historical Value-at-Risk Actual variable for the 1994 to 2008 time period. However, for the sub-time periods 1994 to 2004 and 1994 to 2007 statistical significance is not evident.

This suggests that the relationship between market price returns and Value-at-Risk became significant after 2007. Examining the regression slopes, the Primary and Secondary sample exhibit greater magnitude and significance when compared to the Control group. This reveals that the Primary and Secondary sample market price returns varied closely with Value-at-Risk levels after the 2005 accounting change than before when compared to the Control group.

P.6 Change in GDP Price Indices and Market Price Return

The regression analysis for the change in selected Gross Domestic Product (GDP) indices and the market price return is presented for the time range 1994 to 2008 in Table P.8. In these regressions, the market price return variable is tested as the dependent variable, and the change in the GDP sector indices All Production and Business Services are individually tested as the independent variable.

Table P.8 Time Series Regression Analysis for Change in GDP Price Indices and Market Price Return

Time Series Regression

Table P.8 Panels A to C show the results for the time series regressions that test the change in selected GDP sector indices and the market price return by applying the regression specified in equation (O.13). In this table, Panel A presents results for the Primary and Secondary sample; Panel B presents results for the Control group; and, Panel C presents results for the Primary sample.

Time Series Regression Table Description

The Table P.8 columns represent the following:

The GDP Index Sector column represents the samples and the control group result panels for the selected indices.

The Returns Time Periods column represents the following:
The Total Period column represents the time series regression results for the year range 1994 to 2008, with a single year represented by the 4 yearly quarters: January 1st to March 31st; April 1st to June 30th; July 1st to September 30th; and, October 1st to December 31st. The Sub-Periods column represents the time series regression results for the year range 1994 to 2004, and for 1994 to 2007, with a single year represented by the 4 yearly quarters: January 1st to March 31st; April 1st to June 30th; July 1st to September 30th; and, October 1st to December 31st.

The total and sub-period columns present the coefficients and related statistics for the regression specified in equation (O.13), and follows the model:

$$dM_{N,t} = a + b\, dGDP_t + e_{N,t}$$

Where: $dM_{N,t}$ is the log Market Price return ($M_{t-1,t}$) for N firms at time t, $dGDP_t$ is the change in the selected GDP index ($GDP_{t-1,t}$) at time t, and $e_{N,t}$ is the regression error term.

Table P.8 (Continued)

GDP Index Sector	Returns Time Periods											
	Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods	
	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007
	b			*t*			*p*			R^2		
PANEL A: GDP vs. Primary and Secondary Sample Return												
All Production	6.044**	5.007	3.713	3.504	1.655	1.344	0.004	0.132	0.204	0.486	0.233	0.131
Business Services	8.982**	4.943	5.194	3.166	1.247	1.504	0.007	0.244	0.158	0.435	0.147	0.159
PANEL B: GDP vs. Control Group Return												
All Production	4.128*	4.483	2.521	2.358	1.539	0.877	0.035	0.158	0.398	0.300	0.208	0.060
Business Services	5.889	1.889	3.117	2.067	0.470	0.852	0.059	0.649	0.411	0.247	0.024	0.057
PANEL C: GDP vs. Primary Sample Return												
All Production	8.7**	3.629	3.219	4.427	1.290	1.235	0.001	0.229	0.240	0.601	0.156	0.113
Business Services	10.581*	1.593	1.692	2.709	0.423	0.486	0.018	0.682	0.636	0.361	0.019	0.019

Table note: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels.

Analysis

The Table P.8 time series regression slopes show that the change in the GDP *All Production* sector index exhibits statistically significant explanatory power to the samples and the control group market price return variable for the time period 1994 to 2008. The Primary and Secondary sample slopes also show statistical significance for the change in the GDP *Business Services* sector index for the same time period.

Examining the significant regression slopes, the Primary and Secondary sample exhibits greater magnitude, statistical significance and model strength when compared to the Control group for both the GDP sector indices tested.

The results suggest that the GDP All Production and Business Services sectors reacted in relation to the Primary and Secondary sample market price returns after the 2005 accounting change compared to before.

P.7 Change in GDP Price Indices Value-at-Risk Actual and Historical Value-at-Risk Actual

The regression analysis for the selected GDP indices Historical Value-at-Risk Actual and market price return Historical Value-at-Risk Actual is presented for the time range 1994 to 2008 in Table P.9. In these regressions, the Historical Value-at-Risk Actual variable is tested as the dependent variable, and the GDP indices Value-at-Risk Actual for sector indices All Production and Business Services are individually tested as the independent variable.

Table P.9 Time Series Regression Analysis for GDP Indices Historical Value-at-Risk Actual and Historical Value-at-Risk Actual

Time Series Regression

Table P.9 Panels A to C show the results for the time series regressions that test the change in selected GDP indices Value-at-Risk Actual and Historical Value-at-Risk Actual by applying the regression specified in equation (O.14). In this table, Panel A presents results for the Primary and Secondary sample; Panel B presents results for the Control group; and, Panel C presents results for the Primary sample.

Time Series Regression Table Description

The Table P.9 columns represent the following:

The GDP Index Sector column represents the samples and the control group result panels for the selected indices.

The V Time Periods column represents the following:
The Total Period column represents the time series regression results for the year range 1994 to 2008, with a single year represented by the 4 yearly quarters: January 1st to March 31st; April 1st to June 30th; July 1st to September 30th; and, October 1st to December 31st. The Sub-Periods column represents the time series regression results for the year range 1994 to 2004, and for 1994 to 2007, with a single year represented by the 4 yearly quarters: January 1st to March 31st; April 1st to June 30th; July 1st to September 30th; and, October 1st to December 31st.

The total and sub-period columns present the coefficients and related statistics for the regression specified in equation (O.14), and follows the model:

$$V_{N,t} = a + b\,VGDP_t + e_{N,t}$$

Where: $V_{N,t}$ is the Value-at-Risk (V_t) for N firms at time t, $VGDP_t$ is the Value-at-Risk for the selected GDP index at time t, and $e_{N,t}$ is the regression error term.

Table P.9 (Continued)

GDP Index Sector	V Time Periods											
	Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods	
	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007
	b			*t*			*p*			R^2		
PANEL A: GDP *V* vs. Primary and Secondary Sample *V*												
All Production	6.398**	7.054**	4.846	4.207	3.618	2.055	0.001	0.006	0.062	0.577	0.593	0.260
Business Services	9.708**	6.502	6.864*	3.889	2.206	2.581	0.002	0.055	0.024	0.538	0.351	0.357
PANEL B: GDP *V* vs. Control Group *V*												
All Production	3.706*	5.356*	3.100	2.472	2.764	1.299	0.028	0.022	0.218	0.320	0.459	0.123
Business Services	6.628**	4.735	5.572	3.032	1.733	2.120	0.010	0.117	0.056	0.414	0.250	0.272
PANEL C: GDP *V* vs. Primary Sample *V*												
All Production	7.728**	3.557	2.085	0.002	0.213	0.420	0.002	0.213	0.420	0.520	0.167	0.055
Business Services	8.965*	1.766	1.968	2.268	0.515	0.644	0.041	0.619	0.532	0.283	0.029	0.033

Table note: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels.

Analysis

The Table P.9 time series regression slopes show that the GDP All Production and Business Services sector indices Historical Value-at-Risk Actual exhibit statistically significant explanatory power to the samples and the control group Historical Value-at-Risk Actual for the time periods 1994 to 2008 and 1994 to 2004. The Primary and Secondary sample slopes also show statistical significance for the GDP *Business Services* sector index Historical Value-at-Risk Actual for the time period 1994 to 2007.

Examining the significant regression slopes, the Primary and Secondary sample exhibits greater magnitude, statistical significance, and model strength when compared to the Control group slope for the two GDP sector indices tested.

The results suggest that the All Production and Business Services sector indices Historical Value-at-Risk Actual reacted in relation to the Primary and Secondary sample after the 2005 accounting change compared to before, than the Control group reactions.

The regression slopes also show that the GDP All Production sector index Historical Value-at-Risk Actual reacted in relation to the samples and the control group Historical Value-at-Risk Actual before and after the 2005 accounting change. This reveals that any correlation between the GDP All Production sector index and *the samples and the control group* Historical Value-at-Risk Actuals was also evident before 2005. However, this relationship is not evident with the Primary sample that exhibits a stronger relationship to the selected GDP indices Historical Value-at-Risk Actuals after the 2005 accounting change.

P.8 Change in Stock Indices and Market Price Return

The regression analysis for the change in key LSE stock indices and selected world stock indices, presented in Table P.10, and the market price return is presented for the time range 1994 to 2008 in Table P.11. In these regressions, the market price return variable is tested as the dependent variable, and the change in the key LSE and selected stock indices variables are individually tested as the independent variable.

Table P.10 Stock Indices Selected for Testing

Index ID[a]	Equity Index Name[b]	Region[c]
FTSE 350	FTSE 350 PRICE INDEX	UK
FTSE 100	FTSE 100 PRICE INDEX	UK
FTSE ALL	FTSE ALL SHARE PRICE INDEX	UK
DJIA	DOW JONES INDUSTRIALS	USA
NIKKEI	NIKKEI 225 STOCK AVERAGE	Japan
S&P 500	S&P 500 COMPOSITE	USA
NASDAQ	NASDAQ COMPOSITE	USA
CAC	FRANCE CAC 40	France
DAX	DAX 30 PERFORMANCE	Germany
RUSSIA	RUSSIA RTS INDEX	Russia
HANG SENG	HANG SENG PRICE INDEX	Hong Kong, China
COLOMBO	COLOMBO SE ALL SHARE	Sri Lanka
AUSTRALIA	AUSTRALIA S&P/ASX 200	Australia
CANADA	CANADA S&P/TSX COMPOSITE	Canada
BRAZIL	FTSE BRAZIL	Brazil
SOUTH AFRICA	MSCI SOUTH AFRICA	South Africa
FTSE WORLD	FTSE ALL WORLD $	Global

Table notes:
[a] The equity stock index identifier that is applied in Table P.11 and Table P.12 to identify the indices.
[b] The general price index name from the Thomson Reuters Datastream financial data database product.
[c] The region that most describes the geographical area for the index constituents.

Table P.11 Time Series Regression Analysis for Change in Equity Stock Indices and Market Price Return

Time Series Regression

Table P.11 Panels A to C show the results for the time series regressions that test the change in selected stock indices and the market price return by applying the regression specified in equation (O.13). In this table, Panel A presents results for the Primary and Secondary sample; Panel B presents the results for the Control group; and, Panel C presents the results for the Secondary sample.

Time Series Regression Table Description

The Table P.11 columns represent the following:

The Equity Stock Index Description column represents the samples and the control group result panels for the selected indices.

The Returns Time Periods column represents the following:
The Total Period column represents the time series regression results for the year range 1994 to 2008, with a single year represented by the number of days from 1st January to 31st December. The Sub-Periods column represents the time series regression results for the year range 1994 to 2004, and for 1994 to 2007, with a single year represented by the number of days from 1st January to 31st December.

The total and sub-period columns present the coefficients and related statistics for the regression specified in equation (O.13), and follows the model:

$$dM_{N,t} = a + b\ dSTOCK\_INDEX_t + e_{N,t}$$

Where: $dM_{N,t}$ is the log Market Price return ($M_{t-1,1}$) for N firms at time t, $dSTOCK\_INDEX_t$ is the change in the selected stock market index ($STOCK\_INDEX_{t-1,t}$) at time t, and $e_{N,t}$ is the regression error term.

Table P.11 (Continued)

PANEL A: Time Series Regression Analysis of the Primary and Secondary Sample for Change in Equity Stock Indices and Market Price Return

Equity Stock Index Description	Returns Time Periods											
	Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods	
	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007
	b			*t*			*p*			R^2		
FTSE 350	1.418**	1.122**	1.123**	7.288	5.522	5.943	6.1E-06	3.7E-04	6.8E-05	0.803	0.772	0.746
FTSE 100	1.409**	1.091**	1.096**	6.588	5.083	5.396	1.7E-05	6.6E-04	1.6E-04	0.769	0.742	0.708
FTSE ALL	1.42**	1.13**	1.131**	7.552	5.735	6.180	4.2E-06	2.8E-04	4.7E-05	0.814	0.785	0.761
DJIA	1.271**	0.956*	0.922**	5.110	3.083	3.083	2.0E-04	0.013	9.5E-03	0.668	0.514	0.442
NIKKEI	0.725**	0.423	0.426	3.037	1.442	1.916	9.5E-03	0.180	0.080	0.415	0.188	0.234
S&P 500	1.112**	0.833**	0.845**	5.839	3.680	3.888	5.8E-05	5.1E-03	2.2E-03	0.724	0.601	0.557
NASDAQ	0.532**	0.357*	0.355*	3.086	2.391	2.502	8.7E-03	0.040	0.028	0.423	0.388	0.343
CAC	0.929**	0.697**	0.715**	6.248	3.994	4.604	3.0E-05	3.1E-03	6.1E-04	0.750	0.639	0.639
DAX	0.8**	0.643**	0.608**	5.754	5.650	4.994	6.7E-05	3.1E-04	3.1E-04	0.718	0.780	0.675
RUSSIA	0.154	0.031	0.041	1.735	0.328	0.505	0.110	0.750	0.620	0.215	0.015	0.025
HANG SENG	0.57**	0.391	0.309	3.105	1.896	1.636	8.4E-03	0.090	0.130	0.426	0.285	0.182
COLOMBO	0.152	-0.391	-0.226	0.607	-1.804	-1.153	0.550	0.100	0.270	0.028	0.266	0.100
AUSTRALIA	1.241**	1.042	0.971*	5.059	2.212	2.364	2.2E-04	0.054	0.036	0.663	0.352	0.318
CANADA	0.43*	0.253	0.215	7.078	4.247	4.368	8.3E-06	2.2E-03	9.2E-04	0.794	0.667	0.614
BRAZIL	0.43*	0.253	0.215	2.367	1.379	1.305	0.036	0.210	0.220	0.318	0.192	0.134
SOUTH AFRICA	0.609	0.250	0.286	1.783	0.693	1.026	0.098	0.510	0.330	0.196	0.051	0.081
FTSE WORLD	1.119**	0.92**	0.913**	6.270	3.462	3.601	2.9E-05	7.1E-03	3.6E-03	0.751	0.571	0.519

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels.

Table P.11 (Continued)

PANEL B: Time Series Regression Analysis of the Control Group for Change in Equity Stock Indices and Market Price Return

Equity Stock Index Description	Returns Time Periods											
	Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods	
	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007
	b			*t*			*p*			R^2		
FTSE 350	1.184**	1.023**	1.102**	6.619	4.314	5.017	1.7E-05	1.9E-03	3.0E-04	0.771	0.674	0.677
FTSE 100	1.153**	0.954**	1.039**	5.638	3.638	4.245	8.1E-05	5.4E-03	1.1E-03	0.710	0.595	0.600
FTSE ALL	1.195**	1.049**	1.125**	7.101	4.689	5.405	8.0E-06	1.1E-03	1.6E-04	0.795	0.710	0.709
DJIA	0.926**	0.866*	0.761*	3.524	2.677	2.181	3.7E-03	0.025	0.050	0.489	0.443	0.284
NIKKEI	0.797**	0.679*	0.701**	5.405	3.038	4.217	1.2E-04	0.014	1.2E-03	0.692	0.506	0.597
S&P 500	0.803**	0.691*	0.671*	3.751	2.628	2.437	2.4E-03	0.027	0.031	0.520	0.434	0.331
NASDAQ	0.476**	0.386*	0.381*	3.365	2.857	2.671	5.1E-03	0.019	0.020	0.466	0.476	0.373
CAC	0.759**	0.636**	0.691**	5.370	3.378	3.920	1.3E-04	8.1E-03	2.0E-03	0.689	0.559	0.562
DAX	0.675**	0.568**	0.597**	5.581	3.982	4.359	8.9E-05	3.2E-03	9.3E-04	0.706	0.638	0.613
RUSSIA	0.17*	0.099	0.117	2.466	1.166	1.516	0.031	0.280	0.160	0.356	0.163	0.187
HANG SENG	0.548**	0.505*	0.457*	3.924	3.011	2.694	1.7E-03	0.015	0.020	0.542	0.502	0.377
COLOMBO	0.180	-0.155	-0.044	0.853	-0.643	-0.208	0.410	0.540	0.840	0.053	0.044	0.004
AUSTRALIA	1.027**	1.159*	1.217**	4.663	2.754	3.265	4.4E-04	0.022	6.8E-03	0.626	0.457	0.470
CANADA	0.504**	0.424**	0.422**	8.382	5.334	6.621	1.3E-06	4.7E-04	2.5E-05	0.844	0.760	0.785
BRAZIL	0.504**	0.424**	0.422**	4.390	3.377	3.368	8.8E-04	9.7E-03	6.3E-03	0.616	0.588	0.508
SOUTH AFRICA	0.751**	0.502	0.591*	3.017	1.571	2.402	9.9E-03	0.150	0.033	0.412	0.215	0.325
FTSE WORLD	0.899**	0.901**	0.938**	5.121	3.490	3.581	2.0E-04	6.8E-03	3.8E-03	0.669	0.575	0.517

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels.

Table P.11 (Continued)

PANEL C: Time Series Regression Analysis of the Primary Sample for Change in Equity Stock Indices and Market Price Return

Equity Stock Index Description	Returns Time Periods											
	Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods	
	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007
	b			*t*			*p*			R^2		
FTSE 350	1.708**	1.045**	0.988**	4.852	5.177	4.263	3.2E-04	5.8E-04	1.1E-03	0.644	0.749	0.602
FTSE 100	1.686**	1.008**	0.955**	4.499	4.655	3.918	6.0E-04	1.2E-03	2.0E-03	0.609	0.707	0.561
FTSE ALL	1.715**	1.058**	1.001**	4.983	5.467	4.437	2.5E-04	4.0E-04	8.1E-04	0.656	0.769	0.621
DJIA	1.772**	1.027**	1.034**	5.755	4.200	4.069	6.7E-05	2.3E-03	1.6E-03	0.718	0.662	0.580
NIKKEI	0.916*	0.438	0.363	2.742	1.615	1.609	0.017	0.140	0.130	0.366	0.225	0.177
S&P 500	1.439**	0.774**	0.807**	5.134	3.517	3.681	1.9E-04	6.5E-03	3.1E-03	0.670	0.579	0.530
NASDAQ	0.681*	0.367*	0.368*	2.836	2.761	2.734	0.014	0.022	0.018	0.382	0.459	0.384
CAC	1.112**	0.595*	0.587**	4.357	3.122	3.120	7.8E-04	0.012	8.9E-03	0.593	0.520	0.448
DAX	0.898**	0.549**	0.472*	3.610	3.960	2.969	3.2E-03	3.3E-03	0.012	0.501	0.635	0.423
RUSSIA	0.274*	0.104	0.102	2.632	1.452	1.520	0.023	0.190	0.160	0.386	0.232	0.188
HANG SENG	0.794**	0.458*	0.322	3.306	2.648	1.769	5.7E-03	0.027	0.100	0.457	0.438	0.207
COLOMBO	0.358	-0.350	-0.211	1.095	-1.675	-1.092	0.290	1.3E-01	0.300	0.084	0.238	0.090
AUSTRALIA	1.766**	1.191*	0.959*	6.128	3.083	2.392	3.6E-05	0.013	0.034	0.743	0.514	0.323
CANADA	0.598*	0.309	0.228	6.179	5.648	3.786	3.3E-05	3.1E-04	2.6E-03	0.746	0.780	0.544
BRAZIL	0.598*	0.309	0.228	2.496	2.046	1.468	0.028	0.075	0.170	0.342	0.344	0.164
SOUTH AFRICA	0.791	0.343	0.247	1.707	1.036	0.896	0.110	0.330	0.390	0.183	0.107	0.063
FTSE WORLD	1.434**	0.778*	0.73*	5.292	2.747	2.520	1.5E-04	0.023	0.027	0.683	0.456	0.346

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels.

Analysis

The Table P.11 time series regression slopes show that the change in the selected equity stock indices generally exhibit statistically significant explanatory power to the samples and the control group market price return variable for the three time periods tested. Examining the significant regression slopes, the samples and the control group exhibit greater magnitude, and marginally higher significance for the time period 1994 to 2008 than for the time periods 1994 to 2004 and 1994 to 2007. This suggests that the change in the selected indices exhibited a smaller change in relation to the samples and the control group market price return variable after the 2005 accounting change compared to before.

P.9 Stock Indices Value-at-Risk Actual and Historical Value-at-Risk Actual

The regression analysis for key LSE stock indices and selected world stock indices Historical Value-at-Risk Actual and market price return Historical Value-at-Risk Actual is presented for the time range 1994 to 2008 in Table P.12. In the regression analysis, the Historical Value-at-Risk Actual variable is tested as the dependent variable, and the key LSE and selected stock indices Value-at-Risk Actual variables are individually tested as the independent variable.

Table P.12 Time Series Regression Analysis for Equity Stock Indices Historical Value-at-Risk Actual and Historical Value-at-Risk Actual

Time Series Regression

Table P.12 Panels A to C show the results for the time series regressions that test the key LSE and selected stock indices Value-at-Risk Actual and the Historical Value-at-Risk Actual by applying the regression specified in equation (O.14). In this table, Panel A presents results for the Primary and Secondary sample; Panel B presents results for the Control group; and, Panel C presents results for the Primary sample.

Time Series Regression Table Description

The Table P.12 columns represent the following:

The Equity Stock Index Description column represents the samples and the control group result panels for the selected indices.

The V Time Periods column represents the following:
The Total Period column represents the time series regression results for the year range 1994 to 2008, with a single year represented by the number of days from 1st January to 31st December. The Sub-Periods column represents the time series regression results for the year range 1994 to 2004, and for 1994 to 2007, with a single year represented by the number of days from 1st January to 31st December.

The total and sub-period columns present the coefficients and related statistics for the regression specified in equation (O.14), and follows the model:

$$V_{N,t} = a + b\, VSTOCK\_INDEX_t + e_{N,t}$$

Where: $V_{N,t}$ is the Value-at-Risk (V_t) for N firms at time t, $VSTOCK\_INDEX_t$ is the Value-at-Risk for the selected stock market index at time t, and $e_{N,t}$ is the regression error term.

Table P.12 (Continued)

PANEL A: Time Series Regression Analysis of the Primary and Secondary Sample for Equity Stock Indices Value-at-Risk Actual and Historical Value-at-Risk Actual

Equity Stock Index Description	*V* Time Periods											
	Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods	
	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007
	b			*t*			*p*			R^2		
FTSE 350	1.193**	1.032**	1.036**	9.777	6.334	7.871	2.3E-07	1.4E-04	4.4E-06	0.880	0.817	0.838
FTSE 100	1.219**	1.037**	1.048**	9.279	6.249	7.628	4.3E-07	1.5E-04	6.1E-06	0.869	0.813	0.829
FTSE ALL	1.192**	1.035**	1.038**	10.015	6.469	8.068	1.8E-07	1.2E-04	3.4E-06	0.885	0.823	0.844
DJIA	1.253**	1.138**	1.141**	8.233	6.659	5.512	1.6E-06	9.3E-05	1.3E-04	0.839	0.831	0.717
NIKKEI	1.01**	0.841*	0.829**	6.067	3.112	4.193	4.0E-05	0.012	1.2E-03	0.739	0.518	0.594
S&P 500	1.045**	0.888**	0.93**	8.307	5.674	5.736	1.5E-06	3.0E-04	9.4E-05	0.841	0.782	0.733
NASDAQ	0.582**	0.404*	0.431**	3.736	2.683	3.085	2.5E-03	0.025	9.5E-03	0.518	0.444	0.442
CAC	0.792**	0.607**	0.642**	6.283	4.274	5.272	2.8E-05	2.1E-03	2.0E-04	0.752	0.670	0.698
DAX	0.685**	0.566**	0.566**	6.959	7.825	8.013	9.9E-06	2.6E-05	3.7E-06	0.788	0.872	0.843
RUSSIA	0.050	-0.042	-0.005	0.635	-0.615	-0.075	0.540	0.560	0.940	0.039	0.059	0.001
HANG SENG	0.489*	0.243	0.287	2.763	1.029	1.610	0.016	0.330	0.130	0.370	0.105	0.178
COLOMBO	0.103	-0.267	-0.112	0.431	-1.267	-0.582	0.673	0.237	0.571	0.014	0.151	0.027
AUSTRALIA	1.053**	1.117	0.995*	5.259	2.179	2.880	2.2E-04	0.054	0.036	0.680	0.345	0.409
CANADA	0.961**	0.68**	0.738**	4.857	2.451	3.216	8.3E-06	2.2E-03	9.2E-04	0.645	0.400	0.463
BRAZIL	0.407*	0.081	0.200	2.047	0.337	1.041	0.036	0.210	0.220	0.276	0.016	0.098
SOUTH AFRICA	0.787	0.513	0.554	3.214	1.460	2.471	0.098	0.510	0.330	0.463	0.210	0.357
FTSE WORLD	1.002**	0.995**	1.005**	9.443	5.335	6.167	1.3E-06	1.1E-03	1.1E-04	0.890	0.803	0.792

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels.

Table P.12 (Continued)

PANEL B: Time Series Regression Analysis of the Control Group for Equity Stock Indices Value-at-Risk Actual and Historical Value-at-Risk Actual

Equity Stock Index Description	*V* Time Periods											
	Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods	
	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007
	b			*t*			*p*			R^2		
FTSE 350	1.184**	1.023**	1.102**	6.619	4.314	5.017	1.7E-05	1.9E-03	3.0E-04	0.771	0.674	0.677
FTSE 100	1.153**	0.954**	1.039**	5.638	3.638	4.245	8.1E-05	5.4E-03	1.1E-03	0.710	0.595	0.600
FTSE ALL	1.195**	1.049**	1.125**	7.101	4.689	5.405	8.0E-06	1.1E-03	1.6E-04	0.795	0.710	0.709
DJIA	0.926**	0.866*	0.761*	3.524	2.677	2.181	3.7E-03	0.025	0.050	0.489	0.443	0.284
NIKKEI	0.797**	0.679*	0.701**	5.405	3.038	4.217	1.2E-04	0.014	1.2E-03	0.692	0.506	0.597
S&P 500	0.803**	0.691*	0.671*	3.751	2.628	2.437	2.4E-03	0.027	0.031	0.520	0.434	0.331
NASDAQ	0.476**	0.386*	0.381*	3.365	2.857	2.671	5.1E-03	0.019	0.020	0.466	0.476	0.373
CAC	0.759**	0.636**	0.691**	5.370	3.378	3.920	1.3E-04	8.1E-03	2.0E-03	0.689	0.559	0.562
DAX	0.675**	0.568**	0.597**	5.581	3.982	4.359	8.9E-05	3.2E-03	9.3E-04	0.706	0.638	0.613
RUSSIA	0.17*	0.099	0.117	2.466	1.166	1.516	0.031	0.280	0.160	0.356	0.163	0.187
HANG SENG	0.548**	0.505*	0.457*	3.924	3.011	2.694	1.7E-03	0.015	0.020	0.542	0.502	0.377
COLOMBO	0.180	-0.155	-0.044	0.853	-0.643	-0.208	0.410	0.540	0.840	0.053	0.044	0.004
AUSTRALIA	1.027**	1.159*	1.217**	4.663	2.754	3.265	4.4E-04	0.022	6.8E-03	0.626	0.457	0.470
CANADA	0.504**	0.424**	0.422**	8.382	5.334	6.621	1.3E-06	4.7E-04	2.5E-05	0.844	0.760	0.785
BRAZIL	0.504**	0.424**	0.422**	4.390	3.377	3.368	8.8E-04	9.7E-03	6.3E-03	0.616	0.588	0.508
SOUTH AFRICA	0.751**	0.502	0.591*	3.017	1.571	2.402	9.9E-03	0.150	0.033	0.412	0.215	0.325
FTSE WORLD	0.899**	0.901**	0.938**	5.121	3.490	3.581	2.0E-04	6.8E-03	3.8E-03	0.669	0.575	0.517

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels.

Table P.12 (Continued)

PANEL C: Time Series Regression Analysis of the Primary Sample for Equity Stock Indices Value-at-Risk Actual and Historical Value-at-Risk Actual

Equity Stock Index Description	*V* Time Periods											
	Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods	
	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007
	b			*t*			*p*			R^2		
FTSE 350	1.708**	1.045**	0.988**	4.852	5.177	4.263	3.2E-04	5.8E-04	1.1E-03	0.644	0.749	0.602
FTSE 100	1.686**	1.008**	0.955**	4.499	4.655	3.918	6.0E-04	1.2E-03	2.0E-03	0.609	0.707	0.561
FTSE ALL	1.715**	1.058**	1.001**	4.983	5.467	4.437	2.5E-04	4.0E-04	8.1E-04	0.656	0.769	0.621
DJIA	1.772**	1.027**	1.034**	5.755	4.200	4.069	6.7E-05	2.3E-03	1.6E-03	0.718	0.662	0.580
NIKKEI	0.916*	0.438	0.363	2.742	1.615	1.609	0.017	0.140	0.130	0.366	0.225	0.177
S&P 500	1.439**	0.774**	0.807**	5.134	3.517	3.681	1.9E-04	6.5E-03	3.1E-03	0.670	0.579	0.530
NASDAQ	0.681*	0.367*	0.368*	2.836	2.761	2.734	0.014	0.022	0.018	0.382	0.459	0.384
CAC	1.112**	0.595*	0.587**	4.357	3.122	3.120	7.8E-04	0.012	8.9E-03	0.593	0.520	0.448
DAX	0.898**	0.549**	0.472*	3.610	3.960	2.969	3.2E-03	3.3E-03	0.012	0.501	0.635	0.423
RUSSIA	0.274*	0.104	0.102	2.632	1.452	1.520	0.023	0.190	0.160	0.386	0.232	0.188
HANG SENG	0.794**	0.458*	0.322	3.306	2.648	1.769	5.7E-03	0.027	0.100	0.457	0.438	0.207
COLOMBO	0.358	-0.350	-0.211	1.095	-1.675	-1.092	0.290	0.130	0.300	0.084	0.238	0.090
AUSTRALIA	1.766**	1.191*	0.959*	6.128	3.083	2.392	3.6E-05	0.013	0.034	0.743	0.514	0.323
CANADA	0.598*	0.309	0.228	6.179	5.648	3.786	3.3E-05	3.1E-04	2.6E-03	0.746	0.780	0.544
BRAZIL	0.598*	0.309	0.228	2.496	2.046	1.468	0.028	0.075	0.170	0.342	0.344	0.164
SOUTH AFRICA	0.791	0.343	0.247	1.707	1.036	0.896	0.110	0.330	0.390	0.183	0.107	0.063
FTSE WORLD	1.434**	0.778*	0.73*	5.292	2.747	2.520	1.5E-04	0.023	0.027	0.683	0.456	0.346

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels.

Analysis

The Table P.12 time series regression slopes, similar to the market price returns results in Table P.11, show that the selected equity stock indices Historical Value-at-Risk Actual variable exhibits statistically significant explanatory power to the samples and the control group Historical Value-at-Risk Actual variable for the three time periods tested.

Examining the significant regression slopes, the samples and the control group exhibit greater magnitude, and marginally higher significance for the time period 1994 to 2008 than for the time periods 1994 to 2004 and 1994 to 2007.

This suggests that the Historical Value-at-Risk Actual for selected equity indices exhibited a smaller change in relation to the samples and the control group Historical Value-at-Risk Actual variable after the 2005 accounting change compared to before.

P.10 Change in LIBOR Rates and Market Price Return

The regression analysis for the change in selected London Interbank Offered Rates (LIBOR) and the market price return is presented for the time range 1994 to 2008 in Table P.13. In these regressions, the market price return variable is tested as the dependent variable, and the change in the selected LIBOR rates, for the range *over-night* (O/N) to 1 year, are individually tested as the independent variable.

Table P.13 Time Series Regression Analysis for Change in LIBOR Rates and Market Price Return

Time Series Regression

Table P.13 Panels A to C show the results for the time series regressions that test the change in selected LIBOR rates and the market price return by applying the regression specified in equation (O.13). In this table, Panel A presents results for the Primary and Secondary sample; Panel B presents results for the Control group; and, Panel C presents results for the Primary sample.

Time Series Regression Table Description

The Table P.13 columns represent the following:

The LIBOR Rate column represents the samples and the control group result panels for the selected rates.

The Rates and Returns Time Periods column represents the following:
The Total Period column represents the time series regression results for the year range 1994 to 2008, with a single year represented by the number of days from 1st January to 31st December.
The Sub-Periods column represents the time series regression results for the year range 1994 to 2004, and for 1994 to 2007, with a single year represented by the number of days from 1st January to 31st December.

The total and sub-period columns present the coefficients and related statistics for the regression specified in equation (O.13), and follows the model:

$$dM_{N,t} = a + b\ dLIBOR_t + e_{N,t}$$

Where: $dM_{N,t}$ is the log Market Price return ($M_{t-1,t}$) for N firms at time t, $dLIBOR_t$ is the change in the selected LIBOR rate ($LIBOR_{t-1,t}$) at time t, and $e_{N,t}$ is the regression error term.

Table P.13 (Continued)

LIBOR Rate	Rates and Returns Time Periods											
	Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods	
	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007
	b			*t*			*p*			R^2		
PANEL A: LIBOR Rates vs. Primary and Secondary Sample Return												
Over Night	0.451**	0.240	0.188	3.167	0.706	0.614	7.4E-03	0.500	0.550	0.435	0.052	0.030
1 Month	0.645**	0.667	0.339	3.217	1.727	1.091	6.7E-03	0.120	0.300	0.443	0.249	0.090
3 Months	0.716*	0.667	0.370	2.806	1.933	1.257	0.015	0.085	0.230	0.377	0.293	0.116
6 Months	0.7*	0.663	0.335	2.419	1.843	1.105	0.031	0.098	0.290	0.310	0.274	0.092
1 Year	0.612	0.467	0.231	1.870	1.225	0.733	0.084	0.250	0.480	0.212	0.143	0.043
PANEL B: LIBOR Rates vs. Control Group Return												
Over Night	0.290	0.049	0.042	2.012	0.149	0.134	0.065	0.880	0.900	0.237	0.002	0.001
1 Month	0.492*	0.411	0.360	2.597	1.029	1.166	0.022	0.330	0.270	0.342	0.105	0.102
3 Months	0.551*	0.411	0.351	2.331	1.128	1.181	0.036	0.290	0.260	0.295	0.124	0.104
6 Months	0.542	0.409	0.319	0.060	0.305	0.315	0.060	0.310	0.320	0.246	0.116	0.084
1 Year	0.480	0.294	0.239	1.649	0.779	0.759	0.120	0.460	0.460	0.1729	0.063	0.046
PANEL C: LIBOR Rates vs. Primary Sample Return												
Over Night	0.697**	0.247	0.156	4.619	0.829	0.543	4.8E-04	0.430	0.600	0.621	0.071	0.024
1 Month	0.871**	0.565	0.117	3.487	1.631	0.387	4.0E-03	0.140	0.710	0.483	0.228	0.012
3 Months	0.898*	0.585	0.181	2.668	1.906	0.627	0.019	0.089	0.540	0.354	0.288	0.032
6 Months	0.836*	0.540	0.121	2.163	1.645	0.409	0.050	0.130	0.690	0.265	0.231	0.014
1 Year	0.716	0.333	0.017	1.651	0.957	0.056	0.120	0.360	0.960	0.173	0.092	2.7E-04

Table note: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels.

Analysis

The Table P.13 time series regression slopes show that some selected LIBOR rate changes exhibit statistically significant explanatory power to the samples and the control group market price returns for the time period 1994 to 2008. The Primary and Secondary sample slopes show statistical significance for all the selected rates other than the 1 year rate. The Control group shows statistical significance for 1 and 3 month rates only.

Examining the significant regression slopes, the Primary and Secondary sample exhibits greater magnitude, statistical significance, and model strength when compared to the Control group for the 1 and 3 month LIBOR rates.

The statistically significant results suggest that the change in LIBOR rates reacted in relation to the Primary and Secondary sample market price return variable after the 2005 accounting change compared to before, than the Control group reactions.

P.11 LIBOR Value-at-Risk Actual and Historical Value-at-Risk Actual

The regression analysis for selected LIBOR Historical Value-at-Risk Actual and market price return Historical Value-at-Risk Actual is presented for the time range 1994 to 2008 in Table P.14. In these regressions, the Historical Value-at-Risk Actual variable is tested as the dependent variable, and the LIBOR Historical Value-at-Risk Actual variables for the range *over-night* (O/N) to 1 year are individually tested as the independent variable.

Table P.14 Time Series Regression Analysis for LIBOR Rates Historical Value-at-Risk Actual and Historical Value-at-Risk Actual

Time Series Regression

Table P.14 Panels A to C show the results for the time series regressions that test the selected LIBOR rate Value-at-Risk Actual and Historical Value-at-Risk Actual by applying the regression specified in equation (O.14). In this table, Panel A presents results for the Primary and Secondary sample; Panel B presents results for the Control group; and, Panel C presents results for the Primary sample.

Time Series Regression Table Description

The Table P.14 columns represent the following:

The LIBOR Rate column represents the samples and the control group result panels for the selected rates.

The *V* Time Periods column represents the following:
The Total Period column represents the time series regression results for the year range 1994 to 2008, with a single year represented by the number of days from 1st January to 31st December.
The Sub-Periods column represents the time series regression results for the year range 1994 to 2004, and for 1994 to 2007, with a single year represented by the number of days from 1st January to 31st December.

The total and sub-period columns present the coefficients and related statistics for the regression specified in equation (O.14), and follows the model:

$$V_{N,t} = a + b\,VLIBOR_t + e_{N,t}$$

Where: $V_{N,t}$ is the Value-at-Risk (V_t) for N firms at time t, $VLIBOR_t$ is the Value-at-Risk for the selected LIBOR rate at time t, and $e_{N,t}$ is the regression error term.

Table P.14 (Continued)

LIBOR Rate	*V* Time Periods											
	Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods	
	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007
	b			*t*			*p*			R^2		
PANEL A: LIBOR Rates *V* vs. Primary and Secondary Sample *V*												
Over Night	0.739**	0.460	0.459	3.416	1.245	1.716	4.6E-03	0.240	0.110	0.473	0.147	0.197
1 Month	0.551**	0.326	0.369	3.616	0.957	1.227	3.1E-03	0.360	0.240	0.501	0.092	0.111
3 Months	0.7**	0.436	0.467	3.708	1.268	1.532	2.6E-03	0.240	0.150	0.514	0.152	0.164
6 Months	0.687**	0.390	0.422	3.479	1.272	1.545	4.1E-03	0.240	0.150	0.482	0.152	0.166
1 Year	0.578*	0.285	0.316	2.900	1.142	1.400	0.012	0.280	0.190	0.393	0.127	0.140
PANEL B: LIBOR Rates *V* vs. Control Group *V*												
Over Night	0.545**	0.376	0.491	3.104	1.168	2.057	8.4E-03	0.270	0.062	0.426	0.132	0.261
1 Month	0.379*	0.431	0.487	2.900	1.583	1.869	0.012	0.150	0.086	0.393	0.218	0.225
3 Months	0.477*	0.450	0.497	2.915	1.580	1.808	0.012	0.150	0.096	0.395	0.217	0.214
6 Months	0.454*	0.344	0.387	0.021	0.224	0.155	0.021	0.220	0.150	0.348	0.159	0.161
1 Year	0.347	0.185	0.220	1.996	0.831	1.009	0.067	0.430	0.330	0.235	0.071	0.078
PANEL C: LIBOR Rates *V* vs. Primary Sample *V*												
Over Night	0.838*	0.168	0.162	2.797	0.445	0.587	0.015	0.670	0.570	0.376	0.022	0.028
1 Month	0.786**	0.296	0.276	4.718	0.910	0.957	4.0E-04	0.390	0.360	0.631	0.084	0.071
3 Months	0.988**	0.472	0.437	4.734	1.482	1.530	3.9E-04	0.170	0.150	0.633	0.196	0.163
6 Months	0.989**	0.497	0.475	4.581	1.843	1.942	5.2E-04	0.098	0.076	0.617	0.274	0.239
1 Year	0.863**	0.425	0.425*	3.923	2.011	2.208	1.7E-03	0.075	0.047	0.542	0.310	0.289

Table note: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels.

Analysis

The Table P.14 time series regression slopes show the selected LIBOR rate Historical Value-at-Risk variable exhibits statistically significant explanatory power to the samples and the control group Historical Value-at-Risk Actual variable for the time period 1994 to 2008. The Primary and Secondary sample slopes show statistical significance for all the selected rates. The Control group also shows statistical significance for all the selected rates other than the 1 year rate.

Examining the significant regression slopes, the Primary and Secondary sample exhibits greater magnitude, statistical significance, and model strength when compared to the Control group.

This suggests that the Historical Value-at-Risk Actual for the selected LIBOR rates reacted with a greater magnitude in relation to the Primary and Secondary sample Historical Value-at-Risk Actual variable after the 2005 accounting change compared to before, than the Control group reactions.

P.12 Change in GILT Rates and Market Price Return

The regression analysis for the change in selected GILT Government bond benchmark rates and the market price return is presented for the time range 1994 to 2008 in Table P.15. In these regressions, the market price return variable is tested as the dependent variable, and the change in the GILT Government bond benchmark rate variables for maturities in the range 2.5 to 25 years are individually tested as the independent variable.

Table P.15 Time Series Regression Analysis for Change in GILT Rates and Market Price Return

Time Series Regression

Table P.15 Panels A1 to C2 show the results for the time series regressions that test the change in selected GILT rates and the market price return by applying the regression specified in equation (O.13).

In Table P.15 the change in the GILT Government bond benchmark rates:- for the Primary and Secondary sample, Panel A1 presents results for the maturity range 2.5 to 14.5 year rates and Panel A2 presents results for the maturity range 15 to 25 year rates; for the Control group, Panel B1 presents results for the maturity range 2.5 to 14.5 year rates and Panel B2 presents results for the maturity range 15 to 25 year rates; for the Primary sample, Panel C1 presents results for the maturity range 2.5 to 14.5 year rates and Panel C2 presents results for the maturity range 15 to 25 year rates.

Time Series Regression Table Description

The Table P.15 columns represent the following:

The GILT Rate Benchmark Year column represents bond maturities.

The Rates and Returns Time Periods column represents the following:
The Total Period column represents the time series regression results for the year range 1994 to 2008, with a single year represented by the number of days from 1st January to 31st December. The Sub-Periods column represents the time series regression results for the year range 1994 to 2004, and for 1994 to 2007, with a single year represented by the number of days from 1st January to 31st December.

The total and sub-period columns present the coefficients and related statistics for the regression specified in equation (O.13), and follows the model:

$$dM_{N,t} = a + b\ dGILTS_t + e_{N,t}$$

Where: $dM_{N,t}$ is the log Market Price return ($M_{t-1,t}$) for N firms at time t, $dGILTS_t$ is the change in the selected GILT rate ($GILT_{t-1,t}$) at time t, and $e_{N,t}$ is the regression error term.

Table P.15 (Continued)

PANEL A1: Time Series Regression Analysis of the Primary and Secondary Sample for Change in GILT Rates and Market Price Return from 2.5 years to 14.5 years

GILT Rate Benchmark Year	Rates and Returns Time Periods											
	Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods	
	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007
	b			*t*			*p*			R^2		
GILT 2.5	0.100	0.100	0.100	0.364	0.364	0.364	0.728	0.728	0.728	0.022	0.022	0.022
GILT 3	-0.153	0.107	0.133	-0.562	0.350	0.569	0.587	0.738	0.583	0.031	0.020	0.035
GILT 3.5	-0.142	0.105	0.132	-0.530	0.364	0.587	0.607	0.727	0.570	0.025	0.019	0.033
GILT 4	-0.132	0.108	0.135	-0.462	0.356	0.576	0.653	0.732	0.577	0.019	0.018	0.032
GILT 4.5	-0.129	0.109	0.133	-0.460	0.382	0.582	0.653	0.711	0.571	0.016	0.016	0.027
GILT 5	-0.125	0.102	0.127	-0.432	0.348	0.541	0.673	0.736	0.599	0.014	0.013	0.024
GILT 5.5	-0.125	0.092	0.118	-0.421	0.309	0.494	0.681	0.764	0.630	0.013	0.010	0.020
GILT 6	-0.127	0.081	0.108	-0.423	0.267	0.446	0.679	0.795	0.664	0.014	0.008	0.016
GILT 6.5	-0.133	0.069	0.097	0.669	0.827	0.699	0.669	0.827	0.699	0.015	0.006	0.013
GILT 7	-0.142	0.056	0.086	-0.461	0.182	0.348	0.652	0.860	0.734	0.016	0.004	0.010
GILT 7.5	-0.153	0.044	0.075	-0.492	0.139	0.299	0.631	0.893	0.770	0.018	0.002	0.007
GILT 8	-0.166	0.031	0.064	-0.528	0.096	0.252	0.606	0.925	0.805	0.021	0.001	0.005
GILT 8.5	-0.180	0.018	0.053	-0.567	0.055	0.206	0.580	0.958	0.840	0.024	3.3E-04	0.004
GILT 9	-0.195	0.004	0.042	-0.608	0.013	0.160	0.554	0.990	0.875	0.028	2.0E-05	0.002
GILT 9.5	-0.210	-0.009	0.030	-0.650	-0.027	0.115	0.527	0.979	0.910	0.031	8.2E-05	0.001
GILT 10	-0.240	-0.037	0.007	-0.692	-0.067	0.071	0.501	0.948	0.944	0.036	0.001	4.2E-04
GILT 10.5	-0.240	-0.037	0.007	-0.733	-0.107	0.028	0.477	0.917	0.978	0.040	0.001	6.4E-05
GILT 11	-0.255	-0.051	-0.004	-0.772	-0.146	-0.016	0.454	0.887	0.988	0.044	0.002	2.1E-05
GILT 11.5	-0.269	-0.065	-0.016	-0.808	-0.185	-0.059	0.434	0.857	0.954	0.048	0.004	2.9E-04
GILT 12	-0.331	-0.113	-0.047	-0.953	-0.329	-0.177	0.358	0.749	0.863	0.065	0.012	0.003
GILT 12.5	-0.344	-0.127	-0.060	-0.982	-0.368	-0.220	0.344	0.721	0.829	0.069	0.015	0.004
GILT 13	-0.355	-0.142	-0.072	-1.007	-0.407	-0.264	0.332	0.694	0.796	0.072	0.018	0.006
GILT 13.5	-0.364	-0.156	-0.084	-1.027	-0.445	-0.307	0.323	0.666	0.764	0.075	0.022	0.008
GILT 14	-0.373	-0.171	-0.097	-1.043	-0.484	-0.351	0.316	0.640	0.732	0.077	0.025	0.010
GILT 14.5	-0.379	-0.185	-0.109	-1.053	-0.523	-0.395	0.311	0.614	0.700	0.079	0.029	0.013

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels.

Table P.15 (Continued)

PANEL A2: Time Series Regression Analysis of the Primary and Secondary Sample for Change in GILT Rates and Market Price Return from 15 years to 25 years

GILT Rate Benchmark Year	Rates and Returns Time Periods											
	Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods	
	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007
	b			*t*			*p*			R^2		
GILT 15	-0.384	-0.199	-0.122	-1.059	-0.562	-0.439	0.309	0.588	0.669	0.079	0.034	0.016
GILT 15.5	-0.387	-0.213	-0.134	-1.059	-0.600	-0.483	0.309	0.563	0.638	0.079	0.039	0.019
GILT 16	-0.388	-0.227	-0.147	-1.054	-0.639	-0.527	0.311	0.539	0.608	0.079	0.043	0.023
GILT 16.5	-0.387	-0.241	-0.159	-1.044	-0.678	-0.571	0.316	0.515	0.579	0.077	0.049	0.026
GILT 17	-0.384	-0.254	-0.171	-1.028	-0.717	-0.614	0.323	0.491	0.550	0.075	0.054	0.031
GILT 17.5	-0.378	-0.267	-0.183	-1.006	-0.756	-0.658	0.333	0.469	0.523	0.072	0.060	0.035
GILT 18	-0.371	-0.280	-0.195	-0.980	-0.795	-0.702	0.345	0.447	0.496	0.069	0.066	0.039
GILT 18.5	-0.360	-0.292	-0.206	-0.948	-0.834	-0.745	0.361	0.426	0.471	0.065	0.072	0.044
GILT 19	-0.348	-0.304	-0.217	-0.911	-0.873	-0.788	0.379	0.405	0.446	0.060	0.078	0.049
GILT 19.5	-0.333	-0.315	-0.228	-0.869	-0.911	-0.831	0.401	0.386	0.422	0.055	0.085	0.054
GILT 20	-0.337	-0.332	-0.248	-0.820	-0.872	-0.842	0.430	0.412	0.420	0.058	0.098	0.066
GILT 20.5	-0.320	-0.344	-0.259	-0.778	-0.911	-0.885	0.453	0.393	0.397	0.052	0.106	0.073
GILT 21	-0.428	-0.485	-0.327	-0.860	-0.998	-0.918	0.410	0.357	0.382	0.069	0.142	0.086
GILT 21.5	-0.399	-0.496	-0.339	-0.803	-1.039	-0.964	0.441	0.339	0.360	0.061	0.152	0.094
GILT 22	-0.346	-0.756	-0.420	-0.550	-1.057	-0.964	0.597	0.350	0.367	0.036	0.218	0.117
GILT 22.5	-0.302	-0.758	-0.432	-0.487	-1.096	-1.009	0.639	0.335	0.346	0.029	0.231	0.127
GILT 23	-0.258	-0.757	-0.442	-0.423	-1.132	-1.054	0.683	0.321	0.327	0.022	0.242	0.137
GILT 23.5	-0.216	-0.754	-0.451	-0.360	-1.165	-1.096	0.728	0.309	0.309	0.016	0.253	0.147
GILT 24	-0.162	-0.626	-0.440	-0.256	-0.785	-1.009	0.807	0.515	0.359	0.011	0.236	0.169
GILT 24.5	-0.119	-0.622	-0.443	-0.192	-0.798	-1.034	0.854	0.508	0.348	0.006	0.242	0.176
GILT 25	-0.079	-0.617	-0.446	-0.130	-0.811	-1.059	0.901	0.503	0.338	0.003	0.247	0.183

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels.

Table P.15 (Continued)

PANEL B1: Time Series Regression Analysis of the Control Group for Change in GILT Rates and Market Price Return from 2.5 years to 14.5 Years

GILT Rate Benchmark Year	Rates and Returns Time Periods											
	Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods	
	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007
	b			*t*			*p*			R^2		
GILT 2.5	0.130	0.130	0.130	0.500	0.500	0.500	0.635	0.635	0.635	0.040	0.040	0.040
GILT 3	-0.112	0.113	0.092	-0.465	0.387	0.389	0.652	0.712	0.706	0.021	0.024	0.017
GILT 3.5	-0.075	0.136	0.121	-0.310	0.485	0.519	0.762	0.642	0.615	0.009	0.033	0.026
GILT 4	-0.082	0.120	0.106	-0.320	0.407	0.434	0.755	0.696	0.673	0.009	0.023	0.019
GILT 4.5	-0.094	0.101	0.085	-0.383	0.373	0.367	0.708	0.718	0.720	0.011	0.015	0.011
GILT 5	-0.107	0.079	0.063	-0.423	0.284	0.267	0.679	0.783	0.794	0.014	0.009	0.006
GILT 5.5	-0.121	0.058	0.041	-0.468	0.204	0.172	0.647	0.843	0.866	0.017	0.005	0.002
GILT 6	-0.135	0.038	0.021	-0.517	0.134	0.086	0.614	0.897	0.933	0.020	0.002	0.001
GILT 6.5	-0.150	0.021	0.002	0.580	0.943	0.993	0.580	0.943	0.993	0.024	0.001	6.1E-06
GILT 7	-0.165	0.006	-0.015	-0.620	0.021	-0.061	0.546	0.984	0.952	0.029	4.9E-05	3.1E-04
GILT 7.5	-0.180	-0.007	-0.031	-0.671	-0.024	-0.124	0.514	0.982	0.903	0.034	6.3E-05	0.001
GILT 8	-0.196	-0.019	-0.046	-0.722	-0.063	-0.181	0.483	0.951	0.859	0.039	4.4E-04	0.003
GILT 8.5	-0.211	-0.030	-0.060	-0.772	-0.097	-0.233	0.454	0.925	0.820	0.044	0.001	0.005
GILT 9	-0.226	-0.039	-0.073	-0.820	-0.127	-0.281	0.427	0.902	0.783	0.049	0.002	0.007
GILT 9.5	-0.241	-0.049	-0.086	-0.867	-0.155	-0.327	0.402	0.880	0.749	0.055	0.003	0.009
GILT 10	-0.269	-0.067	-0.110	-0.913	-0.181	-0.370	0.378	0.860	0.718	0.060	0.004	0.011
GILT 10.5	-0.269	-0.067	-0.110	-0.956	-0.206	-0.412	0.356	0.841	0.687	0.066	0.005	0.014
GILT 11	-0.283	-0.076	-0.122	-0.998	-0.231	-0.454	0.337	0.822	0.658	0.071	0.006	0.017
GILT 11.5	-0.296	-0.085	-0.134	-1.038	-0.257	-0.495	0.318	0.803	0.630	0.076	0.007	0.020
GILT 12	-0.346	-0.114	-0.173	-1.191	-0.340	-0.636	0.255	0.742	0.537	0.098	0.013	0.033
GILT 12.5	-0.358	-0.123	-0.185	-1.224	-0.364	-0.675	0.243	0.724	0.513	0.103	0.015	0.037
GILT 13	-0.369	-0.132	-0.197	-1.254	-0.389	-0.714	0.232	0.706	0.489	0.108	0.017	0.041
GILT 13.5	-0.379	-0.142	-0.209	-1.281	-0.416	-0.755	0.223	0.687	0.465	0.112	0.019	0.045
GILT 14	-0.389	-0.153	-0.221	-1.305	-0.444	-0.796	0.214	0.667	0.442	0.116	0.021	0.050
GILT 14.5	-0.398	-0.164	-0.233	-1.327	-0.474	-0.838	0.207	0.647	0.419	0.119	0.024	0.055

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels.

Table P.15 (Continued)

PANEL B2: Time Series Regression Analysis of the Control Group for Change in GILT Rates and Market Price Return from 15 years to 25 years

GILT Rate Benchmark Year	Rates and Returns Time Periods											
	Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods	
	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007
	b			*t*			*p*			R^2		
GILT 15	-0.406	-0.175	-0.246	-1.345	-0.505	-0.881	0.202	0.626	0.396	0.122	0.028	0.061
GILT 15.5	-0.413	-0.187	-0.258	-1.360	-0.537	-0.925	0.197	0.604	0.373	0.125	0.031	0.066
GILT 16	-0.419	-0.199	-0.271	-1.371	-0.571	-0.970	0.194	0.582	0.351	0.126	0.035	0.073
GILT 16.5	-0.424	-0.211	-0.284	-1.379	-0.607	-1.015	0.191	0.559	0.330	0.128	0.039	0.079
GILT 17	-0.427	-0.224	-0.296	-1.383	-0.644	-1.062	0.190	0.535	0.309	0.128	0.044	0.086
GILT 17.5	-0.429	-0.237	-0.309	-1.383	-0.683	-1.110	0.190	0.512	0.289	0.128	0.049	0.093
GILT 18	-0.430	-0.250	-0.321	-1.380	-0.723	-1.159	0.191	0.488	0.269	0.128	0.055	0.101
GILT 18.5	-0.430	-0.263	-0.333	-1.372	-0.764	-1.209	0.193	0.464	0.250	0.126	0.061	0.109
GILT 19	-0.427	-0.276	-0.345	-1.360	-0.807	-1.259	0.197	0.441	0.232	0.125	0.067	0.117
GILT 19.5	-0.423	-0.288	-0.356	-1.344	-0.851	-1.310	0.202	0.417	0.215	0.122	0.074	0.125
GILT 20	-0.427	-0.305	-0.370	-1.243	-0.798	-1.241	0.240	0.451	0.243	0.123	0.083	0.133
GILT 20.5	-0.421	-0.318	-0.381	-1.225	-0.841	-1.291	0.246	0.428	0.226	0.120	0.092	0.143
GILT 21	-0.446	-0.322	-0.378	-1.063	-0.650	-1.051	0.313	0.540	0.321	0.102	0.066	0.109
GILT 21.5	-0.433	-0.340	-0.392	-1.035	-0.699	-1.105	0.325	0.510	0.298	0.097	0.075	0.119
GILT 22	-0.698	-0.973	-0.753	-1.385	-1.505	-1.951	0.203	0.207	0.092	0.193	0.362	0.352
GILT 22.5	-0.664	-0.974	-0.761	-1.327	-1.568	-2.024	0.221	0.192	0.083	0.181	0.381	0.369
GILT 23	-0.627	-0.972	-0.767	-1.268	-1.630	-2.097	0.241	0.178	0.074	0.167	0.399	0.386
GILT 23.5	-0.589	-0.967	-0.772	-1.207	-1.692	-2.170	0.262	0.166	0.067	0.154	0.417	0.402
GILT 24	-0.477	-0.739	-0.696	-0.926	-1.061	-1.873	0.390	0.400	0.120	0.125	0.360	0.412
GILT 24.5	-0.435	-0.732	-0.695	-0.856	-1.077	-1.906	0.425	0.394	0.115	0.109	0.367	0.421
GILT 25	-0.394	-0.724	-0.692	-0.788	-1.092	-1.937	0.461	0.389	0.110	0.094	0.374	0.429

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels.

Table P.15 (Continued)

PANEL C1: Time Series Regression Analysis of the Primary Sample for Change in GILT Rates and Market Price Return from 2.5 years to 14.5 years

GILT Rate Benchmark Year	Rates and Returns Time Periods											
	Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods	
	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007
	b			*t*			*p*			R^2		
GILT 2.5	-0.032	-0.032	-0.032	-0.131	-0.131	-0.131	0.900	0.900	0.900	0.003	0.003	0.003
GILT 3	-0.400	-0.036	0.029	-1.196	-0.132	0.132	0.259	0.899	0.898	0.125	0.003	0.002
GILT 3.5	-0.362	0.007	0.056	-1.083	0.027	0.267	0.302	0.979	0.795	0.096	1.0E-04	0.007
GILT 4	-0.343	0.019	0.068	-0.959	0.069	0.311	0.358	0.947	0.762	0.077	0.001	0.010
GILT 4.5	-0.326	0.037	0.082	-0.915	0.146	0.381	0.377	0.887	0.710	0.061	0.002	0.012
GILT 5	-0.308	0.040	0.086	-0.837	0.154	0.391	0.417	0.881	0.703	0.051	0.003	0.013
GILT 5.5	-0.294	0.040	0.088	-0.779	0.153	0.393	0.450	0.882	0.701	0.045	0.003	0.013
GILT 6	-0.284	0.039	0.088	-0.739	0.145	0.391	0.473	0.888	0.703	0.040	0.002	0.013
GILT 6.5	-0.279	0.036	0.088	0.487	0.898	0.708	0.487	0.898	0.708	0.038	0.002	0.012
GILT 7	-0.279	0.031	0.086	-0.705	0.114	0.374	0.493	0.912	0.715	0.037	0.001	0.011
GILT 7.5	-0.282	0.026	0.084	-0.706	0.094	0.361	0.493	0.928	0.724	0.037	0.001	0.011
GILT 8	-0.288	0.020	0.082	-0.714	0.071	0.347	0.488	0.945	0.735	0.038	0.001	0.010
GILT 8.5	-0.297	0.014	0.079	-0.728	0.047	0.331	0.479	0.963	0.746	0.039	2.5E-04	0.009
GILT 9	-0.307	0.006	0.076	-0.746	0.022	0.315	0.469	0.983	0.759	0.041	5.4E-05	0.008
GILT 9.5	-0.318	-0.001	0.072	-0.766	-0.004	0.296	0.457	0.997	0.772	0.043	1.6E-06	0.007
GILT 10	-0.341	-0.017	0.064	-0.787	-0.030	0.277	0.446	0.976	0.786	0.045	1.0E-04	0.006
GILT 10.5	-0.341	-0.017	0.064	-0.807	-0.057	0.257	0.434	0.956	0.801	0.048	3.6E-04	0.005
GILT 11	-0.352	-0.026	0.060	-0.826	-0.084	0.236	0.424	0.935	0.817	0.050	0.001	0.005
GILT 11.5	-0.362	-0.035	0.055	-0.842	-0.112	0.214	0.415	0.913	0.834	0.052	0.001	0.004
GILT 12	-0.405	-0.048	0.062	-0.861	-0.148	0.235	0.405	0.886	0.818	0.054	0.002	0.005
GILT 12.5	-0.410	-0.054	0.058	-0.865	-0.165	0.219	0.403	0.873	0.830	0.054	0.003	0.004
GILT 13	-0.414	-0.060	0.054	-0.865	-0.182	0.202	0.403	0.859	0.843	0.054	0.004	0.003
GILT 13.5	-0.415	-0.067	0.049	-0.859	-0.201	0.183	0.406	0.845	0.858	0.054	0.004	0.003
GILT 14	-0.414	-0.074	0.044	-0.850	-0.220	0.163	0.411	0.831	0.873	0.053	0.005	0.002
GILT 14.5	-0.410	-0.081	0.039	-0.834	-0.241	0.142	0.419	0.815	0.890	0.051	0.006	0.002

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels.

Table P.15 (Continued)

PANEL C2: Time Series Regression Analysis of the Primary Sample for Change in GILT Rates and Market Price Return from 15 years to 25 years

GILT Rate Benchmark Year	Rates and Returns Time Periods											
	Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods	
	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007
	b			*t*			*p*			R^2		
GILT 15	-0.404	-0.089	0.033	-0.814	-0.262	0.119	0.430	0.799	0.907	0.048	0.008	0.001
GILT 15.5	-0.395	-0.097	0.026	-0.788	-0.284	0.095	0.445	0.783	0.926	0.046	0.009	0.001
GILT 16	-0.382	-0.105	0.019	-0.757	-0.308	0.070	0.463	0.765	0.945	0.042	0.010	4.1E-04
GILT 16.5	-0.367	-0.114	0.012	-0.720	-0.332	0.044	0.484	0.748	0.966	0.038	0.012	1.6E-04
GILT 17	-0.348	-0.122	0.005	-0.678	-0.356	0.017	0.510	0.730	0.986	0.034	0.014	2.5E-05
GILT 17.5	-0.326	-0.131	-0.003	-0.631	-0.382	-0.010	0.539	0.711	0.992	0.030	0.016	8.4E-06
GILT 18	-0.301	-0.139	-0.011	-0.578	-0.408	-0.038	0.573	0.693	0.970	0.025	0.018	1.2E-04
GILT 18.5	-0.272	-0.148	-0.018	-0.520	-0.435	-0.067	0.612	0.674	0.948	0.020	0.021	3.7E-04
GILT 19	-0.241	-0.157	-0.026	-0.458	-0.462	-0.096	0.655	0.655	0.925	0.016	0.023	0.001
GILT 19.5	-0.206	-0.165	-0.034	-0.391	-0.490	-0.125	0.702	0.636	0.903	0.012	0.026	0.001
GILT 20	-0.229	-0.209	-0.085	-0.419	-0.634	-0.321	0.683	0.546	0.755	0.016	0.054	0.010
GILT 20.5	-0.193	-0.219	-0.096	-0.354	-0.672	-0.362	0.730	0.523	0.725	0.011	0.061	0.013
GILT 21	-0.195	-0.163	-0.032	-0.293	-0.384	-0.100	0.775	0.714	0.923	0.009	0.024	0.001
GILT 21.5	-0.143	-0.179	-0.046	-0.215	-0.428	-0.146	0.834	0.684	0.887	0.005	0.030	0.002
GILT 22	-4.9E-04	-0.482	-0.119	-0.001	-0.796	-0.307	1.000	0.471	0.768	4.3E-08	0.137	0.013
GILT 22.5	0.068	-0.494	-0.136	0.082	-0.844	-0.356	0.936	0.446	0.732	0.001	0.151	0.018
GILT 23	0.133	-0.504	-0.152	0.165	-0.890	-0.405	0.873	0.424	0.698	0.003	0.165	0.023
GILT 23.5	0.194	-0.511	-0.167	0.245	-0.936	-0.453	0.812	0.402	0.665	0.007	0.180	0.028
GILT 24	0.333	-0.284	-0.096	0.401	-0.466	-0.276	0.703	0.687	0.794	0.026	0.098	0.015
GILT 24.5	0.392	-0.285	-0.101	0.486	-0.477	-0.296	0.644	0.680	0.779	0.038	0.102	0.017
GILT 25	0.446	-0.285	-0.106	0.569	-0.488	-0.315	0.590	0.674	0.765	0.051	0.106	0.019

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels.

Analysis

The Table P.15 time series regression slopes show that the change in selected GILT Government bond benchmark rates do not exhibit statistically significant explanatory power with the samples and the control group market price return variable.

This suggests that changes in the GILT Government bond benchmark rates reacted with the samples and the control group market price returns similarly before and after the 2005 accounting change.

P.13 GILT Rate Value-at-Risk Actual and Historical Value-at-Risk Actual

The regression analysis for selected GILT Government bond benchmark rate Historical Value-at-Risk Actual and market price return Historical Value-at-Risk Actual is presented for the time range 1994 to 2008 in Table P.16. In these regressions, the Historical Value-at-Risk Actual variable is tested as the dependent variable, and the GILT rate Value-at-Risk Actual variables for the maturities in the range 2.5 to 25 years are individually tested as the independent variable.

Table P.16 Time Series Regression Analysis for GILT Rates Historical Value-at-Risk Actual and Historical Value-at-Risk Actual

Time Series Regression

Table P.16 Panels A to C show the results for the time series regressions that test the selected GILT Government bond benchmark rate Historical Value-at-Risk Actual and Historical Value-at-Risk Actual by applying the regression specified in equation (O.14).

In Table P.16 the GILT Government bond benchmark rate Historical Value-at-Risk Actual:- for the Primary and Secondary sample, Panel A1 presents results for the maturity range 2.5 to 14.5 year rates and Panel A2 presents results for the maturity range 15 to 25 year rates; for the Control group, Panel B1 presents results for the maturity range 2.5 to 14.5 year rates and Panel B2 presents results for the maturity range 15 to 25 year rates; for the Primary sample, Panel C1 presents results for the maturity range 2.5 to 14.5 year rates and Panel C2 presents results for the maturity range 15 to 25 year rates.

Time Series Regression Table Description

The Table P.16 columns represent the following:

The GILT Rate Benchmark Year column represents bond maturities.

The V Time Periods column represents the following:
The Total Period column represents the time series regression results for the year range 1994 to 2008, with a single year represented by the number of days from 1st January to 31st December. The Sub-Periods column represents the time series regression results for the year range 1994 to 2004, and for 1994 to 2007, with a single year represented by the number of days from 1st January to 31st December.

The total and sub-period columns present the coefficients and related statistics for the regression specified in equation (O.14), and follows the model:

$$V_{N,t} = a + b\,VGILT_t + e_{N,t}$$

Where: $V_{N,t}$ is the Value-at-Risk (V_t) for N firms at time t, $VGILT_t$ is the Value-at-Risk for the selected GILT rate at time t, and $e_{N,t}$ is the regression error term.

Table P.16 (Continued)

PANEL A1: Time Series Regression Analysis of the Primary and Secondary Sample for GILT Rate Value-at-Risk Actual and Historical Value-at-Risk Actual from 2.5 years to 14.5 Years

GILT Rate Benchmark Year	*V* Time Periods											
	Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods	
	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007
	b			*t*			*p*			R^2		
GILT 2.5	0.846*	0.846*	0.846*	8.052	8.052	8.052	0.015	0.015	0.015	0.970	0.970	0.970
GILT 3	0.564**	0.441*	0.464*	5.564	3.013	3.506	0.001	0.039	0.017	0.838	0.694	0.711
GILT 3.5	0.621**	0.465	0.473	4.006	1.981	2.230	0.004	0.095	0.061	0.667	0.395	0.415
GILT 4	0.67**	0.411	0.475	3.582	1.508	1.846	0.005	0.182	0.098	0.562	0.275	0.275
GILT 4.5	0.694**	0.449	0.464	3.751	1.699	1.853	0.002	0.124	0.089	0.520	0.243	0.222
GILT 5	0.693**	0.411	0.414	3.365	1.427	1.522	0.005	0.187	0.154	0.465	0.184	0.162
GILT 5.5	0.68**	0.368	0.357	3.042	1.201	1.240	0.009	0.260	0.239	0.416	0.138	0.114
GILT 6	0.662*	0.325	0.299	2.763	1.016	0.994	0.016	0.336	0.340	0.370	0.103	0.076
GILT 6.5	0.634*	0.275	0.235	0.026	0.426	0.462	0.026	0.426	0.462	0.325	0.072	0.046
GILT 7	0.608*	0.230	0.178	2.286	0.680	0.564	0.040	0.514	0.583	0.287	0.049	0.026
GILT 7.5	0.587	0.198	0.131	2.116	0.572	0.407	0.054	0.581	0.691	0.256	0.035	0.014
GILT 8	0.568	0.169	0.089	1.988	0.475	0.272	0.068	0.646	0.790	0.233	0.024	0.006
GILT 8.5	0.544	0.136	0.043	1.820	0.373	0.129	0.092	0.718	0.899	0.203	0.015	0.001
GILT 9	0.525	0.106	-0.001	1.664	0.282	-0.004	0.120	0.784	0.997	0.176	0.009	1.3E-06
GILT 9.5	0.510	0.077	-0.045	1.562	0.198	-0.129	0.142	0.847	0.899	0.158	0.004	0.001
GILT 10	0.481	0.021	-0.125	1.483	0.118	-0.249	0.162	0.909	0.807	0.145	0.002	0.005
GILT 10.5	0.481	0.021	-0.125	1.417	0.051	-0.353	0.180	0.961	0.730	0.134	2.9E-04	0.010
GILT 11	0.470	-0.004	-0.161	1.361	-0.009	-0.449	0.197	0.993	0.662	0.125	8.6E-06	0.017
GILT 11.5	0.459	-0.034	-0.202	1.307	-0.079	-0.555	0.214	0.939	0.589	0.116	0.001	0.025
GILT 12	0.442	-0.065	-0.241	1.244	-0.149	-0.658	0.235	0.885	0.523	0.106	0.002	0.035
GILT 12.5	0.427	-0.099	-0.282	1.192	-0.224	-0.767	0.254	0.828	0.458	0.099	0.006	0.047
GILT 13	0.412	-0.136	-0.322	1.145	-0.302	-0.878	0.273	0.770	0.397	0.092	0.010	0.060
GILT 13.5	0.399	-0.165	-0.356	1.108	-0.362	-0.972	0.288	0.726	0.350	0.086	0.014	0.073
GILT 14	0.388	-0.195	-0.384	1.079	-0.422	-1.053	0.300	0.683	0.313	0.082	0.019	0.085
GILT 14.5	0.372	-0.230	-0.418	1.029	-0.493	-1.153	0.322	0.634	0.271	0.075	0.026	0.100

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels.

Table P.16 (Continued)

PANEL A2: Time Series Regression Analysis of the Primary and Secondary Sample for GILT Rate Value-at-Risk Actual and Historical Value-at-Risk Actual from 15 years to 25 years

GILT Rate Benchmark Year	*V* Time Periods											
	Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods	
	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007
	b			*t*			*p*			R^2		
GILT 15	0.355	-0.261	-0.445	0.975	-0.553	-1.236	0.347	0.593	0.240	0.068	0.033	0.113
GILT 15.5	0.341	-0.288	-0.468	0.940	-0.608	-1.312	0.365	0.558	0.214	0.064	0.040	0.125
GILT 16	0.325	-0.313	-0.488	0.891	-0.655	-1.384	0.389	0.529	0.192	0.058	0.046	0.138
GILT 16.5	0.315	-0.333	-0.504	0.871	-0.696	-1.445	0.400	0.504	0.174	0.055	0.051	0.148
GILT 17	0.306	-0.355	-0.520	0.854	-0.742	-1.511	0.408	0.477	0.157	0.053	0.058	0.160
GILT 17.5	0.296	-0.379	-0.535	0.840	-0.795	-1.580	0.416	0.447	0.140	0.051	0.066	0.172
GILT 18	0.288	-0.400	-0.546	0.829	-0.844	-1.641	0.422	0.421	0.127	0.050	0.073	0.183
GILT 18.5	0.279	-0.414	-0.553	0.810	-0.876	-1.687	0.433	0.404	0.117	0.048	0.079	0.192
GILT 19	0.269	-0.434	-0.560	0.791	-0.926	-1.742	0.443	0.379	0.107	0.046	0.087	0.202
GILT 19.5	0.256	-0.450	-0.565	0.763	-0.971	-1.794	0.459	0.357	0.098	0.043	0.095	0.211
GILT 20	0.151	-0.878	-0.857*	0.377	-1.877	-2.714	0.714	0.110	0.024	0.014	0.370	0.450
GILT 20.5	0.144	-0.890	-0.859*	0.366	-1.938	-2.786	0.722	0.101	0.021	0.013	0.385	0.463
GILT 21	0.097	-0.879	-0.887*	0.247	-2.357	-3.275	0.810	0.065	0.011	0.007	0.526	0.573
GILT 21.5	0.084	-0.889	-0.887**	0.216	-2.462	-3.388	0.834	0.057	0.010	0.005	0.548	0.589
GILT 22	0.148	-1.546	-1.024*	0.339	-1.921	-3.287	0.744	0.150	0.017	0.016	0.552	0.643
GILT 22.5	0.137	-1.526	-1.014*	0.317	-2.045	-3.389	0.760	0.133	0.015	0.014	0.582	0.657
GILT 23	0.128	-1.503	-1.002*	0.300	-2.165	-3.472	0.773	0.119	0.013	0.013	0.610	0.668
GILT 23.5	0.118	-1.470	-0.991*	0.281	-2.271	-3.559	0.787	0.108	0.012	0.011	0.632	0.679
GILT 24	0.136	-1.910	-1.074*	0.258	-2.831	-3.157	0.807	0.216	0.034	0.013	0.889	0.714
GILT 24.5	0.125	-1.869	-1.059*	0.242	-2.983	-3.228	0.819	0.206	0.032	0.012	0.899	0.723
GILT 25	0.116	-1.829	-1.045*	0.228	-3.135	-3.296	0.829	0.197	0.030	0.010	0.908	0.731

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels.

Table P.16 (Continued)

PANEL B1: Time Series Regression Analysis of the Control Group for GILT Rate Value-at-Risk Actual and Historical Value-at-Risk Actual from 2.5 years to 14.5 Years

GILT Rate Benchmark Year	*V* Time Periods											
	Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods	
	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007
	b			*t*			*p*			R^2		
GILT 2.5	1.074*	1.074*	1.074*	6.495	6.495	6.495	0.023	0.023	0.023	0.955	0.955	0.955
GILT 3	0.432*	0.445	0.473*	3.548	2.266	2.685	0.012	0.086	0.044	0.677	0.562	0.590
GILT 3.5	0.458**	0.471*	0.496*	3.771	2.463	2.799	0.005	0.049	0.027	0.640	0.503	0.528
GILT 4	0.515**	0.460	0.532*	3.344	2.110	2.363	0.007	0.079	0.042	0.528	0.426	0.383
GILT 4.5	0.527**	0.505*	0.535*	3.570	2.511	2.505	0.003	0.033	0.028	0.495	0.412	0.343
GILT 5	0.526**	0.485	0.503	3.218	2.174	2.145	0.007	0.058	0.053	0.443	0.344	0.277
GILT 5.5	0.515*	0.453	0.460	2.906	1.883	1.829	0.012	0.092	0.092	0.394	0.283	0.218
GILT 6	0.499*	0.422	0.412	2.630	1.654	1.553	0.021	0.132	0.146	0.347	0.233	0.167
GILT 6.5	0.475*	0.382	0.356	0.034	0.186	0.219	0.034	0.186	0.219	0.302	0.185	0.123
GILT 7	0.453	0.346	0.307	2.157	1.254	1.083	0.050	0.242	0.300	0.264	0.149	0.089
GILT 7.5	0.436	0.322	0.266	1.988	1.131	0.917	0.068	0.287	0.377	0.233	0.124	0.065
GILT 8	0.420	0.302	0.232	1.861	1.028	0.785	0.086	0.331	0.448	0.210	0.105	0.049
GILT 8.5	0.402	0.279	0.194	1.708	0.921	0.644	0.111	0.381	0.532	0.183	0.086	0.033
GILT 9	0.387	0.260	0.157	1.559	0.828	0.507	0.143	0.429	0.621	0.158	0.071	0.021
GILT 9.5	0.372	0.243	0.122	1.448	0.750	0.384	0.171	0.472	0.708	0.139	0.059	0.012
GILT 10	0.341	0.210	0.055	1.351	0.675	0.265	0.200	0.517	0.796	0.123	0.048	0.006
GILT 10.5	0.341	0.210	0.055	1.273	0.613	0.166	0.225	0.555	0.871	0.111	0.040	0.002
GILT 11	0.329	0.200	0.028	1.210	0.566	0.082	0.248	0.585	0.936	0.101	0.034	0.001
GILT 11.5	0.316	0.184	-0.006	1.140	0.505	-0.017	0.275	0.626	0.987	0.091	0.028	2.3E-05
GILT 12	0.298	0.164	-0.040	1.063	0.438	-0.117	0.307	0.672	0.909	0.080	0.021	0.001
GILT 12.5	0.281	0.141	-0.078	0.991	0.370	-0.224	0.340	0.720	0.827	0.070	0.015	0.004
GILT 13	0.262	0.114	-0.117	0.921	0.294	-0.333	0.374	0.775	0.745	0.061	0.010	0.009
GILT 13.5	0.245	0.093	-0.152	0.860	0.234	-0.433	0.405	0.820	0.673	0.054	0.006	0.015
GILT 14	0.232	0.070	-0.179	0.815	0.175	-0.510	0.430	0.865	0.619	0.049	0.003	0.021
GILT 14.5	0.214	0.043	-0.214	0.746	0.105	-0.613	0.469	0.918	0.551	0.041	0.001	0.030

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels.

Table P.16 (Continued)

PANEL B2: Time Series Regression Analysis of the Control Group for GILT Rate Value-at-Risk Actual and Historical Value-at-Risk Actual from 15 years to 25 Years

GILT Rate Benchmark Year	*V* Time Periods											
	Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods	
	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007
	b			*t*			*p*			R^2		
GILT 15	0.195	0.016	-0.246	0.676	0.037	-0.706	0.511	0.971	0.493	0.034	1.6E-04	0.040
GILT 15.5	0.180	-0.008	-0.273	0.624	-0.020	-0.789	0.544	0.985	0.446	0.029	4.4E-05	0.049
GILT 16	0.161	-0.032	-0.301	0.557	-0.076	-0.878	0.587	0.941	0.397	0.023	0.001	0.060
GILT 16.5	0.148	-0.052	-0.323	0.516	-0.124	-0.954	0.615	0.904	0.359	0.020	0.002	0.070
GILT 17	0.135	-0.074	-0.345	0.477	-0.175	-1.032	0.641	0.865	0.322	0.017	0.003	0.082
GILT 17.5	0.124	-0.098	-0.366	0.443	-0.232	-1.111	0.665	0.822	0.288	0.015	0.006	0.093
GILT 18	0.114	-0.121	-0.383	0.412	-0.286	-1.183	0.687	0.782	0.260	0.013	0.009	0.104
GILT 18.5	0.103	-0.138	-0.397	0.376	-0.328	-1.247	0.713	0.750	0.236	0.011	0.012	0.115
GILT 19	0.092	-0.164	-0.411	0.342	-0.390	-1.314	0.738	0.705	0.214	0.009	0.017	0.126
GILT 19.5	0.080	-0.185	-0.422	0.302	-0.446	-1.379	0.768	0.666	0.193	0.007	0.022	0.137
GILT 20	-3.4E-04	-0.501	-0.629	-0.001	-1.047	-1.798	0.999	0.335	0.106	1.2E-07	0.155	0.264
GILT 20.5	-0.010	-0.525	-0.642	-0.032	-1.116	-1.880	0.975	0.307	0.093	1.0E-04	0.172	0.282
GILT 21	-0.033	-0.537	-0.662	-0.102	-1.110	-1.894	0.921	0.317	0.095	0.001	0.198	0.309
GILT 21.5	-0.046	-0.558	-0.671	-0.143	-1.178	-1.972	0.889	0.292	0.084	0.002	0.217	0.327
GILT 22	-0.067	-1.999	-0.969*	-0.181	-2.593	-2.754	0.862	0.081	0.033	0.005	0.691	0.558
GILT 22.5	-0.076	-1.966	-0.963*	-0.207	-2.808	-2.847	0.842	0.067	0.029	0.006	0.724	0.575
GILT 23	-0.082	-1.930	-0.956*	-0.228	-3.033	-2.928	0.826	0.056	0.026	0.007	0.754	0.588
GILT 23.5	-0.089	-1.884*	-0.948*	-0.252	-3.252	-3.013	0.808	0.047	0.024	0.009	0.779	0.602
GILT 24	-0.062	-2.116	-0.970	-0.144	-3.785	-2.558	0.891	0.164	0.063	0.004	0.935	0.621
GILT 24.5	-0.068	-2.068	-0.957	-0.161	-4.049	-2.609	0.878	0.154	0.059	0.005	0.943	0.630
GILT 25	-0.073	-2.021	-0.945	-0.176	-4.319	-2.658	0.867	0.145	0.057	0.006	0.949	0.638

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels.

Table P.16 (Continued)

PANEL C1: Time Series Regression Analysis of the Primary Sample for GILT Rate Value-at-Risk Actual and Historical Value-at-Risk Actual from 2.5 years to 14.5 Years

GILT Rate Benchmark Year	*V* Time Periods											
	Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods	
	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007
	b			*t*			*p*			R^2		
GILT 2.5	-0.049	-0.049	-0.049	-0.131	-0.131	-0.131	0.908	0.908	0.908	0.008	0.008	0.008
GILT 3	0.634*	0.183	0.176	2.707	1.057	1.173	0.035	0.350	0.294	0.550	0.218	0.216
GILT 3.5	0.705*	0.182	0.164	2.922	0.875	0.863	0.019	0.415	0.416	0.516	0.113	0.096
GILT 4	0.767*	0.131	0.163	3.072	0.577	0.732	0.012	0.585	0.483	0.486	0.053	0.056
GILT 4.5	0.865**	0.305	0.288	3.595	1.130	1.140	0.003	0.288	0.277	0.499	0.124	0.098
GILT 5	0.898**	0.319	0.284	3.492	1.121	1.069	0.004	0.291	0.306	0.484	0.122	0.087
GILT 5.5	0.916**	0.322	0.271	3.368	1.095	0.983	0.005	0.302	0.345	0.466	0.117	0.075
GILT 6	0.924**	0.322	0.253	3.233	1.063	0.890	0.007	0.316	0.391	0.446	0.112	0.062
GILT 6.5	0.919**	0.312	0.227	0.009	0.339	0.448	0.009	0.339	0.448	0.423	0.102	0.049
GILT 7	0.915*	0.302	0.205	2.955	0.961	0.699	0.011	0.362	0.498	0.402	0.093	0.039
GILT 7.5	0.911*	0.295	0.181	2.828	0.920	0.607	0.014	0.381	0.555	0.381	0.086	0.030
GILT 8	0.907*	0.291	0.159	2.743	0.884	0.523	0.017	0.399	0.610	0.367	0.080	0.022
GILT 8.5	0.895*	0.280	0.130	2.586	0.831	0.423	0.023	0.427	0.680	0.340	0.071	0.015
GILT 9	0.895*	0.273	0.109	2.451	0.789	0.348	0.029	0.451	0.734	0.316	0.065	0.010
GILT 9.5	0.903*	0.269	0.091	2.397	0.752	0.282	0.032	0.471	0.783	0.307	0.059	0.007
GILT 10	0.91*	0.257	0.051	2.368	0.714	0.219	0.034	0.493	0.830	0.301	0.054	0.004
GILT 10.5	0.91*	0.257	0.051	2.337	0.683	0.153	0.036	0.512	0.881	0.296	0.049	0.002
GILT 11	0.912*	0.253	0.029	2.305	0.652	0.085	0.038	0.530	0.934	0.290	0.045	0.001
GILT 11.5	0.918*	0.244	0.006	2.285	0.611	0.018	0.040	0.556	0.986	0.287	0.040	2.7E-05
GILT 12	0.912*	0.232	-0.018	2.247	0.568	-0.051	0.043	0.584	0.960	0.280	0.035	2.2E-04
GILT 12.5	0.912*	0.218	-0.039	2.232	0.523	-0.111	0.044	0.614	0.913	0.277	0.029	0.001
GILT 13	0.905*	0.200	-0.064	2.215	0.470	-0.181	0.045	0.649	0.859	0.274	0.024	0.003
GILT 13.5	0.9*	0.185	-0.088	2.199	0.427	-0.248	0.047	0.680	0.809	0.271	0.020	0.005
GILT 14	0.892*	0.171	-0.109	2.184	0.388	-0.306	0.048	0.707	0.765	0.268	0.016	0.008
GILT 14.5	0.884	0.154	-0.129	2.155	0.345	-0.364	0.050	0.738	0.722	0.263	0.013	0.011

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels.

Table P.16 (Continued)

PANEL C2: Time Series Regression Analysis of the Primary and Secondary Sample for GILT Rate Value-at-Risk Actual and Historical Value-at-Risk Actual from 15 years to 25 Years

GILT Rate Benchmark Year	*V* Time Periods											
	Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods	
	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007
	b			*t*			*p*			R^2		
GILT 15	0.876	0.145	-0.142	2.119	0.319	-0.400	0.054	0.757	0.696	0.257	0.011	0.013
GILT 15.5	0.867	0.134	-0.154	2.103	0.292	-0.435	0.056	0.777	0.671	0.254	0.009	0.016
GILT 16	0.856	0.127	-0.165	2.066	0.274	-0.468	0.059	0.790	0.648	0.247	0.008	0.018
GILT 16.5	0.847	0.119	-0.174	2.062	0.257	-0.496	0.060	0.803	0.629	0.246	0.007	0.020
GILT 17	0.838	0.110	-0.183	2.065	0.236	-0.525	0.059	0.819	0.609	0.247	0.006	0.022
GILT 17.5	0.827	0.098	-0.193	2.067	0.209	-0.561	0.059	0.839	0.585	0.247	0.005	0.026
GILT 18	0.817	0.086	-0.200	2.074	0.184	-0.587	0.058	0.858	0.568	0.249	0.004	0.028
GILT 18.5	0.803	0.077	-0.206	2.060	0.165	-0.612	0.060	0.872	0.552	0.246	0.003	0.030
GILT 19	0.788	0.065	-0.214	2.047	0.140	-0.646	0.061	0.892	0.530	0.244	0.002	0.034
GILT 19.5	0.770	0.054	-0.220	2.023	0.117	-0.675	0.064	0.910	0.513	0.239	0.002	0.037
GILT 20	0.678	-0.315	-0.514	1.518	-0.738	-1.748	0.160	0.489	0.114	0.187	0.083	0.253
GILT 20.5	0.669	-0.317	-0.511	1.519	-0.748	-1.763	0.160	0.483	0.112	0.188	0.085	0.257
GILT 21	0.626	-0.302	-0.529	1.394	-0.794	-1.940	0.197	0.463	0.088	0.178	0.112	0.320
GILT 21.5	0.611	-0.304	-0.527	1.369	-0.809	-1.968	0.204	0.455	0.085	0.172	0.116	0.326
GILT 22	0.690	-0.706	-0.695*	1.396	-0.861	-2.532	0.205	0.453	0.045	0.218	0.198	0.517
GILT 22.5	0.675	-0.675	-0.68*	1.383	-0.856	-2.524	0.209	0.455	0.045	0.215	0.196	0.515
GILT 23	0.662	-0.641	-0.663*	1.377	-0.843	-2.498	0.211	0.461	0.047	0.213	0.192	0.510
GILT 23.5	0.648	-0.605	-0.647*	1.366	-0.825	-2.473	0.214	0.470	0.048	0.211	0.185	0.505
GILT 24	0.677	-1.573	-0.778*	1.124	-3.579	-3.070	0.312	0.173	0.037	0.202	0.928	0.702
GILT 24.5	0.660	-1.537	-0.765*	1.108	-3.817	-3.105	0.318	0.163	0.036	0.197	0.936	0.707
GILT 25	0.644	-1.503	-0.752*	1.095	-4.057	-3.138	0.324	0.154	0.035	0.193	0.943	0.711

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels.

Analysis

The Table P.16 time series regression slopes show that some of the selected GILT Government bond benchmark rate Historical Value-at-Risk Actual variable exhibits some statistically significant explanatory power to the samples and the control group Historical Value-at-Risk Actual variable for all three time periods. However, a greater level of significance is evident for the shorter maturities. These significances are evident for the time periods 1994 to 2008 and 1994 to 2007.

This suggests that the GILT Government bond benchmark rate Historical Value-at-Risk Actual variable reacted with the samples and the control group Historical Value-at-Risk Actual variable similarly before and after the 2005 accounting change.

P.14 Change in Foreign Currency Rates and Market Price Return

The regression analysis for the change in selected foreign exchange currency rates and the market price return is presented for the time range 1994 to 2008 in Table P.17. In these regressions, the market price return variable is tested as the dependent variable, and the selected foreign exchange currency rate variables for European Euro (EUR) to Great British Pound (GBP), Unites Stated Dollar (USD) to GBP and Japanese Yen (JPY) to GBP are individually tested as the independent variable.

Table P.17 Time Series Regression Analysis for Change in Foreign Exchange Currency Rates and Market Price Return

Time Series Regression

Table P.17 Panels A to C show the results for the time series regressions that test the change in selected foreign exchange currency rates and the market price return by applying the regression specified in equation (O.13). In this table, Panel A presents results for the Primary and Secondary sample; Panel B presents results for the Control group; and, Panel C presents results for the Primary sample.

Time Series Regression Table Description

The Table P.17 columns represent the following:

The Foreign Exchange Rate Currency Pair column represents the samples and the control group result panels for the selected rates.

The Rates and Returns Time Periods column represents the following:
Total Period column represents the time series regression results for the year range 1994 to 2008, with a single year represented by the number of days from 1st January to 31st December. The Sub-Periods column represents the time series regression results for the year range 1994 to 2004, and for 1994 to 2007, with a single year represented by the number of days from 1st January to 31st December.

The total and sub-period columns present the coefficients and related statistics for the regression specified in equation (O.13), and follows the model:

$$dM_{N,t} = a + b\, dCURRENCY_t + e_{N,t}$$

Where: $dM_{N,t}$ is the log Market Price return ($M_{t-1,t}$) for N firms at time t, $dCURRENCY_t$ is the change in the selected currency pair rate ($dCURRENCY_{t-1,t}$) at time t, and $e_{N,t}$ is the regression error term.

Table P.17 (Continued)

Foreign Exchange Rate Currency Pair	Rates and Returns Time Periods											
	Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods	
	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007
	b			*t*			*p*			R^2		
PANEL A: Foreign Exchange Rates vs. Primary and Secondary Sample Return												
EURO and GBP	2.103*	0.882	1.132	3.006	0.540	1.003	0.017	0.618	0.349	0.530	0.068	0.126
USD and GPB	0.984	-1.075	-0.883	1.713	-1.205	-1.282	0.110	0.259	0.224	0.184	0.139	0.120
YEN and GBP	0.934*	-0.271	-0.071	2.670	-0.410	-0.127	0.019	0.692	0.901	0.354	0.018	0.001
PANEL B: Foreign Exchange Rates vs. Control Group Return												
EURO and GBP	1.637*	1.133	1.148	2.394	0.711	0.981	0.044	0.516	0.359	0.417	0.112	0.121
USD and GPB	0.569	-0.516	-0.784	1.098	-0.560	-1.086	0.292	0.589	0.299	0.085	0.034	0.090
YEN and GBP	0.581	-0.321	-0.156	1.738	-0.499	-0.270	0.106	0.630	0.792	0.189	0.027	0.006
PANEL C: Foreign Exchange Rates vs. Primary Sample Return												
EURO and GBP	3.328**	1.387	1.660	5.139	1.184	2.075	0.001	0.302	0.077	0.768	0.259	0.381
USD and GPB	1.885*	-0.855	-0.588	2.784	-0.991	-0.841	0.015	0.348	0.417	0.374	0.098	0.056
YEN and GBP	1.63**	0.247	0.337	0.001	0.702	0.545	0.001	0.702	0.545	0.596	0.017	0.031

Table note: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels.

Analysis

The Table P.17 time series regression slopes show that some selected foreign exchange currency pair rate changes exhibit statistically significant explanatory power to the samples and the control group market price returns for the time period 1994 to 2008. However, the Primary sample slopes show statistical significance for all selected rates for the 1994 to 2008 time period.

The Primary and Secondary sample slopes show statistical significance for the EURO and GBP, and YEN and GBP rates. The Control group shows statistical significance for the EURO and GBP rate.

Examining the significant regression slopes, the Primary and Secondary sample exhibits greater magnitude, statistical significance, and model strength when compared to the Control group.

The statistically significant results suggest that the change in selected foreign exchange rates reacted in relation to the Primary and Secondary sample market price return variable after the 2005 accounting change, than the Control group reactions.

P.15 Foreign Currency Rate Value-at-Risk Actual and Historical Value-at-Risk Actual

The regression analysis for selected foreign exchange currency rate Historical Value-at-Risk Actual and market price return Historical Value-at-Risk Actual is presented for the time range 1994 to 2008 in Table P.18. In these regressions, the Historical Value-at-Risk Actual variable is tested as the dependent variable, and the selected foreign exchange currency rate Value-at-Risk Actual variables for the currency pairs European Euro (EUR) and Great British Pound (GBP), Unites Stated Dollar (USD) and GBP and Japanese Yen (JPY) and GBP are individually tested as the independent variable.

Table P.18 Time Series Regression Analysis for Foreign Exchange Currency Rates Historical Value-at-Risk Actual and Historical Value-at-Risk Actual

Time Series Regression

Table P.18 Panels A to C show the results for the time series regressions that test the selected foreign exchange currency rate Historical Value-at-Risk Actual and Historical Value-at-Risk Actual by applying the regression specified in equation (O.14). In this table, Panel A presents results for the Primary and Secondary sample; Panel B presents results for the Control group; and, Panel C presents results for the Primary sample.

Time Series Regression Table Description

The Table P.18 columns represent the following:

The Foreign Exchange Rate Currency Pair column represents the samples and the control group result panels for the selected rates.

The V Time Periods column represents the following:
The Total Period column represents the time series regression results for the year range 1994 to 2008, with a single year represented by the number of days from 1st January to 31st December. The Sub-Periods column represents the time series regression results for the year range 1994 to 2004, and for 1994 to 2007, with a single year represented by the number of days from 1st January to 31st December.

The total and sub-period columns present the coefficients and related statistics for the regression specified in equation (O.14), and follows the model:

$$V_{N,t} = a + b\,VCURRENCY_t + e_{N,t}$$

Where: $V_{N,t}$ is the Value-at-Risk (V_t) for N firms at time t, $VCURRENCY_t$ is the Value-at-Risk for the selected currency pair rate at time t, and $e_{N,t}$ is the regression error term.

Table P.18 (Continued)

Foreign Exchange Rate Currency Pair	*V* Time Periods											
	Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods		Total Period	Sub-Periods	
	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007
	b			*t*			*p*			R^2		
PANEL A: Foreign Exchange Rate *V* vs. Primary and Secondary Sample *V*												
EURO and GBP	4.498**	1.938	5.223	4.135	0.416	2.372	0.006	0.718	0.064	0.740	0.080	0.529
USD and GPB	1.087	-0.226	-0.567	1.725	-0.218	-0.691	0.108	0.833	0.503	0.186	0.005	0.038
YEN and GBP	0.815*	-0.207	0.028	2.202	-0.373	0.056	0.046	0.718	0.956	0.272	0.015	2.6E-04
PANEL B: Foreign Exchange Rate *V* vs. Control Group *V*												
EURO and GBP	3.023	1.042	4.526	2.403	0.202	1.840	0.053	0.859	0.125	0.490	0.020	0.404
USD and GPB	0.534	-0.181	-0.472	1.021	-0.202	-0.616	0.326	0.844	0.549	0.074	0.005	0.031
YEN and GBP	0.505	-0.133	0.146	1.645	-0.277	0.312	0.124	0.788	0.760	0.172	0.008	0.008
PANEL C: Foreign Exchange Rate *V* vs. Primary Sample *V*												
EURO and GBP	1.928*	0.229	-0.363	5.639	0.417	1.994	0.001	0.717	0.103	0.841	0.080	0.443
USD and GPB	1.928*	0.229	-0.363	2.718	0.232	-0.467	0.018	0.822	0.649	0.362	0.006	0.018
YEN and GBP	1.458**	0.366	0.453	3.891	0.707	0.993	0.002	0.497	0.340	0.538	0.053	0.076

Table note: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels.

Analysis

The Table P.18 time series regression slopes show that for some selected foreign exchange currency pair rate Historical Value-at-Risk Actuals exhibit statistically significant explanatory power to the Primary and Secondary sample Historical Value-at-Risk Actual for the 1994 to 2008 time period. The Primary sample slopes show statistical significance for all selected rates for the same time period.

The Primary and Secondary sample slopes show statistical significance for the EURO and GBP, and YEN and GBP rates.

This suggests that the EURO and GBP, and YEN and GBP foreign exchange rate Historical Value-at-Risk Actual variables reacted in relation to the Primary and Secondary sample market price return Historical Value-at-Risk Actual variable significantly after the 2005 accounting change, than the Control group reactions.

APPENDIX Q THE FAMA AND FRENCH BASELINE REGRESSIONS

This appendix presents analysis and results for the Fama and French (2008) baseline regression. This baseline regression tests the relation between the market value and the book-to-market ratio to expected returns.

Q.1 The Fama and French Baseline Regressions that Use Market Value and Book-to-Market Ratio to Predict Market Price Returns

The Fama and French (2008) baseline multiple regression analysis approach, for the market value and book-to-market ratio to predict future market price returns, is presented in Table Q.1. This analysis is presented for the time range 1994 to 2007. In the regressions, the 1 year forward market price return variable is tested as the dependent variable, and the market value and the book-to-market ratio variables are tested as independent variables.

Table Q.1 Regressions for Market Value (MV_t) and Book-to-Market Ratio (BM_t) to Predict Yearly Market Price Returns (dM_{t+1}) using the Fama and McBeth *t-statistic*

Yearly Regression

Table Q.1 Panel A to Panel D show the results for the multiple regressions that test the market value and the book-to-market ratio to 1 year forward market price return. The regression results presented in Table Q.1 for each time period are produced from the average cross-sectional regressions specified in equation (O.15) and presented in Table Q.2. Table Q.1 Panel A presents results for the Primary and Secondary sample; Panel B presents results for the Control group; Panel C presents results for the Primary sample; and, Panel D presents results for the Secondary sample.

Yearly Regression Table Description

The Table Q.1 columns represent the following:

The Total Period column represents the average regression results for the year range 1994 to 2007, with a single year represented by the variable value at 31st December. The Sub-Period column represents average regression results from 1994 to 2004, with a single year represented by the variable value at 31st December.

The Measure column represents, for the two independent variable data panels, the average regression results for the total and sub-time periods. This column presents the averaged coefficients, related statistics and the Fama and McBeth (1973) *t-statistic*, calculated using equation (O.16), for the regression specified in equation (O.15). Regressions are estimated on a yearly basis for $t = 1,2, \ldots T$ and represent the time range 1992 to 2007 (See Table Q.2). The results from the series of regressions are applied to produce the time period averages and the Fama and McBeth *t-statistic*. The one time period regression follows the model:

$$dM_{i,t+1} = a + b_1 MV_{i,t} + b_2 BM_{i,t} + e_{i,t+1}$$

Where: $dM_{i,t+1}$ is the one year forward log Market Price Return ($M_{t,t+1}$) for the i^{th} firm at time $t+1$, $MV_{i,t}$ is the market value (MV_t) for the i^{th} firm at time t, $BM_{i,t}$ is the book-to-market ratio (BM_t) for the i^{th} firm at time t, and $e_{i,t+1}$ is the regression error term.

Table Q.1 (Continued)

PANEL A

Regression for Market Value (MV_t) and Book-to-Market Ratio (BM_t) to Predict Yearly Market Price Returns (dM_{t+1}) for the Primary and Secondary Sample for 1992 to 2007 using the Fama and McBeth *t-statistic*

Measure			Total Period 1992-2007	Sub-Period 1992-2004
Market Value (MV_t)				
Regression	*Slope*	*b*	-0.014	-0.005
		SD(b)	0.044	0.038
		Years(T)	16	13
		t (b)	-1.303	-0.443
	Intercept	*a*	0.185	0.176
		SD(a)	0.360	0.400
		Years(T)	16	13
		t (a)	2.059	1.586
Model		R^2	0.085	0.055
		Adjusted R^2	0.066	0.054
Book-to-Market Ratio (BM_t)				
Regression	*Slope*	*b*	0.667	0.728
		SD(b)	1.055	1.079
		Years(T)	16	13
		t (b)	2.529	2.432
	Intercept	*a*	0.185	0.176
		SD(a)	0.360	0.400
		Years(T)	16	13
		t (a)	2.059	1.586
Model		R^2	0.085	0.055
		Adjusted R^2	0.066	0.054

Panel notes:
The sample consists of 16 firms in the LSE (5 banks and 11 banking related firms) that adopted the IFRS standards in 2005. Observations are based on yearly cross-sectional regressions presented in Table Q.2 from 1992 to 2007.
Coefficients *b* and *a* are averages for the specified number of *Years(T)* and represent, respectively, the slope and intercept parameters for the Fama and French (2008) baseline regression. The coefficients are calculated using the cross-sectional regressions in Table Q.2. The *SD* term is the standard deviation of the coefficients for *Years(T)* from the cross-sectional regressions in Table Q.2. Term *t* is the *t-statistic* calculated using the Fama and McBeth (1973) *t-statistic* (see equation (O.16)).

Table Q.1 (Continued)

PANEL B

Regression for Market Value (MV_t) and Book-to-Market Ratio (BM_t) to Predict Yearly Market Price Returns (dM_{t+1}) for the Control Group for 1992 to 2007 using the Fama and McBeth *t-statistic*

Measure			Total Period 1992-2007	Sub-Period 1992-2004
Market Value (MV_t)				
Regression	*Slope*	*b*	0.001	0.002
		SD(b)	0.063	0.069
		Years(T)	16	13
		t (b)	0.076	0.113
	Intercept	*a*	-0.084	-0.074
		SD(a)	0.511	0.556
		Years(T)	16	13
		t (a)	-0.655	-0.478
Model	R^2		0.358	0.394
	Adjusted R^2		0.212	0.256
Book-to-Market Ratio (BM_t)				
Regression	*Slope*	*b*	0.710	0.767
		SD(b)	1.002	0.976
		Years(T)	16	13
		t (b)	2.834	2.835
	Intercept	*a*	-0.084	-0.074
		SD(a)	0.511	0.556
		Years(T)	16	13
		t (a)	-0.655	-0.478
Model	R^2		0.358	0.394
	Adjusted R^2		0.212	0.256

Panel notes:
The sample consists of 16 firms in the LSE (5 banks and 11 banking related firms) that adopted the IFRS standards in 2005. Observations are based on yearly cross-sectional regressions presented in Table Q.2 from 1992 to 2007.
Coefficients *b* and *a* are averages for the specified number of *Years(T)* and represent, respectively, the slope and intercept parameters for the Fama and French (2008) baseline regression. The coefficients are calculated using the cross-sectional regressions in Table Q.2. The *SD* term is the standard deviation of the coefficients for *Years(T)* from the cross-sectional regressions in Table Q.2. Term *t* is the *t-statistic* calculated using the Fama and McBeth (1973) *t-statistic* (see equation (O.16)).

Table Q.1 (Continued)

PANEL C

Regression for Market Value (MV_t) and Book-to-Market Ratio (BM_t) to Predict Yearly Market Price Returns (dM_{t+1}) for the Primary Sample for 1992 to 2007 using the Fama and McBeth *t-statistic*

Measure			Total Period 1992-2007	Sub-Period 1992-2004
Market Value (MV_t)				
Regression	*Slope*	*b*	0.005	-0.048
		SD(b)	0.300	0.167
		Years(T)	16	13
		t (b)	0.061	-1.029
	Intercept	*a*	-0.008	0.688
		SD(a)	3.633	1.873
		Years(T)	16	13
		t (a)	-0.009	1.325
Model		R^2	0.692	0.723
		Adjusted R^2	0.354	0.408
Book-to-Market Ratio (BM_t)				
Regression	*Slope*	*b*	0.067	0.190
		SD(b)	1.008	1.034
		Years(T)	16	13
		t (b)	0.267	0.664
	Intercept	*a*	-0.008	0.688
		SD(a)	3.633	1.873
		Years(T)	16	13
		t (a)	-0.009	1.325
Model		R^2	0.692	0.723
		Adjusted R^2	0.354	0.408

Panel notes:
The sample consists of 16 firms in the LSE (5 banks and 11 banking related firms) that adopted the IFRS standards in 2005. Observations are based on yearly cross-sectional regressions presented in Table Q.2 from 1992 to 2007.
Coefficients *b* and *a* are averages for the specified number of *Years(T)* and represent, respectively, the slope and intercept parameters for the Fama and French (2008) baseline regression. The coefficients are calculated using the cross-sectional regressions in Table Q.2. The *SD* term is the standard deviation of the coefficients for *Years(T)* from the cross-sectional regressions in Table Q.2. Term *t* is the *t-statistic* calculated using the Fama and McBeth (1973) *t-statistic* (see equation (O.16)).

Table Q.1 (Continued)

PANEL D

Regression for Market Value (MV_t) and Book-to-Market Ratio (BM_t) to Predict Yearly Market Price Returns (dM_{t+1}) for the Secondary Sample for 1992 to 2007 using the Fama and McBeth *t-statistic*

Measure			Total Period 1992-2007	Sub-Period 1992-2004
Market Value (MV_t)				
Regression	*Slope*	*b*	0.001	0.002
		SD(b)	0.063	0.069
		Years(T)	16	13
		t (b)	0.076	0.113
	Intercept	*a*	-0.084	-0.074
		SD(a)	0.511	0.556
		Years(T)	16	13
		t (a)	-0.655	-0.478
Model		R^2	0.358	0.394
		Adjusted R^2	0.212	0.256
Book-to-Market Ratio (BM_t)				
Regression	*Slope*	*b*	0.667	0.728
		SD(b)	1.055	1.079
		Years(T)	16	13
		t (b)	2.529	2.432
	Intercept	*a*	-0.084	-0.074
		SD(a)	0.511	0.556
		Years(T)	16	13
		t (a)	-0.655	-0.478
Model		R^2	0.358	0.394
		Adjusted R^2	0.212	0.256

Panel notes:
The sample consists of 16 firms in the LSE (5 banks and 11 banking related firms) that adopted the IFRS standards in 2005. Observations are based on yearly cross-sectional regressions presented in Table Q.2 from 1992 to 2007.
Coefficients *b* and *a* are averages for the specified number of *Years(T)* and represent, respectively, the slope and intercept parameters for the Fama and French (2008) baseline regression. The coefficients are calculated using the cross-sectional regressions in Table Q.2. The *SD* term is the standard deviation of the coefficients for *Years(T)* from the cross-sectional regressions in Table Q.2. Term *t* is the *t-statistic* calculated using the Fama and McBeth (1973) *t-statistic* (see equation (O.16)).

Table Q.2 Regressions for Market Value (MV_t) and Book-to-Market Ratio (BM_t) to Predict Yearly Market Price Returns (dM_{t+1})

Cross-Sectional Regression

Table Q.2 Panels A1 to D2 show the results for the cross-sectional multiple regressions that test the market value and book-to-market variables to the 1 year forward market price return by applying the regression specified in equation (O.15). In the regressions, the 1 year forward market price return variable is tested as the dependent variable, and the market value and the book-to-market ratio variables are tested as independent variables.

Table Q.2 Panels A1 and A2 present results for the Primary and Secondary sample; Panels B1 and B2 present results for the Control group; Panels C1 and C2 present results for the Primary sample; and, Panels D1 and D2 present results for the Secondary sample.

In Table Q.2 for the 1 year forward market price return dependent variable: Panels A1; B1; C1; and, D1 represent the multiple regression results for the independent variable, market value; and, Panels A2; B2; C2; and, D2 represent the multiple regression results for the independent variable, the book-to-market ratio.

Cross-Sectional Regression Table Description

The Table Q.2 columns represent the following:

Year is the *panel data* year represented by the number of days from 1st January to 31st December, and also represents the 31st December variable record date for each year.

The Regression column presents the coefficients and related statistics for the regression specified in equation (O.15) and follows the model:

$$dM_{i,t+1} = a + b_1 MV_{i,t} + b_2 BM_{i,t} + e_{i,t+1}$$

Where: $dM_{i,t+1}$ is the one year forward log Market Price Return ($M_{t,t+t}$) for the i^{th} firm at time $t+1$, $MV_{i,t}$ is the market value (MV_t) for the i^{th} firm at time t, $BM_{i,t}$ is the book-to-market ratio (BM_t) for the i^{th} firm at time t, and $e_{i,t+1}$ is the regression error term. The *Lower* and *Upper* are the corresponding coefficient levels predicted at a 99% confidence level.

The Correlation column presents the correlation statistics for the variable pairs. The Descriptive Statistics column presents for the independent variable, the sample mean calculated using equation (O.17) and the sample standard deviation, *SD*, using equation (O.18). The *Obs.* column presents the number of sample firms observed for the year.

Table Q.2 (Continued)

PANEL A1: Regression for Market Value (MV_t) from the regression with Book-to-Market Ratio (BM_t) to Predict Yearly Market Price Returns (dM_{t+1}) for the Primary and Secondary Sample for 1992 to 2007

Year	Regression														Correlation				Descriptive Statistics		Obs.
	Slope					Intercept					Model				dM_{t+1}, MV_t		MV_t, BM_t				
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*Adj.* R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*r*	*p(r)*	*Mean*	*SD*	
1992	-0.023	-0.68	0.51	-0.13	0.08	0.698**	9.09	0.00	0.38	0.76	0.07	0.03	0.24	11	-0.276	0.17	-0.251	0.19	-0.07	0.67	14
1993	-0.027	-0.82	0.43	-0.13	0.08	0.203	0.29	0.78	-0.19	0.23	0.02	-0.09	0.19	10	-0.238	0.22	0.048	0.44	-0.53	0.62	13
1994	0.015	0.53	0.61	-0.07	0.10	0.114**	3.84	0.00	0.04	0.39	0.03	0.01	0.16	10	0.116	0.35	0.088	0.39	-0.48	0.55	13
1995	0.072**	6.27	0.00	0.04	0.11	-0.399	1.83	0.09	-0.06	0.25	0.09	0.74	0.07	11	0.884**	0.00	0.045	0.44	-0.64	0.63	14
1996	-0.022	-0.78	0.45	-0.11	0.06	0.375**	3.44	0.00	0.03	0.43	0.02	-0.08	0.18	12	-0.193	0.25	-0.131	0.32	-0.60	0.62	15
1997	-0.038	-1.00	0.34	-0.15	0.08	0.294	0.53	0.60	-0.20	0.29	0.03	-0.07	0.23	12	-0.245	0.19	-0.279	0.16	-0.67	0.73	15
1998	0.001	0.02	0.98	-0.13	0.13	0.325**	4.00	0.00	0.09	0.59	0.02	-0.11	0.25	12	-0.044	0.44	-0.215	0.22	-0.75	0.80	15
1999	-0.053	-1.01	0.33	-0.21	0.10	0.493	0.90	0.38	-0.28	0.52	0.08	-0.05	0.35	13	-0.202	0.23	-0.333	0.10	-0.84	0.77	16
2000	0.025	0.75	0.47	-0.08	0.13	-0.249	-0.70	0.50	-0.32	0.20	0.08	0.06	0.24	13	0.086	0.38	-0.252	0.17	-0.85	0.82	16
2001	0.054	1.26	0.23	-0.08	0.18	-0.678*	-2.50	0.03	-0.64	0.06	0.12	0.03	0.31	13	0.222	0.20	-0.330	0.11	-0.65	0.63	16
2002	-0.015	-0.51	0.62	-0.10	0.07	0.357**	4.69	0.00	0.09	0.42	0.02	-0.08	0.19	13	-0.238	0.19	-0.598**	0.01	-0.32	0.53	16
2003	-0.003	-0.28	0.79	-0.04	0.03	0.139**	4.15	0.00	0.03	0.20	0.01	0.02	0.09	13	-0.263	0.16	-0.525*	0.02	-0.46	0.53	16
2004	-0.045	-1.78	0.10	-0.12	0.03	0.616**	4.37	0.00	0.10	0.52	0.13	0.28	0.18	13	-0.564*	0.01	-0.458*	0.04	-0.51	0.49	16
2005	-0.027*	-2.40	0.03	-0.06	0.01	0.322**	3.40	0.00	0.01	0.22	0.03	0.29	0.08	13	-0.411	0.06	-0.275	0.15	-0.55	0.50	16
2006	-0.025	-0.67	0.52	-0.14	0.09	0.214	0.21	0.84	-0.27	0.31	0.08	0.01	0.27	13	-0.249	0.18	-0.246	0.18	-0.58	0.55	16
2007	-0.115	-1.35	0.20	-0.37	0.14	0.141**	-3.67	0.00	-1.40	-0.15	0.54	0.05	0.62	13	-0.320	0.11	-0.070	0.40	-0.41	0.49	16

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The sample consists of a maximum of 16 observations per yearly regression from 16 firms in the LSE consisting of the 5 banks and 11 banking related firms that adopted the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table Q.2 (Continued)

PANEL A2: Regression for Book-to-Market Ratio (BM_t) with Market Value (MV_t) to Predict Yearly Market Price Returns (dM_{t+1}) for the Primary and Secondary Sample for 1992 to 2007

Year	Regression														Correlation				Descriptive Statistics		*Obs.*
	Slope					Intercept					Model				dM_{t+1}, BM_t		MV_t, BM_t				
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*Adj.* R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*r*	*p(r)*	*Mean*	*SD*	
1992	0.119	1.17	0.27	-0.20	0.44	0.698**	3.45	0.01	0.07	1.33	0.07	0.03	0.24	11	0.380	0.09	-0.251	0.07	-0.07	0.67	14
1993	0.054	0.62	0.55	-0.22	0.33	0.203	0.87	0.41	-0.54	0.94	0.02	-0.09	0.19	10	0.176	0.28	0.048*	0.03	-0.53	0.62	13
1994	-0.113	-1.39	0.20	-0.37	0.14	0.114	0.57	0.58	-0.52	0.75	0.03	0.01	0.16	10	-0.388	0.10	0.088	0.42	-0.48	0.55	13
1995	-0.004	-0.15	0.88	-0.10	0.09	-0.399**	-4.82	0.00	-0.66	-0.14	0.09	0.74	0.07	11	0.019	0.47	0.045	0.09	-0.62	0.65	14
1996	-0.057	-0.72	0.49	-0.30	0.18	0.375	1.87	0.09	-0.24	0.99	0.02	-0.08	0.18	12	-0.172	0.27	-0.131	0.19	-0.60	0.62	15
1997	-0.047	-0.54	0.60	-0.31	0.22	0.294	1.12	0.29	-0.51	1.10	0.03	-0.07	0.23	12	-0.074	0.40	-0.279	0.49	-0.67	0.73	15
1998	0.071	0.80	0.44	-0.20	0.34	0.325	1.04	0.32	-0.63	1.28	0.02	-0.11	0.25	12	0.230	0.21	-0.215	0.06	-0.68	0.77	15
1999	-0.109	-0.86	0.40	-0.49	0.27	0.493	1.25	0.23	-0.69	1.68	0.08	-0.05	0.35	13	-0.148	0.29	-0.333*	0.03	-0.84	0.77	16
2000	0.131	1.66	0.12	-0.11	0.37	-0.249	-0.94	0.37	-1.05	0.55	0.08	0.06	0.24	13	0.382	0.07	-0.252	0.22	-0.85	0.82	16
2001	0.179	1.31	0.21	-0.23	0.59	-0.678	-2.07	0.06	-1.66	0.31	0.12	0.03	0.31	13	0.241	0.18	-0.330	0.11	-0.65	0.63	16
2002	0.039	0.33	0.74	-0.31	0.39	0.357	1.74	0.11	-0.26	0.98	0.02	-0.08	0.19	13	0.214	0.21	-0.598	0.27	-0.32	0.53	16
2003	0.056	1.15	0.27	-0.09	0.20	0.139	1.55	0.15	-0.13	0.41	0.01	0.02	0.09	13	0.387	0.07	-0.525	0.27	-0.46	0.53	16
2004	0.118	1.11	0.29	-0.20	0.44	0.616**	3.32	0.01	0.06	1.17	0.13	0.28	0.18	13	0.475*	0.03	-0.458	0.15	-0.51	0.49	16
2005	-0.092	-2.13	0.05	-0.22	0.04	0.322**	3.59	0.00	0.05	0.59	0.03	0.29	0.08	13	-0.332	0.10	-0.275**	0.01	-0.55	0.50	16
2006	0.145	1.11	0.29	-0.25	0.54	0.214	0.70	0.50	-0.71	1.14	0.08	0.01	0.27	13	0.337	0.10	-0.246	0.45	-0.58	0.55	16
2007	-0.361	-1.11	0.29	-1.34	0.62	0.141	0.20	0.85	-1.99	2.27	0.54	0.05	0.62	13	-0.255	0.17	-0.070	0.23	-0.41	0.49	16

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The sample consists of a maximum of 16 observations per yearly regression from 16 firms in the LSE consisting of the 5 banks and 11 banking related firms that adopted the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table Q.2 (Continued)

PANEL B1: Regression for Market Value (MV_t) from the regression with Book-to-Market Ratio (BM_t) to Predict Yearly Market Price Returns (dM_{t+1}) for the Control Group for 1992 to 2007

Year	Regression														Correlation				Descriptive Statistics		Obs.
	Slope					Intercept					Model				dM_{t+1}, MV_t		MV_t, BM_t				
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*Adj.* R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*r*	*p(r)*	*Mean*	*SD*	
1992	-0.072**	-3.71	0.00	-0.14	-0.01	0.597**	4.84	0.00	0.20	1.00	0.68	0.61	0.10	9	-0.73**	0.00	-0.080	0.40	5.24	1.56	12
1993	-0.002	-0.05	0.96	-0.11	0.11	-0.140	-0.76	0.47	-0.76	0.48	0.35	0.19	0.11	8	0.261	0.22	0.466	0.07	5.84	1.19	11
1994	0.043*	2.74	0.03	-0.01	0.10	-0.138	-1.46	0.18	-0.46	0.18	0.49	0.36	0.06	8	0.687**	0.01	0.076	0.41	5.80	1.11	11
1995	0.081	1.98	0.08	-0.06	0.22	-0.584*	-2.33	0.05	-1.43	0.26	0.46	0.33	0.15	8	0.548*	0.04	0.083	0.40	5.90	1.16	11
1996	0.085**	3.47	0.01	0.01	0.16	-0.428*	-2.92	0.02	-0.90	0.05	0.60	0.52	0.11	9	0.76**	0.00	0.145	0.33	5.73	1.37	12
1997	0.108*	2.43	0.04	-0.04	0.25	-1.030	-2.12	0.06	-2.61	0.55	0.40	0.26	0.20	9	0.583*	0.02	-0.385	0.11	5.85	1.49	12
1998	-0.118	-2.03	0.07	-0.31	0.07	0.692	1.22	0.25	-1.15	2.54	0.47	0.35	0.29	9	-0.639*	0.01	-0.392	0.10	5.73	1.64	12
1999	0.034	0.63	0.54	-0.14	0.21	-0.807	-1.53	0.16	-2.52	0.91	0.33	0.18	0.23	9	-0.064	0.42	-0.407	0.09	6.04	1.41	12
2000	0.031	1.35	0.21	-0.04	0.11	-0.404	-1.70	0.12	-1.17	0.37	0.22	0.04	0.08	9	0.458	0.07	-0.669**	0.01	6.01	1.40	12
2001	-0.075	-1.81	0.10	-0.21	0.06	0.110	0.30	0.77	-1.07	1.29	0.38	0.24	0.16	9	-0.614*	0.02	-0.602*	0.02	5.79	1.43	12
2002	-0.020	-0.61	0.56	-0.13	0.09	0.299	1.35	0.21	-0.42	1.02	0.08	-0.13	0.14	9	-0.232	0.23	-0.198	0.27	5.47	1.32	12
2003	-0.044*	-2.99	0.02	-0.09	0.00	0.331**	3.36	0.01	0.01	0.65	0.52	0.41	0.06	9	-0.69**	0.01	0.007	0.49	5.71	1.30	12
2004	-0.025	-0.76	0.46	-0.13	0.08	0.543*	3.05	0.01	-0.04	1.12	0.16	-0.03	0.12	9	-0.346	0.14	0.409	0.09	5.82	1.24	12
2005	-0.037	-0.95	0.37	-0.17	0.09	0.108	0.49	0.64	-0.61	0.82	0.52	0.42	0.14	9	0.137	0.34	0.477	0.06	6.11	1.19	12
2006	0.011	0.15	0.89	-0.24	0.26	-0.008	-0.02	0.99	-1.38	1.36	0.00	-0.22	0.27	9	0.025	0.47	0.462	0.07	6.14	1.20	12
2007	0.017	0.32	0.76	-0.16	0.19	-0.480	-1.37	0.20	-1.61	0.65	0.07	-0.14	0.22	9	0.149	0.32	-0.203	0.26	6.06	1.25	12

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The Control group consists of a maximum of 12 observations per yearly regression from 12 banking related firms in the LSE that did not adopt the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table Q.2 (Continued)

PANEL B2: Regression for Book-to-Market Ratio (BM_t) with Market Value (MV_t) to Predict Yearly Market Price Returns (dM_{t+1}) for the Control Group for 1992 to 2007

Year	Regression														Correlation				Descriptive Statistics		*Obs.*
	Slope					Intercept					Model				dM_{t+1}, BM_t		MV_t, BM_t				
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*Adj.* R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*r*	*p(r)*	*Mean*	*SD*	
1992	0.804	2.07	0.07	-0.46	2.06	0.597**	4.84	0.00	0.20	1.00	0.68	0.61	0.10	9	0.446	0.07	-0.080	0.40	0.14	0.08	12
1993	0.858	1.85	0.10	-0.69	2.41	-0.140	-0.76	0.47	-0.76	0.48	0.35	0.19	0.11	8	0.59*	0.03	0.466	0.07	0.07	0.09	11
1994	-0.143	-0.49	0.64	-1.12	0.83	-0.138	-1.46	0.18	-0.46	0.18	0.49	0.36	0.06	8	-0.072	0.42	0.076	0.41	0.08	0.06	11
1995	1.105	1.56	0.16	-1.27	3.48	-0.584*	-2.33	0.05	-1.43	0.26	0.46	0.33	0.15	8	0.449	0.08	0.083	0.40	0.11	0.07	11
1996	0.259	0.79	0.45	-0.81	1.33	-0.428*	-2.92	0.02	-0.90	0.05	0.60	0.52	0.11	9	0.274	0.19	0.145	0.33	0.17	0.10	12
1997	1.956	0.91	0.39	-5.02	8.93	-1.030	-2.12	0.06	-2.61	0.55	0.40	0.26	0.20	9	-0.007	0.49	-0.385	0.11	0.15	0.03	12
1998	1.607	0.99	0.35	-3.69	6.91	0.692	1.22	0.25	-1.15	2.54	0.47	0.35	0.29	9	0.471	0.06	-0.392	0.10	0.21	0.06	12
1999	3.095	2.08	0.07	-1.74	7.93	-0.807	-1.53	0.16	-2.52	0.91	0.33	0.18	0.23	9	0.545*	0.03	-0.407	0.09	0.20	0.05	12
2000	0.214	0.29	0.78	-2.19	2.62	-0.404	-1.70	0.12	-1.17	0.37	0.22	0.04	0.08	9	-0.243	0.22	-0.669**	0.01	0.16	0.04	12
2001	0.082	0.09	0.93	-2.98	3.14	0.110	0.30	0.77	-1.07	1.29	0.38	0.24	0.16	9	0.388	0.11	-0.602*	0.02	0.17	0.06	12
2002	0.294	0.50	0.63	-1.64	2.22	0.299	1.35	0.21	-0.42	1.02	0.08	-0.13	0.14	9	0.201	0.27	-0.198	0.27	0.16	0.07	12
2003	0.269	0.89	0.40	-0.72	1.26	0.331**	3.36	0.01	0.01	0.65	0.52	0.41	0.06	9	0.200	0.27	0.007	0.49	0.16	0.06	12
2004	-0.428	-0.66	0.53	-2.55	1.69	0.543*	3.05	0.01	-0.04	1.12	0.16	-0.03	0.12	9	-0.324	0.15	0.409	0.09	0.16	0.06	12
2005	1.971	3.09	0.01	-0.10	4.04	0.108	0.49	0.64	-0.61	0.82	0.52	0.42	0.14	9	0.69**	0.01	0.477	0.06	0.11	0.07	12
2006	-0.344	-0.17	0.87	-6.82	6.14	-0.008	-0.02	0.99	-1.38	1.36	0.00	-0.22	0.27	9	-0.040	0.45	0.462	0.07	0.12	0.05	12
2007	-0.239	-0.65	0.53	-1.43	0.95	-0.480	-1.37	0.20	-1.61	0.65	0.07	-0.14	0.22	9	-0.236	0.23	-0.203	0.26	0.19	0.18	12

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The Control group consists of a maximum of 12 observations per yearly regression from 12 banking related firms in the LSE that did not adopt the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table Q.2 (Continued)

PANEL C1: Regression for Market Value (MV_t) from the regression with Book-to-Market Ratio (BM_t) to Predict Yearly Market Price Returns (dM_{t+1}) for the Primary Sample for 1992 to 2007

Year	Regression														Correlation				Descriptive Statistics		*Obs.*
	Slope					Intercept					Model				dM_{t+1}, MV_t		MV_t, BM_t				
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*Adj.* R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*r*	*p(r)*	*Mean*	*SD*	
1992	-0.152	-3.73	0.17	-2.75	2.45	1.837	5.82	0.11	-18.25	21.93	0.93	0.80	0.05	1	-0.844	0.08	-0.474	0.26	7.85	0.79	4
1993	-0.085	-1.12	0.46	-4.91	4.74	1.135	1.86	0.31	-37.66	39.93	0.96	0.87	0.08	1	-0.589	0.21	-0.394	0.30	8.52	0.69	4
1994	-0.484*	-42.25	0.02	-1.21	0.25	5.502*	48.15	0.01	-1.77	12.78	1.00	1.00	0.01	1	-0.439	0.28	0.603	0.20	8.48	0.59	4
1995	0.276**	90.49	0.01	0.08	0.47	-2.479**	-79.72	0.01	-4.46	-0.50	1.00	1.00	0.00	1	0.833	0.08	0.754	0.12	8.81	0.53	4
1996	0.044	0.29	0.82	-9.62	9.71	0.782	0.53	0.69	-93.27	94.83	0.88	0.63	0.15	1	0.244	0.38	0.153	0.42	9.03	0.59	4
1997	-0.048	-0.37	0.78	-8.32	8.22	1.237	1.42	0.39	-54.06	56.53	0.77	0.32	0.11	1	-0.726	0.14	-0.696	0.15	9.27	0.67	4
1998	-0.051	-1.00	0.50	-3.26	3.16	-1.601	-1.99	0.30	-52.74	49.54	0.97	0.92	0.05	1	-0.536	0.23	0.397	0.30	9.25	0.58	4
1999	-0.029	-0.24	0.83	-1.19	1.13	0.568	0.48	0.68	-11.15	12.28	0.09	-0.82	0.19	2	-0.229	0.36	-0.287	0.32	10.13	0.84	5
2000	0.008	0.06	0.96	-1.28	1.29	-0.083	-0.06	0.96	-13.56	13.39	0.00	-0.99	0.19	2	0.035	0.48	-0.175	0.39	10.48	0.76	5
2001	0.067	1.20	0.35	-0.48	0.62	-0.346	-0.65	0.58	-5.67	4.97	0.90	0.80	0.08	2	-0.145	0.41	-0.427	0.24	10.46	0.79	5
2002	-0.039	-0.58	0.62	-0.70	0.62	0.847	1.19	0.35	-6.19	7.88	0.62	0.24	0.10	2	-0.198	0.37	0.076	0.45	10.21	0.77	5
2003	-0.060	-1.66	0.24	-0.42	0.30	0.997	2.06	0.18	-3.81	5.80	0.68	0.36	0.05	2	-0.258	0.34	0.583	0.15	10.42	0.81	5
2004	-0.067	-0.55	0.64	-1.27	1.14	0.553	0.31	0.79	-17.31	18.42	0.60	0.20	0.10	2	-0.752	0.07	0.846*	0.04	10.50	0.81	5
2005	-0.090	-1.47	0.28	-0.70	0.52	1.130	1.48	0.28	-6.47	8.73	0.59	0.18	0.06	2	-0.755	0.07	0.663	0.11	10.61	0.70	5
2006	-0.190	-0.62	0.60	-3.23	2.85	1.833	0.49	0.67	-35.21	38.87	0.26	-0.48	0.30	2	-0.510	0.19	0.627	0.13	10.74	0.63	5
2007	0.971	2.39	0.14	-3.07	5.01	-12.045	-2.72	0.11	-56.03	31.94	0.82	0.65	0.40	2	0.381	0.26	0.442	0.23	10.60	0.55	5

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The sample consists of a maximum of 5 observations per yearly regression from 16 firms in the LSE consisting of the 5 banks and 11 banking related firms that adopted the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table Q.2 (Continued)

PANEL C2: Regression for Book-to-Market Ratio (BM_t) with Market Value (MV_t) to Predict Yearly Market Price Returns (dM_{t+1}) for the Primary Sample for 1992 to 2007

	Regression														Correlation				Descriptive Statistics		
Year	Slope					Intercept					Model				dM_{t+1}, BM_t		MV_t, BM_t				*Obs.*
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*Adj.* R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*r*	*p(r)*	*Mean*	*SD*	
1992	-0.172	-1.81	0.32	-6.22	5.87	1.837	5.82	0.11	-18.25	21.93	0.93	0.80	0.05	1	0.380	0.49	-0.014	0.26	-0.14	0.34	4
1993	0.657	3.71	0.17	-10.61	11.92	1.135	1.86	0.31	-37.66	39.93	0.96	0.87	0.08	1	0.176*	0.03	0.949	0.30	-0.71	0.30	4
1994	1.758*	42.55	0.01	-0.87	4.39	5.502*	48.15	0.01	-1.77	12.78	1.00	1.00	0.01	1	-0.388	0.27	0.452	0.20	-0.61	0.16	4
1995	-0.345*	-51.89	0.01	-0.77	0.08	-2.479**	-79.72	0.01	-4.46	-0.50	1.00	1.00	2E-03	1	0.019	0.37	0.264	0.12	-0.79	0.24	4
1996	1.085	2.56	0.24	-25.93	28.10	0.782	0.53	0.69	-93.27	94.83	0.88	0.63	0.15	1	-0.172*	0.04	0.930	0.42	-0.88	0.21	4
1997	0.814	1.05	0.49	-48.71	50.34	1.237	1.42	0.39	-54.06	56.53	0.77	0.32	0.11	1	-0.074	0.07	0.862	0.15	-1.02	0.11	4
1998	-2.637	-5.07	0.12	-35.71	30.44	-1.601	-1.99	0.30	-52.74	49.54	0.97	0.92	0.05	1	0.23*	0.01	-0.973	0.30	-0.95	0.06	4
1999	0.143	0.29	0.80	-4.79	5.08	0.568	0.48	0.68	-11.15	12.28	0.09	-0.82	0.19	2	-0.148	0.34	0.251	0.32	-1.30	0.20	5
2000	0.033	0.07	0.95	-4.42	4.49	-0.083	-0.06	0.96	-13.56	13.39	4E-03	-0.99	0.19	2	0.382	0.47	0.044	0.39	-1.05	0.22	5
2001	0.672	4.17	0.05	-0.93	2.27	-0.346	-0.65	0.58	-5.67	4.97	0.90	0.80	0.08	2	0.241*	0.02	0.909	0.24	-0.92	0.27	5
2002	0.376	1.74	0.22	-1.77	2.52	0.847	1.19	0.35	-6.19	7.88	0.62	0.24	0.10	2	0.214	0.07	0.744	0.45	-0.73	0.24	5
2003	0.370	1.96	0.19	-1.51	2.25	0.997	2.06	0.18	-3.81	5.80	0.68	0.36	0.05	2	0.387	0.20	0.486	0.15	-0.83	0.15	5
2004	-0.278	-0.40	0.73	-7.11	6.56	0.553	0.31	0.79	-17.31	18.42	0.60	0.20	0.10	2	0.475	0.08	-0.732*	0.04	-0.85	0.14	5
2005	0.069	0.33	0.77	-1.99	2.13	1.130	1.48	0.28	-6.47	8.73	0.59	0.18	0.06	2	-0.332	0.26	-0.388	0.11	-0.77	0.21	5
2006	-0.045	-0.06	0.96	-8.17	8.08	1.833	0.49	0.67	-35.21	38.87	0.26	-0.48	0.30	2	0.337	0.28	-0.345	0.13	-0.79	0.24	5
2007	-1.424	-2.78	0.11	-6.50	3.65	-12.045	-2.72	0.11	-56.03	31.94	0.82	0.65	0.40	2	-0.255	0.16	-0.570	0.23	-0.48	0.44	5

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The sample consists of a maximum of 5 observations per yearly regression from 16 firms in the LSE consisting of the 5 banks and 11 banking related firms that adopted the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table Q.2 (Continued)

PANEL D1: Regression for Market Value (MV_t) from the regression with Book-to-Market Ratio (BM_t) to Predict Yearly Market Price Returns (dM_{t+1}) for the Secondary Sample for 1992 to 2007

	Regression														Correlation				Descriptive Statistics		
Year	Slope					Intercept					Model				dM_{t+1}, MV_t		MV_t, BM_t				*Obs.*
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*Adj.* R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*r*	*p(r)*	*Mean*	*SD*	
1992	-0.072**	-3.71	5E-03	-0.14	-0.01	0.597**	4.84	9E-04	0.20	1.00	0.68	0.61	0.10	9	-0.73**	4E-03	-0.080	0.40	5.24	1.56	12
1993	-0.002	-0.05	0.96	-0.11	0.11	-0.140	-0.76	0.47	-0.76	0.48	0.35	0.19	0.11	8	0.261	0.22	0.466	0.07	5.84	1.19	11
1994	0.043*	2.74	0.03	-0.01	0.10	-0.138	-1.46	0.18	-0.46	0.18	0.49	0.36	0.06	8	0.687**	0.01	0.076	0.41	5.80	1.11	11
1995	0.081	1.98	0.08	-0.06	0.22	-0.584*	-2.33	0.05	-1.43	0.26	0.46	0.33	0.15	8	0.548*	0.04	0.083	0.40	5.90	1.16	11
1996	0.085**	3.47	0.01	0.01	0.16	-0.428*	-2.92	0.02	-0.90	0.05	0.60	0.52	0.11	9	0.76**	2E-03	0.145	0.33	5.73	1.37	12
1997	0.108*	2.43	0.04	-0.04	0.25	-1.030	-2.12	0.06	-2.61	0.55	0.40	0.26	0.20	9	0.583*	0.02	-0.385	0.11	5.85	1.49	12
1998	-0.118	-2.03	0.07	-0.31	0.07	0.692	1.22	0.25	-1.15	2.54	0.47	0.35	0.29	9	-0.639*	0.01	-0.392	0.10	5.73	1.64	12
1999	0.034	0.63	0.54	-0.14	0.21	-0.807	-1.53	0.16	-2.52	0.91	0.33	0.18	0.23	9	-0.064	0.42	-0.407	0.09	6.04	1.41	12
2000	0.031	1.35	0.21	-0.04	0.11	-0.404	-1.70	0.12	-1.17	0.37	0.22	0.04	0.08	9	0.458	0.07	-0.669**	0.01	6.01	1.40	12
2001	-0.075	-1.81	0.10	-0.21	0.06	0.110	0.30	0.77	-1.07	1.29	0.38	0.24	0.16	9	-0.614*	0.02	-0.602*	0.02	5.79	1.43	12
2002	-0.020	-0.61	0.56	-0.13	0.09	0.299	1.35	0.21	-0.42	1.02	0.08	-0.13	0.14	9	-0.232	0.23	-0.198	0.27	5.47	1.32	12
2003	-0.044*	-2.99	0.02	-0.09	4E-03	0.331**	3.36	0.01	0.01	0.65	0.52	0.41	0.06	9	-0.69**	0.01	0.007	0.49	5.71	1.30	12
2004	-0.025	-0.76	0.46	-0.13	0.08	0.543*	3.05	0.01	-0.04	1.12	0.16	-0.03	0.12	9	-0.346	0.14	0.409	0.09	5.82	1.24	12
2005	-0.037	-0.95	0.37	-0.17	0.09	0.108	0.49	0.64	-0.61	0.82	0.52	0.42	0.14	9	0.137	0.34	0.477	0.06	6.11	1.19	12
2006	0.011	0.15	0.89	-0.24	0.26	-0.008	-0.02	0.99	-1.38	1.36	4E-03	-0.22	0.27	9	0.025	0.47	0.462	0.07	6.14	1.20	12
2007	0.017	0.32	0.76	-0.16	0.19	-0.480	-1.37	0.20	-1.61	0.65	0.07	-0.14	0.22	9	0.149	0.32	-0.203	0.26	6.06	1.25	12

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The sample consists of a maximum of 11 observations per yearly regression from 11 banking related firms in the LSE that adopted the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table Q.2 (Continued)

PANEL D2: Regression for Book-to-Market Ratio (BM_t) with Market Value (MV_t) to Predict Yearly Market Price Returns (dM_{t+1}) for the Secondary Sample for 1992 to 2007

Year	Regression														Correlation				Descriptive Statistics		*Obs.*
	Slope					Intercept					Model				dM_{t+1}, BM_t		MV_t, BM_t				
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*Adj.* R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*r*	*p(r)*	*Mean*	*SD*	
1992	0.119	2.07	0.07	-0.46	2.06	0.597**	4.84	9E-04	0.20	1.00	0.68	0.61	0.10	9	0.446	0.07	-0.080	0.40	0.14	0.08	12
1993	0.054	1.85	0.10	-0.69	2.41	-0.140	-0.76	0.47	-0.76	0.48	0.35	0.19	0.11	8	0.59*	0.03	0.466	0.07	0.07	0.09	11
1994	-0.113	-0.49	0.64	-1.12	0.83	-0.138	-1.46	0.18	-0.46	0.18	0.49	0.36	0.06	8	-0.072	0.42	0.076	0.41	0.08	0.06	11
1995	-0.004	1.56	0.16	-1.27	3.48	-0.584*	-2.33	0.05	-1.43	0.26	0.46	0.33	0.15	8	0.449	0.08	0.083	0.40	0.11	0.07	11
1996	-0.057	0.79	0.45	-0.81	1.33	-0.428*	-2.92	0.02	-0.90	0.05	0.60	0.52	0.11	9	0.274	0.19	0.145	0.33	0.17	0.10	12
1997	-0.047	0.91	0.39	-5.02	8.93	-1.030	-2.12	0.06	-2.61	0.55	0.40	0.26	0.20	9	-0.007	0.49	-0.385	0.11	0.15	0.03	12
1998	0.071	0.99	0.35	-3.69	6.91	0.692	1.22	0.25	-1.15	2.54	0.47	0.35	0.29	9	0.471	0.06	-0.392	0.10	0.21	0.06	12
1999	-0.109	2.08	0.07	-1.74	7.93	-0.807	-1.53	0.16	-2.52	0.91	0.33	0.18	0.23	9	0.545*	0.03	-0.407	0.09	0.20	0.05	12
2000	0.131	0.29	0.78	-2.19	2.62	-0.404	-1.70	0.12	-1.17	0.37	0.22	0.04	0.08	9	-0.243	0.22	-0.669**	0.01	0.16	0.04	12
2001	0.179	0.09	0.93	-2.98	3.14	0.110	0.30	0.77	-1.07	1.29	0.38	0.24	0.16	9	0.388	0.11	-0.602*	0.02	0.17	0.06	12
2002	0.039	0.50	0.63	-1.64	2.22	0.299	1.35	0.21	-0.42	1.02	0.08	-0.13	0.14	9	0.201	0.27	-0.198	0.27	0.16	0.07	12
2003	0.056	0.89	0.40	-0.72	1.26	0.331**	3.36	0.01	0.01	0.65	0.52	0.41	0.06	9	0.200	0.27	0.007	0.49	0.16	0.06	12
2004	0.118	-0.66	0.53	-2.55	1.69	0.543*	3.05	0.01	-0.04	1.12	0.16	-0.03	0.12	9	-0.324	0.15	0.409	0.09	0.16	0.06	12
2005	-0.092	3.09	0.01	-0.10	4.04	0.108	0.49	0.64	-0.61	0.82	0.52	0.42	0.14	9	0.69**	0.01	0.477	0.06	0.11	0.07	12
2006	0.145	-0.17	0.87	-6.82	6.14	-0.008	-0.02	0.99	-1.38	1.36	4E-03	-0.22	0.27	9	-0.040	0.45	0.462	0.07	0.12	0.05	12
2007	-0.361	-0.65	0.53	-1.43	0.95	-0.480	-1.37	0.20	-1.61	0.65	0.07	-0.14	0.22	9	-0.236	0.23	-0.203	0.26	0.19	0.18	12

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The sample consists of a maximum of 11 observations per yearly regression from 11 banking related firms in the LSE that adopted the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Analysis

Applying the Fama and McBeth (1973) *t-statistic*, presented in equation (O.16), the Table Q.1 average yearly regression slopes, for the samples and the control group show that the book-to-market variable exhibits statistically significant explanatory power to expected market price returns. This explanatory power is evident for the 1992 to 2007 and 1992 to 2004 time periods. Examining the Secondary sample results, it is evident that the Primary and Secondary sample significance is attributed to the Secondary sample firms.

Examining the significant regression slopes, the Control group exhibits greater magnitude and statistical significance when compared to the Primary and Secondary sample slopes.

This suggests that the Control group book-to-market ratio has greater predictive *value* for market price returns before and after the 2005 accounting change than the Primary and Secondary sample. The significant slopes for the book-to-market ratio variable and the *one-period forward* market price return show a similar pattern to the Fama and French (2008) base line regressions. For the samples and the control group, however, the yearly slopes do not show significance for the market value variable. In addition, their average yearly regression intercepts, for both the market value and book-to-market ratio to the 1 year forward average returns, do not exhibit statistical significance.

This reveals that the Control group's book-to-market ratio variables reacted in relation to its expected market price return variable before and after the 2005 accounting change. In general, these reactions exhibit greater significance when compared to the Primary and Secondary sample.

APPENDIX R ANALYSIS AND RESULTS FOR BOOK-TO-MARKET RATIO, KEY MARKET TOTALS, KEY ACCOUNTING TOTALS AND HISTORICAL VALUE-AT-RISK ACTUAL

The analysis and results for descriptive statistics and correlations applied to selected variables are presented in this appendix. The selected variables include market price, Historical Value-at-Risk Actual, book-to-market ratio, market value, and the key accounting totals. These key accounting total variables are total equity, total assets, total liabilities and net income. The selected variables are represented by fiscal year-end total levels.

R.1 Descriptive Statistics for Book-to-Market Ratio, Key Accounting and Market Total Variables, and Historical Value-at-Risk Actual Variable

The descriptive statistics for the variables book-to-market ratio, accounting totals on a consolidated basis, market totals that include market price and Historical Value-at-Risk Actual is presented on a yearly basis for the time range 1992 to 2008 in Table R.4[61]. In this table, Panel A presents results for the Primary and Secondary sample; Panel B presents results for the Control group; Panel C presents results for the Primary sample; and, Panel D presents results for the Secondary sample.[62]

Analysis

Table R.4 presents the yearly descriptive statistics for the sample average and the standard deviation of sample means for *total variables* that include the key accounting total variables and the market price variable. In addition, Table R.4 presents descriptive statistics for the Historical Value-at-Risk Actual variable.

[61] Information regarding calculated and missing data for these variables is presented in Appendix Z.

[62] In general, the analysis of this section's results is presented prior to the presentation of the actual results tables.

Table R.4 Panel A shows that the Primary and Secondary variables tested, generally exhibit materially significant increases for both statistical mean and the standard deviation of sample means after 2005. However, the market price mean and its standard deviation levels exhibit little difference before and after 2005. The Panel B Control group variables exhibit less significant material changes for before and after 2005 when compared to the Primary and Secondary sample changes. Both the Primary and Secondary sample and the Control group exhibited significant material increase in average Historical Value-at-Risk Actual after 2005 compared to before.

To determine the changes in the descriptive statistics for the samples and the control group *total* variables for before and after 2005, the percentage changes for the yearly mean and standard deviation of sample means are presented in Table R.1 and Table R.2 respectively. Table R.1 and Table R.2 present percentage changes for the time periods 1992 to 2004, to provide changes in levels for before 2005; and, 1992 to 2007 and 1992 to 2008 to provide changes for after 2005. For the Historical Value-at-Risk Actual variable, the percentage changes are calculated for the time periods: 1994 to 2004; 1994 to 2007; and, 1994 to 2008.

Table R.1 and Table R.2 Percentage Changes for Mean and Standard Deviation of Sample Means for Total and Historical Value-at-Risk Actual Variable Results from Table R.4

Percentage Change Analysis Table Description

In Table R.1 and Table R.2, the Variable column represents the Description and Symbol columns that present the descriptions and *codes* for the selected variables. The Year column represents the beginning (From) and ending (To) year applied to calculate the percentage changes presented in the Percentage Change (%) column. The Percentage Change column in Table R.1 represents the Mean column. This Mean column presents the mean variable percentage changes rounded to the nearest whole number. The Percentage Change column in Table R.2 represents the Standard Deviation column. This Standard Deviation column presents the percentage changes of the standard deviation of sample means rounded to the nearest whole number. In Table R.1 and Table R.2, the PS column presents the percentage changes for the Primary and Secondary sample. The C column presents the percentage changes for the Control group. The P column presents the percentage changes for the Primary sample. The S column presents the percentage changes for the Secondary sample.

Table description note:
Refer to this table description for Table R.1 and Table R.2 table details.

Table R.1 Percentage Changes for Mean Total and Historical Value-at-Risk Actual Variable Results from Table R.4

Variable		Year	Percentage Change (%)			
			Mean			
Description	Symbol	From - To	PS	C	P	S
Book-to-Market Ratio	*TBM*	1992 - 2004	186	1	-53	156
		1992 - 2007	195	5	-26	155
		1992 - 2008	254	69	56	179
Market-to-Book Ratio	*TMB*	1992 - 2004	43	-1	98	22
		1992 - 2007	31	-3	44	27
		1992 - 2008	-7	-32	-23	0
Market Price	*P*	1992 - 2004	336	84	499	292
		1992 - 2007	489	183	606	462
		1992 - 2008	287	92	246	307
Market Value	*TMV*	1992 - 2004	1,293	52	1,334	192
		1992 - 2007	1,318	96	1,337	308
		1992 - 2008	773	30	774	205
Volume	*VOL*	1992 - 2004	-30	-23	-29	192
		1992 - 2007	12	-23	-7	817
		1992 - 2008	97	-39	99	725
Total Shares Outstanding	*TS*	1992 - 2004	63	-15	67	7
		1992 - 2007	70	-32	74	22
		1992 - 2008	181	-33	192	40
Total Equity	*TE*	1992 - 2004	423	58	478	119
		1992 - 2007	682	94	769	209
		1992 - 2008	753	28	859	173
Total Assets	*TA*	1992 - 2004	372	46	380	74
		1992 - 2007	970	76	990	216
		1992 - 2008	1,435	22	1,468	208
Total Liabilities	*TL*	1992 - 2004	369	11	375	55
		1992 - 2007	979	18	994	216
		1992 - 2008	1,471	8	1,496	221
Net Income	*TI*	1992 - 2004	484	-29	478	834
		1992 - 2007	784	-10	759	2,343
		1992 - 2008	-1,520	-12	-1,555	673
Historical Value-At-Risk Actual	*V*	1994 - 2004	-325	90	-150	-283
		1994 - 2007	-375	50	-1,050	-200
		1994 - 2008	-1,925	-360	-5,300	-1,050

Table R.2 Percentage Changes for Standard Deviation of Sample Means for Total and Historical Value-at-Risk Actual Variable Results from Table R.4

Variable		Year	Percentage Change (%)			
			Standard Deviation			
Description	Symbol	From - To	PS	C	P	S
Book-to-Market Ratio	*TBM*	1992 - 2004	-95	-22	-82	-96
		1992 - 2007	-95	167	-6	-95
		1992 - 2008	-90	1,111	150	-93
Market-to-Book Ratio	*TMB*	1992 - 2004	-14	-29	-6	-21
		1992 - 2007	-17	100	92	-21
		1992 - 2008	-10	171	36	-11
Market Price	*P*	1992 - 2004	290	104	353	304
		1992 - 2007	624	200	1,081	571
		1992 - 2008	481	104	710	444
Market Value	*TMV*	1992 - 2004	1,493	53	1,322	101
		1992 - 2007	1,442	98	1,215	188
		1992 - 2008	1,051	34	1,150	106
Volume	*VOL*	1992 - 2004	-45	4	-50	116
		1992 - 2007	-28	-17	-56	824
		1992 - 2008	53	-44	26	820
Total Shares Outstanding	*TS*	1992 - 2004	63	-15	50	9
		1992 - 2007	69	-35	55	56
		1992 - 2008	254	-36	357	60
Total Equity	*TE*	1992 - 2004	494	64	480	65
		1992 - 2007	787	100	757	152
		1992 - 2008	846	36	758	94
Total Assets	*TA*	1992 - 2004	339	55	264	-16
		1992 - 2007	983	90	959	99
		1992 - 2008	1,425	33	1,336	100
Total Liabilities	*TL*	1992 - 2004	333	0.39	256	-10
		1992 - 2007	986	40	963	111
		1992 - 2008	1,451	11	1,366	103
Net Income	*TI*	1992 - 2004	164	-30	49	-17
		1992 - 2007	299	-10	141	-7
		1992 - 2008	1,658	-17	1,724	-58
Historical Value-At-Risk Actual	*V*	1994 - 2004	10	-13	-67	27
		1994 - 2007	-10	100	-19	-18
		1994 - 2008	210	125	210	177

Further analysis of the detailed results presented in Table R.4 using relative percentage changes exhibited in Table R.1 and Table R.2 show corroborative evidence for the general observations stated earlier in this section. Percentage change analysis of the key accounting variables suggest that the Primary and Secondary sample firms experienced more than a 100% change for total assets, total liabilities and net income, and approximately a 50% increase for total equity, after 2005 compared to before. However, the same material significance was not exhibited for the Control group firms. As noted earlier, the market price variable for the Primary and Secondary sample and the Control group did not vary significantly when compared to before and after 2005.

In addition, noted earlier, the Historical Value-at-Risk Actual variable for both the samples and the control group firms exhibited significant material changes from before to after the 2005. The Primary and Secondary sample firms registered a significant material increase, and the Control group firms registered a less materially significant increase.

Further analysis of the Table R.4 and Table R.1 results show that the Primary and Secondary sample firms may have experienced materially significant increases if examining the difference between the change in accounting total variables and the change in the market price variable after the 2005 accounting change; with the earlier stated Historical Value-at-Risk Actual exhibiting significant increases after 2005. This supposition is not evident when examining the Control group firms. They seem to report the same levels if examining the difference between the same accounting and market price change variables after 2005 compared to before; with a less significant material increase in Historical Value-at-Risk Actual after 2005.

The next section, Appendix R.2, further examines the reactions of these total variables by comparing them with the Historical Value-at-Risk Actual using correlation analysis. This examination is then followed in Appendix S with a direct examination of the earlier alluded difference relationship between accounting and market price change variables. This difference relationship, examined in Appendix S, provides the basis of the relative delta measurement approach detailed in Section 3.2.4 and Appendix E.

R.1.2 Descriptive Statistics and Analysis of the Net Income Accounting Total Variable

The convention applied in this study in its examination of the net income variable is to apply yearly figures from 1992 to 2001 and *second half-year* figures from 2002 to 2008. Table R.3 is presented with the aim to analyse the net income variable levels for the full year, first half-year and second half-year. This table presents descriptive statistics and percentage changes on a yearly basis for the Primary and Secondary sample net income accounting total variable for the time range 1992 to 2008.

Analysis

Table R.3 presents the Primary and Secondary sample yearly descriptive statistics for the sample average and the standard deviation of sample means for the consolidated net income total variable.

From 1992 to 2001 inclusive, this study applies the full year net income figures shown in the column *Full Year*. Due to ease of data collection, from 2002 to 2008 this study applies the second half-year net income figures shown in column *Second Half* to represent the net income variable. It is considered in this study that the application of either the full or the applied half-year figures after 2002, for its net income variable, does not significantly affect the findings reported in this research.

Table R.3 Descriptive Statistics for the Primary and Secondary Sample Net Income Total Variable

Table Description

The Table R.3 columns represent the following:

The Statistic column, the same as Table R.4, represent the panels: Mean calculated using equation (O.17); and, Standard Deviation of sample means calculated using equation (O.18), for the sample firms observed (*Obs.*) for year (Year).

The Year column represents the *panel data* year. This Year column, same as Table R.4, represents the fiscal accounting year applied to group variables on a yearly basis. In addition, the Year column represents the reporting year and specifies the variable record date applied for data collection. For banks in the UK banking sector the variable record date is generally the 31st December each year. For firms with a different financial end of year reporting date, the variable record date adheres to the convention specified in Section 3.6, criterion 7.

For the *Total Net Income Variable (TI)* column: *Full Year* represents consolidated net income totals on a fiscal year basis; *First Half* represents the grouping for the consolidated net income totals reported for the first half-year: from 1st January to 30th June; *Second Half* represents the grouping for the consolidated net income totals reported for the second half-year: from 1st July to 31st December; *Percentage Change* represents the relative percentage change of the figures from the first half-year to the second half-year.

Table R.3 (Continued)

Statistic	Year	*Total Net Income Variable (TI)*				*Obs.*
		Full Year	*First Half*	*Second Half*	*Percentage Change* (%)	
Mean	1992	88.77	-	-	-	15
	1993	207.34	-	-	-	15
	1994	310.40	-	-	-	15
	1995	458.84	-	-	-	16
	1996	595.74	-	-	-	16
	1997	517.24	-	-	-	16
	1998	475.11	-	-	-	16
	1999	579.80	-	-	-	16
	2000	771.62	-	-	-	16
	2001	702.40	-	-	-	16
	2002	665.99	388.24	277.83	-28.44	16
	2003	892.17	453.08	438.37	-3.25	16
	2004	1,080.21	562.43	518.28	-7.85	16
	2005	1,349.75	662.92	686.14	3.50	16
	2006	1,474.22	759.03	715.24	-5.77	16
	2007	1,668.96	948.72	784.85	-17.27	16
	2008	-852.37	405.82	-1,260.71	-410.66	16
Standard Deviation	1992	337.58	-	-	-	
	1993	457.12	-	-	-	
	1994	573.53	-	-	-	
	1995	997.02	-	-	-	
	1996	1,265.84	-	-	-	
	1997	975.66	-	-	-	
	1998	818.52	-	-	-	
	1999	1,035.38	-	-	-	
	2000	1,326.50	-	-	-	
	2001	1,209.03	-	-	-	
	2002	1,166.52	674.38	499.26	-25.97	
	2003	1,560.87	786.68	822.27	4.52	
	2004	1,914.42	1,029.61	892.05	-13.36	
	2005	2,516.04	1,223.60	1,294.94	5.83	
	2006	2,597.55	1,406.16	1,209.70	-13.97	
	2007	2,967.91	1,673.31	1,348.44	-19.41	
	2008	6,339.85	1,064.35	5,936.21	457.73	

Table notes: The Total Net Income variable means are presented using sample averages. The sample consists of a maximum of 16 observations per year from 16 firms in the LSE consisting of the 5 banks and 11 banking related firms that adopted the IFRS standards in 2005. The highlighted record identifies the samples IFRS accounting standards adoption year.

Table R.4 Descriptive Statistics for the Totals and Historical Value-at-Risk Actual Variables

Table Description

The Table R.4 columns represent the following:

Statistic column represents the panels: Mean calculated using equation (O.17); and, Standard Deviation of sample means calculated using equation (O.18), for the sample firms observed (*Obs.*) for year (Year).

The Year column represents the *panel data* year. This Year column also represents the fiscal accounting year applied to group variables on a yearly basis. In addition, the Year column represents the source data reporting year and specifies the variable record date applied for data collection. For banks in the UK banking sector, the variable record date is generally the 31st December each year. For firms with a different financial end of year reporting date, the variable record date adheres to the convention specified in Section 3.6, criterion 7.

For the market based variable columns:

TBM represents the total book-to-market ratio;
TMB represents the total market-to-book ratio;
P represents the market price, scale[a]: 0.01GBP[b] equivalent to 1GBX[c];
TMV represents the total market value, scale: 1,000,000 GBP;
VOL[d] represents the volume, scale: 1,000,000 *share units*;
TS[e] represents the total number of shares outstanding, scale: 1,000,000 GBP.

For the key financial statement accounting total based variable columns:

TE represents total shareholders' equity, scale: 1,000,000 GBP;
TA represents total assets, scale: 1,000,000 GBP;
TL represents total liabilities scale: 1,000,000 GBP;
TI represents net income, scale: 1,000,000 GBP (Appendix R.1.2 presents analysis and the data collection specification of the net income variable applied in this study).

The *V* column represents the Historical Value-at-Risk Actual.
The *Obs*. column represents the number of sample firms observed for the year.

Table description notes:
[a] The term scale refers to the scaling applied to the respective variable prior to the variable's presentation in the specified table.
[b] GBP is the ISO code for the Great British Pound sterling.
[c] GBX is the ISO code for the Great British Pound pence sterling.
[d] Data for the volume variable VOL contains for the samples and the control group the following missing data percentages: 1.9% for the Primary Sample, 7.6% for the Secondary Sample and 4.4% for the Control group.
[e] Data for the total number of outstanding variable TS contains for the samples and the control group the following missing data percentages: 5.27% for the Primary Sample, 5.9% for the Secondary Sample and 3% for the Control group.

Table R.4 (Continued)

PANEL A

Descriptive Statistics for the Primary and Secondary Sample Totals and Historical Value-at-Risk Actual Variables

Statistic	Year	*TBM*	*TMB*	*P*	*TMV*	*VOL*	*TS*	*TE*	*TA*	*TL*	*TI*	*V*	*Obs.*
Mean	1992	-0.78	1.29	130.68	1,072.94	2.13	1,753.24	1,389.43	28,380.13	26,829.30	88.77	-	15
	1993	-0.31	1.88	220.25	1,944.95	2.06	1,772.18	1,576.58	33,472.93	31,717.56	207.34	-	15
	1994	0.17	1.74	226.30	1,829.57	1.70	2,041.57	1,772.17	33,956.28	32,018.81	310.40	0.04	15
	1995	0.61	2.36	290.00	3,347.13	1.19	2,325.91	2,581.65	48,659.97	45,814.31	458.84	-0.19	16
	1996	0.63	2.32	331.26	4,303.56	1.00	2,444.05	3,061.60	53,767.61	50,443.63	595.74	0.01	16
	1997	0.62	2.76	434.52	6,459.71	3.53	2,058.24	2,669.03	51,191.13	48,346.95	517.24	0.01	16
	1998	0.62	2.86	474.79	6,518.68	1.48	2,067.17	2,814.29	51,851.11	48,884.30	475.11	-0.11	16
	1999	0.57	2.98	581.21	10,976.54	1.58	2,100.31	3,363.36	59,488.25	55,944.79	579.80	-0.11	16
	2000	0.57	3.20	686.13	14,455.96	1.84	2,604.30	5,526.56	87,004.45	80,978.72	771.62	-0.13	16
	2001	0.62	2.28	557.60	13,864.12	1.23	2,660.90	6,016.42	95,731.27	89,167.92	702.40	-0.30	16
	2002	0.82	1.58	405.72	10,869.04	1.77	2,669.47	5,819.95	101,645.62	95,387.98	277.83	-0.41	16
	2003	0.72	1.80	524.64	13,908.85	1.70	2,787.90	6,688.74	113,229.02	105,903.51	438.37	-0.52	16
	2004	0.67	1.85	569.95	14,944.69	1.49	2,849.75	7,266.53	133,943.09	125,879.94	518.28	-0.09	16
	2005	0.65	1.94	685.75	16,083.28	3.07	2,892.34	8,298.72	189,681.79	180,557.01	686.14	0.01	16
	2006	0.64	2.06	794.36	17,820.91	7.11	2,920.13	9,089.28	207,964.15	197,821.21	715.24	0.06	16
	2007	0.74	1.69	769.14	15,210.53	2.39	2,981.56	10,869.92	303,685.55	289,564.60	784.85	-0.11	16
	2008	1.20	1.20	505.13	9,368.03	4.19	4,919.64	11,850.49	435,711.99	421,490.90	-1,260.71	-0.73	16
Standard Deviation	1992	6.71	0.98	64.55	1,732.91	4.20	2,903.18	2,233.45	54,216.66	51,678.82	337.58	-	
	1993	3.88	1.28	101.84	3,091.50	3.21	2,930.45	2,497.14	63,685.58	60,854.66	457.12	-	
	1994	2.05	1.05	103.84	2,786.37	3.75	3,549.35	2,905.92	62,450.93	59,243.38	573.53	0.21	
	1995	0.40	1.33	159.42	4,983.43	1.68	4,278.31	5,197.04	96,868.80	91,116.61	997.02	0.20	
	1996	0.40	1.37	194.81	6,728.48	1.59	4,624.74	6,437.43	109,443.89	102,408.91	1,265.84	0.18	
	1997	0.44	2.09	255.38	11,612.36	6.45	3,556.28	4,287.30	92,271.09	87,790.00	975.66	0.12	
	1998	0.44	2.48	284.48	12,029.15	2.25	3,571.28	4,381.25	91,813.28	87,222.88	818.52	0.26	
	1999	0.43	2.00	276.09	20,271.54	2.85	3,646.71	5,392.37	107,974.78	102,356.97	1,035.38	0.13	
	2000	0.41	2.73	357.62	25,289.78	2.80	4,258.53	9,128.87	149,765.64	139,903.42	1,326.50	0.31	
	2001	0.38	1.38	220.78	23,302.64	2.18	4,362.88	10,055.87	164,472.18	153,763.22	1,209.03	0.19	
	2002	0.40	0.89	180.86	19,224.03	2.59	4,374.76	10,156.46	174,579.19	164,107.37	499.26	0.25	
	2003	0.37	0.89	231.47	26,291.29	2.54	4,623.95	12,084.07	199,758.35	186,947.16	822.27	0.47	
	2004	0.34	0.84	251.65	27,607.71	2.33	4,741.27	13,256.75	238,080.95	223,866.63	892.05	0.23	
	2005	0.33	0.96	317.19	29,202.14	4.35	4,773.74	15,317.66	342,063.02	326,884.90	1,294.94	0.08	
	2006	0.35	1.11	370.84	30,797.16	12.02	4,797.41	16,264.49	373,862.35	357,143.36	1,209.70	0.13	
	2007	0.34	0.81	467.16	26,719.79	3.03	4,918.01	19,805.21	587,245.72	561,050.50	1,348.44	0.19	
	2008	0.65	0.88	374.73	19,944.74	6.43	10,290.77	21,118.76	826,815.41	801,689.28	5,936.21	0.65	

Panel notes: The total and Value-at-Risk Actual variable means are sample averages. The sample consists of a maximum of 16 observations per year from 16 firms in the LSE consisting of the 5 banks and 11 banking related firms that adopted the IFRS standards in 2005. The highlighted record identifies the samples IFRS accounting standards adoption year.

Table R.4 (Continued)

PANEL B

Descriptive Statistics for the Control Group Totals and Historical Value-at-Risk Actual Variables

Statistic	Year	*TBM*	*TMB*	*P*	*TMV*	*VOL*	*TS*	*TE*	*TA*	*TL*	*TI*	*V*	*Obs.*
Mean	1992	1.16	0.87	135.91	373.48	0.44	291.36	428.01	548.47	112.09	9.90	-	12
	1993	1.08	0.94	183.92	491.85	0.38	292.86	534.29	648.99	102.53	11.67	-	12
	1994	1.08	0.93	164.58	458.32	0.54	293.66	492.71	626.25	121.60	12.08	-0.10	12
	1995	1.12	0.90	184.80	527.19	0.43	295.63	589.75	711.19	107.64	13.38	-0.19	12
	1996	1.19	0.85	196.20	554.67	0.56	299.04	646.16	752.96	106.80	14.88	-0.03	12
	1997	1.16	0.86	227.18	673.25	0.35	299.05	776.30	877.20	100.90	15.14	-0.05	12
	1998	1.23	0.81	218.66	664.29	0.36	298.74	804.36	914.10	109.74	15.15	-0.24	12
	1999	1.22	0.82	292.05	797.54	1.07	284.00	952.41	1,079.52	127.11	13.26	-0.17	12
	2000	1.18	0.85	288.77	763.89	0.33	268.41	886.69	1,018.32	131.63	15.27	-0.02	12
	2001	1.19	0.84	246.16	624.85	0.30	258.00	719.40	857.07	137.68	11.57	-0.30	12
	2002	1.18	0.85	172.00	429.54	0.20	254.30	494.14	628.58	134.45	6.19	-0.38	12
	2003	1.18	0.85	223.50	531.60	0.23	253.45	623.86	754.71	130.85	6.65	-0.46	12
	2004	1.17	0.86	250.40	567.69	0.34	248.03	677.71	802.53	124.82	7.03	-0.01	12
	2005	1.12	0.90	347.01	745.11	0.39	233.27	849.71	969.66	119.95	7.88	0.06	12
	2006	1.12	0.89	390.19	768.95	0.69	214.73	872.91	995.08	122.16	8.76	0.05	12
	2007	1.22	0.84	384.77	731.30	0.34	197.96	831.33	963.05	131.72	8.95	-0.05	12
	2008	1.96	0.59	260.42	486.30	0.27	195.61	547.83	669.17	121.35	8.76	-0.46	12
Standard Deviation	1992	0.09	0.07	91.95	332.14	0.52	274.80	372.15	448.39	93.22	8.37	-	
	1993	0.09	0.08	116.35	436.25	0.27	275.51	461.11	535.41	90.57	9.34	-	
	1994	0.06	0.05	96.79	407.71	0.94	274.57	421.53	513.45	100.26	9.44	0.08	
	1995	0.07	0.06	113.68	492.97	0.67	274.59	512.14	579.50	87.33	10.72	0.11	
	1996	0.13	0.08	133.49	483.33	0.61	271.32	546.50	618.30	92.10	11.96	0.14	
	1997	0.04	0.03	163.89	605.08	0.34	271.31	692.26	771.53	96.12	12.67	0.19	
	1998	0.07	0.05	160.84	629.78	0.36	271.20	754.41	832.62	83.47	11.56	0.22	
	1999	0.06	0.04	193.03	760.47	2.63	261.97	893.74	975.68	95.26	10.21	0.25	
	2000	0.05	0.04	193.96	740.44	0.31	252.28	826.57	905.65	90.78	12.83	0.23	
	2001	0.08	0.05	172.09	605.18	0.36	243.05	675.10	757.67	96.84	11.40	0.13	
	2002	0.08	0.06	115.17	422.46	0.21	243.20	468.83	551.06	97.53	5.24	0.08	
	2003	0.07	0.05	166.00	500.85	0.23	243.19	580.06	661.57	99.13	5.63	0.09	
	2004	0.07	0.05	187.68	507.06	0.54	233.30	610.46	693.77	93.58	5.82	0.07	
	2005	0.08	0.07	251.90	647.89	0.45	210.41	742.65	805.92	85.90	6.60	0.07	
	2006	0.05	0.04	324.01	674.87	1.36	191.77	764.84	850.25	95.59	6.83	0.16	
	2007	0.24	0.14	275.79	657.51	0.43	178.00	744.49	851.58	130.94	7.55	0.16	
	2008	1.09	0.19	187.31	446.13	0.29	176.12	507.71	595.25	103.57	6.97	0.18	

Panel notes: The total and Value-at-Risk Actual variable means are yearly averages from the Control group firms. The Control group consists of a maximum of 12 observations per year from 12 banking related firms in the LSE that did not adopt the IFRS standards in 2005. The highlighted record identifies the samples IFRS accounting standards adoption year.

Table R.4 (Continued)

PANEL C

Descriptive Statistics for the Primary Sample Totals and Historical Value-at-Risk Actual Variables

Statistic	Year	*TBM*	*TMB*	*P*	*TMV*	*VOL*	*TS*	*TE*	*TA*	*TL*	*TI*	*V*	*Obs.*
Mean	1992	0.91	1.20	100.96	3,200.92	5.64	5,207.10	3,760.80	88,472.00	84,197.40	279.60	-	4
	1993	0.51	2.11	198.50	5,970.36	5.64	5,261.65	4,180.60	103,989.80	99,240.20	618.40	-	4
	1994	0.55	1.86	176.64	5,506.48	4.98	6,122.47	4,815.60	104,955.60	99,616.20	936.40	-0.02	4
	1995	0.42	2.62	263.00	9,283.47	3.05	7,028.31	7,221.40	151,778.00	143,716.40	1,402.60	-0.22	5
	1996	0.38	2.88	339.86	12,179.65	2.58	7,399.77	8,629.60	168,308.60	158,844.00	1,825.20	0.12	5
	1997	0.32	3.59	436.13	18,629.99	5.36	6,146.26	7,166.40	159,759.80	152,037.60	1,569.00	0.06	5
	1998	0.34	3.32	441.73	18,651.52	3.91	6,172.58	7,515.40	161,044.00	153,045.00	1,426.80	-0.33	5
	1999	0.28	3.73	588.11	32,763.13	4.31	6,294.64	9,085.80	185,353.60	175,694.40	1,746.40	-0.12	5
	2000	0.36	2.91	635.22	43,543.03	4.89	7,918.08	16,079.40	274,638.20	256,965.20	2,354.60	-0.31	5
	2001	0.41	2.59	599.30	42,374.50	1.95	8,099.05	17,828.40	302,590.20	283,014.60	2,196.20	-0.16	5
	2002	0.49	2.13	467.75	33,383.12	3.58	8,123.69	17,388.00	321,684.60	302,899.20	855.40	-0.32	5
	2003	0.44	2.32	570.21	42,720.20	4.65	8,503.12	20,001.80	358,736.00	336,703.80	1,373.60	-0.38	5
	2004	0.43	2.37	605.17	45,898.95	4.00	8,687.57	21,754.00	424,548.80	400,253.40	1,616.80	-0.05	5
	2005	0.47	2.19	679.09	49,106.25	6.64	8,786.19	24,763.60	601,687.40	574,286.80	2,162.40	-0.01	5
	2006	0.47	2.24	762.06	54,210.60	21.50	8,845.93	27,030.80	659,130.20	628,730.60	2,214.80	0.02	5
	2007	0.67	1.73	712.42	45,989.09	5.22	9,049.43	32,665.60	964,391.00	921,364.60	2,402.40	-0.23	5
	2008	1.42	0.93	349.71	27,971.04	11.22	15,179.60	36,049.80	1,387,056.00	1,343,462.20	-4,068.80	-1.08	5
Standard Deviation	1992	0.34	0.36	44.59	2,347.87	5.72	3,140.77	2,870.33	66,706.34	63,435.59	595.15	-	
	1993	0.16	0.58	95.59	3,801.74	3.43	3,163.51	3,264.07	78,458.76	74,739.06	686.53	-	
	1994	0.08	0.33	61.03	3,311.76	5.48	4,111.70	3,805.39	73,715.01	69,492.00	719.21	0.21	
	1995	0.13	0.93	138.31	5,302.52	1.54	5,327.26	7,851.63	125,808.33	116,966.83	1,450.54	0.14	
	1996	0.11	1.07	187.50	7,470.64	1.82	5,958.10	9,921.71	145,060.38	133,958.01	1,803.83	0.06	
	1997	0.10	1.83	164.88	15,309.10	5.67	4,121.69	5,599.08	102,344.30	96,609.44	1,245.77	0.17	
	1998	0.10	1.63	197.14	16,529.75	2.22	4,138.95	5,549.41	99,483.38	93,649.88	927.02	0.33	
	1999	0.05	0.77	211.04	26,005.51	3.43	4,222.41	6,938.86	121,988.17	114,826.57	1,237.99	0.13	
	2000	0.07	0.68	199.81	29,292.98	2.73	4,075.99	10,435.00	141,751.68	130,697.96	1,425.09	0.19	
	2001	0.10	0.77	107.47	23,612.06	0.85	4,189.70	11,169.69	153,736.61	142,603.82	1,191.78	0.18	
	2002	0.10	0.57	131.64	21,534.65	2.68	4,198.23	11,964.16	162,038.99	150,650.63	571.86	0.10	
	2003	0.07	0.35	205.97	32,896.39	2.74	4,553.48	14,993.54	200,115.08	184,942.78	970.94	0.24	
	2004	0.06	0.34	202.04	33,395.55	2.87	4,719.37	16,635.96	242,910.81	225,955.60	886.11	0.07	
	2005	0.10	0.43	302.76	34,845.38	3.95	4,712.15	19,645.72	360,742.77	344,720.79	1,523.86	0.03	
	2006	0.11	0.51	337.76	33,878.14	12.77	4,725.78	20,127.26	392,479.81	375,092.54	1,181.27	0.04	
	2007	0.32	0.69	526.49	30,874.54	2.53	4,860.90	24,609.92	706,746.98	674,253.86	1,433.68	0.17	
	2008	0.85	0.49	361.15	29,353.78	7.18	14,338.59	24,634.31	958,124.65	929,841.65	10,853.87	0.65	

Panel notes: The total and Value-at-Risk Actual variable means are sample averages. The sample consists of a maximum of 5 observations per year from the 5 banks in the LSE that adopted the IFRS standards in 2005. The highlighted record identifies the samples IFRS accounting standards adoption year.

Table R.4 (Continued)

PANEL D

Descriptive Statistics for the Secondary Sample Totals and Historical Value-at-Risk Actual Variables

Statistic	Year	*TBM*	*TMB*	*P*	*TMV*	*VOL*	*TS*	*TE*	*TA*	*TL*	*TI*	*V*	*Obs.*
Mean	1992	-1.40	1.32	141.49	299.13	0.12	183.31	311.54	1,065.65	752.89	2.03	-	11
	1993	-0.61	1.80	228.16	481.16	0.27	186.06	392.94	1,419.81	1,025.45	20.49	-	11
	1994	0.03	1.70	244.36	492.52	0.06	186.61	388.80	1,683.86	1,292.73	25.86	0.06	11
	1995	0.70	2.25	302.28	648.79	0.15	188.45	472.67	1,788.14	1,313.36	29.86	-0.17	11
	1996	0.74	2.07	327.35	723.53	0.12	191.44	530.69	1,703.52	1,170.74	36.90	-0.02	11
	1997	0.75	2.38	433.78	927.77	2.52	200.05	624.77	1,841.74	1,214.84	39.17	-0.01	11
	1998	0.74	2.65	489.82	1,003.75	0.13	201.07	677.42	2,217.97	1,538.52	42.52	-0.01	11
	1999	0.70	2.64	578.08	1,073.55	0.06	193.80	762.24	2,276.73	1,513.15	49.52	-0.10	11
	2000	0.67	3.32	709.27	1,234.57	0.15	188.95	729.82	1,716.38	984.86	52.08	-0.05	11
	2001	0.72	2.15	538.64	904.86	0.90	189.01	647.34	1,704.49	1,055.79	23.40	-0.36	11
	2002	0.97	1.33	377.53	635.37	0.94	190.28	561.74	1,627.90	1,064.70	15.30	-0.46	11
	2003	0.84	1.56	503.93	812.78	0.36	190.07	637.35	1,634.94	994.29	13.27	-0.58	11
	2004	0.79	1.61	553.94	874.56	0.35	196.19	681.31	1,849.59	1,164.74	18.96	-0.11	11
	2005	0.73	1.82	688.78	1,072.84	1.44	213.31	814.68	2,406.51	1,588.92	15.11	0.02	11
	2006	0.72	1.97	809.05	1,280.14	0.56	226.58	934.04	2,888.67	1,953.30	33.63	0.08	11
	2007	0.77	1.67	794.92	1,220.27	1.10	223.43	962.79	3,364.89	2,382.79	49.60	-0.06	11
	2008	1.10	1.32	575.77	912.11	0.99	256.02	850.80	3,282.90	2,413.04	15.69	-0.57	11
Standard Deviation	1992	7.84	1.14	68.96	283.68	0.25	145.45	311.81	1,751.77	1,701.51	52.66	-	
	1993	4.55	1.47	107.34	453.65	0.43	150.52	400.43	2,238.80	2,169.02	44.93	-	
	1994	2.41	1.23	112.40	452.51	0.05	150.33	371.25	3,241.29	3,131.51	38.60	0.22	
	1995	0.45	1.50	173.03	613.17	0.12	148.61	445.37	3,304.88	3,175.44	40.78	0.22	
	1996	0.44	1.46	206.90	685.50	0.13	146.78	487.17	2,896.32	2,749.14	51.57	0.19	
	1997	0.47	2.17	294.87	895.82	6.96	145.73	566.93	2,951.68	2,796.22	50.73	0.10	
	1998	0.48	2.83	324.11	835.99	0.23	144.99	633.68	3,795.44	3,621.51	50.19	0.14	
	1999	0.46	2.31	310.63	827.44	0.05	147.62	736.13	3,724.01	3,507.07	71.95	0.14	
	2000	0.46	3.31	417.12	902.08	0.16	147.33	676.62	1,591.12	1,459.14	68.08	0.33	
	2001	0.42	1.60	259.29	591.83	2.54	150.48	552.20	1,490.41	1,400.95	40.22	0.16	
	2002	0.40	0.91	198.34	453.51	2.19	149.53	387.90	1,309.63	1,254.26	21.72	0.28	
	2003	0.39	0.97	248.77	523.38	0.61	148.83	463.18	1,129.94	1,184.03	31.52	0.54	
	2004	0.35	0.90	278.86	570.20	0.54	157.85	514.96	1,464.17	1,535.61	43.85	0.28	
	2005	0.36	1.13	337.95	603.69	3.58	193.66	637.55	1,725.79	1,878.40	38.09	0.10	
	2006	0.40	1.32	399.87	737.78	0.94	226.35	806.26	2,544.65	2,681.10	38.64	0.15	
	2007	0.36	0.90	462.76	815.92	2.31	226.68	786.14	3,491.24	3,582.51	48.80	0.18	
	2008	0.56	1.01	375.36	585.23	2.30	232.72	606.29	3,507.99	3,455.35	22.18	0.61	

Panel notes: The change and Value-at-Risk Actual variable means are sample averages. The sample consists of a maximum of 11 observations per year from 11 banking related firms in the LSE that adopted the IFRS standards in 2005. The highlighted record identifies the samples IFRS accounting standards adoption year.

R.2 Correlation Analysis for Book-to-Market Ratio, Key Accounting and Market Total Variables to Historical Value-at-Risk Actual Variable

The correlation analysis between the total variables and the Historical Value-at-Risk variable in Table R.4 is presented on a yearly basis for the time range 1994 to 2008 in Table R.5. In Table R.5, Panel A presents results for the Primary and Secondary sample and the Control group; Panel B presents results for the Primary sample and the Secondary sample.

Table R.5 Correlation Analysis for the Totals and Historical Value-at-Risk Actual Variables

Table Description

The Table R.5 columns represent the following:

Correlation Variables column represents the variable pairs correlated.

Measure column represents the data panels:
r panel represents the correlation coefficient calculated using the approach specified in equation (O.20); *p(r)* panel represents the probability significance level for correlation coefficient, *r*, calculated by applying equation (M.15).

For the samples and the control group columns:
1994 - 2008 column represents the correlation results for the total time period range in years. A single year represents the fiscal accounting year, with the 31st December selected as the variable record date.

For the samples and the control group columns:
1994 - 2004 and 1994 - 2007 columns represent the correlation results for the sub-time period year ranges. A single year represents the fiscal accounting year, with the 31st December selected as the variable record date.

Table R.5 (Continued)

PANEL A

Correlation for the Primary and Secondary Sample and the Control Group Total Variables to the Historical Value-at-Risk Actual Variable

Correlation Variables	Measure	Primary and Secondary Sample			Control Group		
		1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007
TBM vs. V	*r*	-0.739**	-0.614*	-0.483	-0.525*	-0.301	-0.301
	p(r)	1.7E-03	4.4E-02	8.0E-02	4.5E-02	3.0E-01	3.0E-01
TMB vs. V	*r*	0.464	0.393	0.223	0.562*	0.344	0.344
	p(r)	8.2E-02	2.3E-01	4.4E-01	2.9E-02	2.3E-01	2.3E-01
P vs. V	*r*	0.077	-0.284	0.079	0.463	0.537*	0.537*
	p(r)	7.8E-01	4.0E-01	7.9E-01	8.2E-02	4.8E-02	4.8E-02
TMV vs. V	*r*	-0.083	-0.560	-0.179	0.581*	0.520	0.520
	p(r)	0.768	0.073	0.540	0.023	0.057	0.057
VOL vs. V	*r*	0.074	0.179	0.416	0.367	0.317	0.317
	p(r)	7.9E-01	6.0E-01	1.4E-01	1.8E-01	2.7E-01	2.7E-01
TS vs. V	*r*	-0.677**	-0.638*	-0.231	0.080	-0.200	-0.200
	p(r)	5.6E-03	3.5E-02	4.3E-01	7.8E-01	4.9E-01	4.9E-01
TE vs. V	*r*	-0.424	-0.664*	-0.111	0.538*	0.464	0.464
	p(r)	1.1E-01	2.6E-02	7.1E-01	3.9E-02	9.4E-02	9.4E-02
TA vs. V	*r*	-0.482	-0.625*	0.059	0.522*	0.442	0.442
	p(r)	6.9E-02	4.0E-02	8.4E-01	4.6E-02	1.1E-01	1.1E-01
TL vs. V	*r*	-0.483	-0.623*	0.065	-0.288	-0.336	-0.336
	p(r)	6.8E-02	4.1E-02	8.2E-01	3.0E-01	2.4E-01	2.4E-01
TI vs. V	*r*	0.717**	0.169	0.315	0.259	0.200	0.200
	p(r)	2.6E-03	6.2E-01	2.7E-01	3.5E-01	4.9E-01	4.9E-01
Years(T)		15	11	14	15	14	14

Panel notes: **, * Correlation coefficients significant at two-tailed levels.

Table R.5 (Continued)

PANEL B

Correlation for the Primary Sample and Secondary Sample Total Variables to the Historical Value-at-Risk Actual Variable

Correlation Variables	Measure	Primary Sample			Secondary Sample		
		1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007
TBM vs. V	***r***	-0.801**	-0.094	-0.075	-0.599*	-0.558	-0.478
	p(r)	3.4E-04	7.8E-01	8.0E-01	1.8E-02	7.4E-02	8.4E-02
TMB vs. V	***r***	0.534*	0.174	0.084	0.465	0.501	0.354
	p(r)	4.0E-02	6.1E-01	7.7E-01	8.0E-02	1.2E-01	2.1E-01
P vs. V	***r***	0.157	-0.359	-0.110	0.134	-0.124	0.201
	p(r)	5.8E-01	2.8E-01	7.1E-01	6.3E-01	7.2E-01	4.9E-01
TMV vs. V	***r***	-0.027	-0.429	-0.165	0.294	0.141	0.336
	p(r)	0.923	0.188	0.574	0.287	0.679	0.241
VOL vs. V	***r***	-0.110	-0.044	0.290	-0.042	-0.081	0.032
	p(r)	7.0E-01	9.0E-01	3.2E-01	8.8E-01	8.1E-01	9.1E-01
TS vs. V	***r***	-0.768**	-0.329	-0.119	-0.133	0.325	0.453
	p(r)	8.3E-04	3.2E-01	6.9E-01	6.4E-01	3.3E-01	1.0E-01
TE vs. V	***r***	-0.496	-0.408	-0.113	0.043	-0.111	0.227
	p(r)	6.0E-02	2.1E-01	7.0E-01	8.8E-01	7.5E-01	4.4E-01
TA vs. V	***r***	-0.640*	-0.363	-0.023	0.050	0.414	0.439
	p(r)	1.0E-02	2.7E-01	9.4E-01	8.6E-01	2.1E-01	1.2E-01
TL vs. V	***r***	-0.644**	-0.360	-0.019	0.053	0.550	0.490
	p(r)	9.6E-03	2.8E-01	9.5E-01	8.5E-01	8.0E-02	7.6E-02
TI vs. V	***r***	0.828**	0.087	0.166	0.573*	0.676*	0.511
	p(r)	1.4E-04	8.0E-01	5.7E-01	2.5E-02	2.2E-02	6.2E-02
Years(T)		15	11	14	15	14	14

Panel notes: **, * Correlation coefficients significant at two-tailed levels.

Analysis

The Table R.5 correlation analysis results show that the samples and the control group total variables to the market price return Historical Value-at-Risk Actual variable exhibit some statistically significant relationships. The Primary and Secondary sample shows significant correlations for the book-to-market ratio and total shares outstanding for the time periods 1994 to 2008, and 1994 to 2004. Total equity, total assets and total liabilities exhibit significant correlations for the 1994 to 2004 time period, and net income for the 1994 to 2008 time period.

The Control group shows significant correlations for the book-to-market ratio, and its reciprocal market-to-book ratio, market value, total equity and total assets for the 1993 to 2008 time period. Market price exhibit significant correlations for the 1994 to 2007, and 1994 to 2004 time periods.

Examining Table R.5, the Primary and Secondary sample correlation coefficients show that the significant total variables generally varied in the opposite direction to the Historical Value-at-Risk Actual before and after 2005. The net income variable, however, moved in the same direction as Historical Value-at-Risk Actual for the 1994 to 2008 time period. Examining the Control group results, the significant total variables generally varied in the same direction to the Historical Value-at-Risk Actual before and after 2005. The Control group book-to-market ratio, however, moved in the opposite direction to the Historical Value-at-Risk Actual for the 1994 to 2008 time period.

Further examination that focuses on the correlation between the book-to-market ratio and Historical Value-at-Risk for the time period 1994 to 2008 for the Primary and Secondary sample exhibits a correlation coefficient of -0.793 with a significance level at 0.01. The Control group for the same variables and time period exhibit a correlation coefficient of -0.525 with significance at 0.05. This result suggests that the Primary and Secondary sample book-to-market ratio variable reacted to the Historical Value-at-Risk Actual variable with a greater magnitude after 2005 than the Control group's reaction.

Such a relationship may suggest that firms in the Primary and Secondary sample, compared to the firms in the Control group, would have experienced a greater average increase in total equity relative the market value after 2005.

APPENDIX S ANALYSIS AND RESULTS FOR CHANGES IN - BOOK-TO-MARKET RATIO, KEY MARKET TOTALS AND KEY ACCOUNTING TOTALS

The analysis and results for descriptive statistics and correlations applied to selected change variables are presented in this appendix. The selected change variables are the yearly changes for the totals analysed in Appendix R. These change variables include change in market price (market price return), change in book-to-market ratio, change in market value and the change in key accounting totals. These key accounting total variables are total equity, total assets, total liabilities and net income. The Historical Value-at-Risk Actual is analysed with reference to the change variables. The selected change variables are calculated using fiscal year-end total levels.

S.1 Descriptive Statistics for the Change in - Book-to-Market Ratio, Key Accounting and Market Total Variables, and Historical Value-at-Risk Actual Variable

Calculated from the variables presented in Table R.4, the change in book-to-market ratio, the change in key accounting totals, the change in market totals, and also the Historical Value-at-Risk Actual are presented on a yearly basis for the time range 1994 to 2008 in Table S.3. In this table, Panel A presents results for the Primary and Secondary sample; Panel B presents results for the Control group; Panel C presents results for the Primary sample; and, Panel D presents results for the Secondary sample.[63]

Analysis

Table S.3 shows, for selected samples and control group total variables and the Historical Value-at-Risk variable presented in Table R.4, descriptive statistics results for *change in the total variables*. The Historical Value-at-Risk Actual variable results in Table R.4 are also re-tabulated in Table S.3. Table S.3 shows that for the samples and

[63] In general, the analysis of this section's results is presented prior to the presentation of the actual results tables.

the control group, both statistical mean and yearly standard deviation of sample means increase after 2005 compared to before; with some of these increases exhibiting material significance.

To determine the changes in the descriptive statistics for the change variables for before and after 2005, the percentage changes for the yearly mean and standard deviation of sample means are presented in Table S.1 and Table S.2 respectively. Table S.1 and Table S.2 present percentage changes for the time periods 1993 to 2004, to provide changes in levels for before 2005; and, 1993 to 2007 and 1993 to 2008 to provide changes for after 2005.

Table S.1 and Table S.2 Percentage Changes for Mean and Standard Deviation of Sample Means for Change in Total and Historical Value-at-Risk Actual Variable Results from Table S.3

Percentage Change Analysis Table Description

In Table S.1 and Table S.2, the Variable column represents the Description and Symbol columns that present the descriptions and *codes* for the selected *change* variables. The Year column represents the beginning (From) and ending (To) year applied to calculate the percentage changes presented in the Percentage Change column. The Percentage Change (%) column in Table S.1 represents the Mean column. This Mean column presents the mean variable percentage changes rounded to the nearest whole number. The Percentage Change column in Table S.2 represents the Standard Deviation column. This Standard Deviation column presents the percentage changes of the standard deviation of sample means rounded to the nearest whole number. In Table S.1 and Table S.2, the PS column presents the percentage changes for the Primary and Secondary sample. The C column presents the percentage changes for the Control group. The P column presents the percentage changes for the Primary sample. The S column presents the percentage changes for the Secondary sample.

Table description note:
Refer to this table description for Table S.1 and Table S.2 table details.

Table S.1 Percentage Changes for Mean Change in Total Variables and Historical Value-at-Risk Actual Variable Results from Table S.3

Variable		Year	Percentage Change (%)			
			Mean			
Description	Symbol	From - To	PS	C	P	S
Log Book-to-Market Ratio	*dln(BM)*	1993 - 2004	-87	-96	-96	-78
		1993 - 2007	-150	-195	-153	-142
		1993 - 2008	-226	-629	-219	-222
Book-to-Market Ratio	*dBM*	1993 - 2004	-95	-97	-95	-95
		1993 - 2007	-140	-237	-191	-126
		1993 - 2008	-201	-1,018	-345	-160
Log Market-To-Book Ratio	*dln(MB)*	1993 - 2004	-87	-96	-96	-78
		1993 - 2007	-150	-195	-153	-142
		1993 - 2008	-226	-629	-219	-222
Market-To-Book Ratio	*dMB*	1993 - 2004	-81	-95	-97	-56
		1993 - 2007	-135	-166	-131	-134
		1993 - 2008	-190	-447	-160	-224
Market Price	*dM*	1993 - 2004	-85	-63	-90	-82
		1993 - 2007	-114	-94	-126	-107
		1993 - 2008	-214	-225	-261	-184
Market Value	*dMV*	1993 - 2004	-85	-68	-88	-84
		1993 - 2007	-118	-122	-122	-116
		1993 - 2008	-171	-237	-199	-155
Shares Outstanding	*dS*	1993 - 2004	-104	-700	33	-84
		1993 - 2007	-79	-4,900	67	-55
		1993 - 2008	-1,396	-600	2,708	-887
Log Total Equity	*dln (E)*	1993 - 2004	-75	-60	-46	-83
		1993 - 2007	-51	-124	45	-77
		1993 - 2008	-99	-266	-5	-125
Total Equity	*dE*	1993 - 2004	-166	-63	-48	-128
		1993 - 2007	-225	-110	46	-136
		1993 - 2008	-158	-207	14	-99
Log Total Equity Per Share	*dln(E/S)*	1993 - 2004	-79	-55	-55	-83
		1993 - 2007	-55	-89	43	-73
		1993 - 2008	-252	-263	-306	-247
Total Equity Per Share	*d(E/S)*	1993 - 2004	-348	-58	-58	-181
		1993 - 2007	-548	-84	42	-200
		1993 - 2008	613	-206	-204	146
Total Assets	*dA*	1993 - 2004	-58	-58	20	-73
		1993 - 2007	-39	-128	129	-73
		1993 - 2008	-71	-283	213	-131
Total Liabilities	*dL*	1993 - 2004	-69	-125	23	-88
		1993 - 2007	-16	92	128	-44
		1993 - 2008	-50	-31	221	-108
Log Net Income	*dln(I)*	1993 - 2004	-75	132	-75	-81
		1993 - 2007	-75	-395	-93	-45
		1993 - 2008	-206	-1	-121	-355
Net Income	*dI*	1993 - 2004	-83	-16	-86	-81
		1993 - 2007	-60	-79	-98	41
		1993 - 2008	-159	537	-140	-193

Table S.2 Percentage Changes for Standard Deviation of Sample Means for Change in Total Variables and Historical Value-at-Risk Actual Variable Results from Table S.3

Variable		Year	Percentage Change (%)			
			Standard Deviation			
Description	Symbol	From - To	PS	C	P	S
Log Book-to-Market Ratio	*dln(BM)*	1993 - 2004	-10	-63	-24	24
		1993 - 2007	36	75	291	57
		1993 - 2008	38	264	406	12
Book-to-Market Ratio	*dBM*	1993 - 2004	-88	-57	34	-87
		1993 - 2007	-66	147	855	-70
		1993 - 2008	-58	833	1,587	-81
Log Market-To-Book Ratio	*dln(MB)*	1993 - 2004	-10	-63	-24	24
		1993 - 2007	36	75	291	57
		1993 - 2008	38	264	406	12
Market-To-Book Ratio	*dMB*	1993 - 2004	-47	-69	-57	-37
		1993 - 2007	-56	25	64	-56
		1993 - 2008	-61	74	57	-66
Market Price	*dM*	1993 - 2004	-63	-49	-46	-62
		1993 - 2007	17	51	125	10
		1993 - 2008	174	26	521	107
Market Value	*dMV*	1993 - 2004	-37	-45	-52	-32
		1993 - 2007	30	84	113	28
		1993 - 2008	24	104	184	-38
Shares Outstanding	*dS*	1993 - 2004	-36	-40	700	-34
		1993 - 2007	-75	468	425	-77
		1993 - 2008	365	-24	12,025	364
Log Total Equity	*dln (E)*	1993 - 2004	4	-28	-61	26
		1993 - 2007	13	169	-36	15
		1993 - 2008	161	202	143	174
Total Equity	*dE*	1993 - 2004	-90	-40	-64	-90
		1993 - 2007	-88	99	-33	-90
		1993 - 2008	-70	19	134	-73
Log Total Equity Per Share	*dln(E/S)*	1993 - 2004	-22	-31	-77	-14
		1993 - 2007	-48	124	-53	-48
		1993 - 2008	201	212	385	202
Total Equity Per Share	*d(E/S)*	1993 - 2004	-88	-41	-79	-88
		1993 - 2007	-90	76	-51	-91
		1993 - 2008	-76	23	193	-81
Total Assets	*dA*	1993 - 2004	-29	-23	2	-28
		1993 - 2007	63	97	377	36
		1993 - 2008	74	137	188	0
Total Liabilities	*dL*	1993 - 2004	-31	-55	5	-31
		1993 - 2007	41	19	380	34
		1993 - 2008	2	-50	185	-49
Log Net Income	*dln(I)*	1993 - 2004	-16	-46	-42	18
		1993 - 2007	-80	32	-84	-73
		1993 - 2008	1	-34	-10	25
Net Income	*dI*	1993 - 2004	-63	-44	-75	31
		1993 - 2007	-35	-50	-97	186
		1993 - 2008	-39	491	-37	-43

Examination of Table S.3, and the relative percentage change results presented in Table S.1 and Table S.2, suggests that for the Primary and Secondary sample, the *change in accounting total variables* did not exhibit materially significant changes after 2005 compared to before. However, the change in the market price variable exhibited a significant material decrease after 2005 compared to before. The Control group results suggest that the accounting and the market price change variables both exhibited materially significant decreases after 2005 compared to before, other than the net income variable that exhibits a materially significant increase in 2008.

The general inference from analysing the Table S.3 results is that the Primary and Secondary sample may have become exposed to materially significant *difference component* levels (that is, the levels of *difference* between the *change in accounting total variables and the market price return variable*) after 2005 compared to before. The Control group results, however, generally suggest a lower *difference component* after 2005 when compared to the Primary and Secondary sample levels.

Table S.3 Descriptive Statistics for the Change in Totals and Historical Value-at-Risk Actual Variables

Table Description

The Table S.3 columns represent the following:

Statistic column represents the panels: Mean calculated using equation (O.21); and, Standard Deviation of sample means calculated using equation (O.22), for the sample firms observed (*Obs.*) for year (Year).

The Year column represents the *panel data* year. This Year column also represents the fiscal accounting year applied to group variables on a yearly basis. In addition, the Year column represents the reporting year and specifies the variable record date applied for data collection. For banks in the UK banking sector the variable record date is generally the 31st December each year. For firms with a different financial end of year reporting date, the variable record date adheres to the convention specified in Section 3.6, criterion 7.

Representing yearly changes, the market derived variable columns are:

dln(BM) represents the log change in book-to-market ratio calculated by applying the approach specified in equation (3.33);
dBM represents the relative change in book-to-market ratio calculated by applying the approach specified in equation (3.34);
dln(MB) represents the log change in market-to-book ratio calculated by applying the approach specified in equation (3.33);
dMB represents the relative change in market-to-book ratio calculated by applying the approach specified in equation (3.34);
dM represents the log change in market price calculated by applying the approach specified in equation (3.35), also termed the market price return;
dMV represents the log change in market value calculated by applying the approach specified in equation (3.33);
dS represents the log change in total shares outstanding calculated by applying the approach specified in equation (3.33).

Representing yearly change variables derived from the key financial statement accounting total variables, the variable columns:

dln(E) represents the log change in total shareholders' equity calculated by applying equation (3.33);
dE represents the relative change in total shareholders' equity calculated by applying equation (3.34);
dln(E/S) represents the log change in total shareholders' equity per share calculated by applying equation (3.33);
d(E/S) represents the relative change in total shareholders' equity per share calculated by applying equation (3.34);
dA represents the log change in total assets calculated by applying equation (3.33);
dL represents the log change in total liabilities calculated by applying equation (3.33);
dln(I) represents the log change in net income calculated by applying equation (3.33);
dI represents the relative change in net income calculated by applying equation (3.34).

The *V* column represents the Historical Value-at-Risk Actual.
The *Obs.* column represents the number of sample firms observed for the year.

Table S.3 (Continued)

PANEL A

Descriptive Statistics for the Primary and Secondary Sample Change in Totals and Historical Value-at-Risk Actual Variables

Statistic	Year	*dln(BM)*	*dBM*	*dln(MB)*	*dMB*	*dM*	*dMV*	*dS*	*dln(E)*	*dE*	*dln(E/S)*	*d(E/S)*	*dA*	*dL*	*dln(I)*	*dI*	*V*	*Obs.*
Mean	1993	-0.344	-0.605	0.344	0.359	0.559	0.591	-0.024	0.178	-0.079	0.203	-0.023	0.225	0.227	0.445	1.537	-	15
	1994	-0.005	0.038	0.005	0.055	0.034	0.042	0.007	0.036	0.092	0.029	0.084	0.020	0.101	0.260	0.394	0.04	15
	1995	-0.117	-0.176	0.117	-1.055	0.213	0.382	0.200	0.190	0.409	0.142	0.241	0.206	0.216	0.214	0.508	-0.19	16
	1996	0.037	0.046	-0.037	-0.028	0.091	0.119	0.032	0.155	0.174	0.123	0.132	0.103	0.067	0.269	0.337	0.01	16
	1997	-0.065	-0.019	0.065	0.105	0.256	0.261	0.006	0.159	0.223	0.153	0.172	0.119	0.062	-0.109	-0.034	0.01	16
	1998	-0.011	0.025	0.011	0.051	0.058	0.115	0.028	0.079	0.095	0.052	0.059	0.095	0.093	0.225	0.369	-0.11	16
	1999	-0.093	-0.066	0.093	0.126	0.259	0.305	-0.025	0.154	0.174	0.179	0.201	0.094	-0.004	0.197	0.207	-0.11	16
	2000	-0.004	0.064	0.004	0.098	0.177	0.216	0.063	0.219	0.420	0.157	0.189	0.157	0.201	0.309	0.172	-0.13	16
	2001	0.199	0.289	-0.199	-0.146	-0.160	-0.166	-0.006	0.043	0.084	0.049	0.076	0.063	0.130	-0.376	-0.239	-0.30	16
	2002	0.327	0.497	-0.327	-0.240	-0.372	-0.358	0.013	-0.037	-0.018	-0.050	-0.034	-0.009	0.040	-0.866	-0.133	-0.41	16
	2003	-0.140	-0.118	0.140	0.168	0.233	0.247	0.012	0.097	0.110	0.084	0.096	0.055	0.060	0.258	-2.762	-0.52	16
	2004	-0.046	-0.029	0.046	0.070	0.086	0.087	0.001	0.044	0.052	0.043	0.057	0.095	0.070	0.110	0.258	-0.09	16
	2005	-0.037	-0.027	0.037	0.048	0.203	0.227	0.026	0.181	0.270	0.155	0.196	0.307	0.355	0.274	4.809	0.01	16
	2006	-0.039	-0.034	0.039	0.045	0.154	0.164	0.007	0.115	0.127	0.107	0.117	0.114	0.053	0.190	1.134	0.06	16
	2007	0.172	0.242	-0.172	-0.124	-0.077	-0.109	-0.005	0.087	0.099	0.092	0.103	0.138	0.191	0.110	0.613	-0.11	16
	2008	0.433	0.611	-0.433	-0.323	-0.636	-0.419	0.311	0.002	0.046	-0.309	-0.164	0.066	0.113	-0.472	-0.903	-0.73	16
Standard Deviation	1993	0.221	1.211	0.221	0.532	0.232	0.218	0.181	0.112	1.153	0.224	1.215	0.163	0.245	0.819	2.926	-	
	1994	0.313	0.297	0.313	0.374	0.230	0.221	0.011	0.154	0.120	0.149	0.117	0.191	0.287	0.396	0.934	0.21	
	1995	0.162	0.287	0.162	4.511	0.253	0.398	0.572	0.152	0.664	0.080	0.284	0.297	0.497	0.388	0.896	0.20	
	1996	0.135	0.140	0.135	0.132	0.131	0.126	0.070	0.103	0.133	0.052	0.060	0.156	0.202	0.206	0.314	0.18	
	1997	0.291	0.359	0.291	0.276	0.177	0.177	0.199	0.284	0.433	0.111	0.142	0.159	0.161	0.459	0.304	0.12	
	1998	0.283	0.277	0.283	0.326	0.222	0.231	0.067	0.152	0.181	0.112	0.123	0.119	0.186	0.405	0.710	0.26	
	1999	0.232	0.219	0.232	0.259	0.249	0.436	0.137	0.121	0.137	0.096	0.117	0.087	0.306	0.311	0.626	0.13	
	2000	0.402	0.365	0.402	0.592	0.346	0.455	0.289	0.439	1.110	0.185	0.232	0.418	0.478	0.386	0.814	0.31	
	2001	0.317	0.525	0.317	0.223	0.250	0.267	0.070	0.274	0.343	0.218	0.274	0.276	0.230	0.848	0.384	0.19	
	2002	0.365	0.755	0.365	0.220	0.318	0.316	0.026	0.200	0.200	0.184	0.179	0.173	0.168	0.945	0.982	0.25	
	2003	0.177	0.154	0.177	0.210	0.183	0.187	0.036	0.127	0.144	0.123	0.138	0.213	0.378	0.360	11.647	0.47	
	2004	0.199	0.151	0.199	0.283	0.086	0.138	0.116	0.117	0.111	0.175	0.145	0.115	0.170	0.685	1.092	0.23	
	2005	0.141	0.136	0.141	0.151	0.211	0.309	0.136	0.327	0.543	0.235	0.267	0.373	0.422	0.551	20.664	0.08	
	2006	0.101	0.092	0.101	0.112	0.096	0.115	0.089	0.102	0.115	0.082	0.091	0.193	0.304	0.794	3.527	0.13	
	2007	0.300	0.414	0.300	0.236	0.271	0.283	0.045	0.126	0.133	0.116	0.121	0.266	0.346	0.164	1.903	0.19	
	2008	0.305	0.513	0.305	0.208	0.635	0.270	0.841	0.292	0.344	0.675	0.294	0.283	0.250	0.828	1.783	0.65	

Panel notes: The change and Value-at-Risk Actual variable means are sample averages. The sample consists of a maximum of 16 observations per year from 16 firms in the LSE consisting of the 5 banks and 11 banking related firms that adopted the IFRS standards in 2005. The highlighted record identifies the samples IFRS accounting standards adoption year.

Table S.3 (Continued)

PANEL B

Descriptive Statistics for the Control Group Change in Totals and Historical Value-at-Risk Actual Variables

Statistic	Year	*dln(BM)*	*dBM*	*dln(MB)*	*dMB*	*dM*	*dMV*	*dS*	*dln(E)*	*dE*	*dln(E/S)*	*d(E/S)*	*dA*	*dL*	*dln(I)*	*dI*	*V*	*Obs.*
Mean	1993	-0.075	-0.067	0.075	0.083	0.336	0.345	0.002	0.273	0.320	0.271	0.316	0.215	-0.122	0.073	0.183	-	12
	1994	0.010	0.012	-0.010	-0.008	-0.092	-0.039	0.050	-0.032	-0.020	-0.082	-0.077	0.008	0.268	0.038	-0.028	-0.10	12
	1995	0.033	0.035	-0.033	-0.032	0.103	0.097	0.007	0.150	0.164	0.144	0.157	0.127	0.313	0.044	0.081	-0.19	12
	1996	0.061	0.066	-0.061	-0.056	0.020	0.083	0.063	0.120	0.158	0.057	0.070	0.089	0.026	0.189	0.095	-0.03	12
	1997	-0.021	-0.017	0.021	0.025	0.103	0.117	3.5E-05	0.112	0.128	0.112	0.128	0.097	0.027	0.008	0.062	-0.05	12
	1998	0.061	0.064	-0.061	-0.058	-0.106	-0.121	-0.001	-0.061	-0.040	-0.060	-0.039	-0.040	0.214	0.098	0.248	-0.24	12
	1999	-0.011	-0.009	0.011	0.012	0.355	0.311	-0.044	0.298	0.446	0.342	0.497	0.285	0.243	-0.220	-0.903	-0.17	12
	2000	-0.036	-0.034	0.036	0.038	0.015	-0.035	-0.051	-0.057	-0.032	-0.006	0.018	-0.040	0.092	0.044	0.063	-0.02	12
	2001	0.012	0.014	-0.012	-0.010	-0.183	-0.222	-0.039	-0.222	-0.196	-0.183	-0.164	-0.196	-0.197	-0.299	0.001	-0.30	12
	2002	-0.014	-0.010	0.014	0.019	-0.307	-0.311	-0.018	-0.328	-0.273	-0.310	-0.259	-0.275	-0.066	-0.559	-0.360	-0.38	12
	2003	0.001	0.002	-0.001	-0.001	0.238	0.234	-0.004	0.236	0.277	0.240	0.282	0.188	-0.020	0.059	0.103	-0.46	12
	2004	-0.003	-0.002	0.003	0.004	0.124	0.111	-0.012	0.110	0.119	0.122	0.132	0.091	0.030	0.169	0.154	-0.01	12
	2005	-0.050	-0.048	0.050	0.051	0.331	0.293	-0.038	0.242	0.283	0.281	0.329	0.210	0.025	0.131	0.102	0.06	12
	2006	0.007	0.008	-0.007	-0.006	0.094	0.026	-0.071	0.032	0.044	0.103	0.118	0.027	0.105	0.043	0.182	0.05	12
	2007	0.071	0.092	-0.071	-0.055	0.020	-0.076	-0.096	-0.065	-0.032	0.031	0.052	-0.060	-0.234	-0.215	0.039	-0.05	12
	2008	0.397	0.615	-0.397	-0.288	-0.421	-0.474	-0.010	-0.453	-0.341	-0.442	-0.336	-0.394	-0.084	0.072	1.165	-0.46	12
Standard Deviation	1993	0.106	0.090	0.106	0.126	0.161	0.164	0.025	0.099	0.134	0.093	0.125	0.118	0.606	0.448	0.608	-	
	1994	0.060	0.063	0.060	0.057	0.122	0.124	0.176	0.153	0.175	0.069	0.063	0.159	0.608	0.195	0.355	0.08	
	1995	0.043	0.044	0.043	0.042	0.069	0.115	0.035	0.068	0.078	0.076	0.087	0.065	1.340	0.175	0.170	0.11	
	1996	0.080	0.088	0.080	0.074	0.175	0.253	0.189	0.232	0.309	0.160	0.141	0.238	0.255	0.194	0.348	0.14	
	1997	0.092	0.085	0.092	0.099	0.158	0.175	1.2E-04	0.141	0.145	0.141	0.145	0.149	0.563	0.140	0.120	0.19	
	1998	0.056	0.060	0.056	0.053	0.237	0.238	0.003	0.229	0.175	0.230	0.175	0.218	0.354	0.244	0.488	0.22	
	1999	0.060	0.059	0.060	0.061	0.359	0.381	0.042	0.349	0.717	0.325	0.694	0.316	0.318	0.423	2.598	0.25	
	2000	0.053	0.049	0.053	0.057	0.255	0.253	0.042	0.238	0.212	0.238	0.212	0.251	0.480	0.268	0.288	0.23	
	2001	0.068	0.073	0.068	0.064	0.081	0.097	0.049	0.103	0.080	0.086	0.071	0.097	0.840	0.599	0.685	0.13	
	2002	0.101	0.094	0.101	0.110	0.178	0.187	0.019	0.137	0.108	0.142	0.114	0.114	0.126	0.404	0.282	0.08	
	2003	0.037	0.037	0.037	0.037	0.131	0.131	0.007	0.133	0.175	0.134	0.176	0.120	0.168	0.121	0.089	0.09	
	2004	0.039	0.039	0.039	0.039	0.082	0.090	0.015	0.071	0.081	0.064	0.074	0.091	0.273	0.240	0.339	0.07	
	2005	0.037	0.035	0.037	0.039	0.120	0.153	0.067	0.125	0.161	0.093	0.128	0.127	0.340	0.115	0.169	0.07	
	2006	0.040	0.041	0.040	0.039	0.179	0.188	0.104	0.159	0.161	0.146	0.148	0.160	0.560	0.329	0.264	0.16	
	2007	0.186	0.222	0.186	0.158	0.243	0.301	0.142	0.266	0.266	0.208	0.220	0.232	0.724	0.593	0.305	0.16	
	2008	0.386	0.840	0.386	0.219	0.203	0.334	0.019	0.299	0.160	0.290	0.154	0.280	0.306	0.296	3.591	0.18	

Panel notes: The change and Value-at-Risk Actual variable means are yearly averages from the Control group firms. The Control group consists of a maximum of 12 observations per year from 12 banking related firms in the LSE that did not adopt the IFRS standards in 2005. The highlighted record identifies the samples IFRS accounting standards adoption year.

Table S.3 (Continued)

PANEL C

Descriptive Statistics for the Primary Sample Change in Totals and Historical Value-at-Risk Actual Variables

Statistic	Year	*dln(BM)*	*dBM*	*dln(MB)*	*dMB*	*dM*	*dMV*	*dS*	*dln(E)*	*dE*	*dln(E/S)*	*d(E/S)*	*dA*	*dL*	*dln(I)*	*dI*	*V*	*Obs.*
Mean	1993	-0.576	-0.437	0.576	0.781	0.666	0.676	0.012	0.120	0.132	0.108	0.118	0.125	0.126	1.036	4.099	-	4
	1994	0.104	0.182	-0.104	-0.024	-0.056	-0.041	0.013	0.120	0.129	0.107	0.115	0.062	0.060	0.666	1.173	-0.02	4
	1995	-0.184	-0.152	0.184	0.229	0.324	0.327	0.114	0.288	0.368	0.174	0.191	0.211	0.207	0.292	0.374	-0.22	5
	1996	-0.087	-0.077	0.087	0.098	0.230	0.226	0.019	0.144	0.158	0.125	0.134	0.124	0.122	0.224	0.251	0.12	5
	1997	-0.136	-0.106	0.136	0.173	0.226	0.241	-0.119	-0.034	-0.005	0.085	0.089	0.043	0.047	-0.181	-0.150	0.06	5
	1998	0.065	0.077	-0.065	-0.055	-0.035	-0.029	0.006	0.028	0.029	0.022	0.024	0.014	0.013	0.001	0.034	-0.33	5
	1999	-0.173	-0.137	0.173	0.214	0.334	0.581	0.025	0.196	0.222	0.172	0.192	0.125	0.121	0.118	0.150	-0.12	5
	2000	0.253	0.310	-0.253	-0.212	0.094	0.351	0.272	0.574	1.179	0.302	0.374	0.438	0.427	0.409	0.546	-0.31	5
	2001	0.129	0.148	-0.129	-0.114	-0.032	-0.013	0.019	0.117	0.125	0.098	0.104	0.095	0.092	-0.091	-0.066	-0.16	5
	2002	0.185	0.218	-0.185	-0.160	-0.266	-0.254	0.008	-0.071	-0.061	-0.078	-0.068	0.047	0.055	-0.943	-0.600	-0.32	5
	2003	-0.098	-0.080	0.098	0.118	0.175	0.207	0.033	0.101	0.113	0.068	0.075	0.070	0.068	0.390	0.623	-0.38	5
	2004	-0.023	-0.022	0.023	0.025	0.066	0.081	0.016	0.065	0.068	0.049	0.050	0.150	0.155	0.256	0.569	-0.05	5
	2005	0.087	0.098	-0.087	-0.078	0.085	0.110	0.028	0.152	0.181	0.124	0.141	0.352	0.362	0.264	0.336	-0.01	5
	2006	-0.018	-0.017	0.018	0.019	0.120	0.137	0.014	0.118	0.128	0.104	0.112	0.092	0.090	0.074	0.100	0.02	5
	2007	0.308	0.398	-0.308	-0.244	-0.171	-0.149	0.020	0.174	0.193	0.154	0.167	0.286	0.287	0.073	0.089	-0.23	5
	2008	0.685	1.072	-0.685	-0.472	-1.071	-0.669	0.337	0.114	0.151	-0.223	-0.123	0.391	0.405	-0.219	-1.647	-1.08	5
Standard Deviation	1993	0.067	0.038	0.067	0.120	0.110	0.113	0.004	0.109	0.125	0.108	0.122	0.060	0.060	1.121	5.089	-	
	1994	0.439	0.422	0.439	0.494	0.230	0.220	0.012	0.067	0.073	0.066	0.072	0.115	0.123	0.539	1.190	0.21	
	1995	0.236	0.180	0.236	0.317	0.256	0.259	0.225	0.253	0.380	0.062	0.073	0.235	0.233	0.256	0.372	0.14	
	1996	0.136	0.130	0.136	0.143	0.099	0.088	0.066	0.080	0.091	0.033	0.037	0.045	0.046	0.032	0.039	0.06	
	1997	0.254	0.231	0.254	0.290	0.250	0.253	0.277	0.290	0.252	0.038	0.042	0.264	0.262	0.225	0.190	0.17	
	1998	0.157	0.174	0.157	0.143	0.132	0.140	0.014	0.056	0.058	0.063	0.064	0.065	0.070	0.295	0.306	0.33	
	1999	0.241	0.234	0.241	0.256	0.280	0.645	0.029	0.104	0.130	0.097	0.121	0.055	0.057	0.243	0.239	0.13	
	2000	0.200	0.295	0.200	0.138	0.140	0.545	0.464	0.645	1.864	0.191	0.279	0.471	0.463	0.260	0.398	0.19	
	2001	0.149	0.177	0.149	0.126	0.138	0.149	0.026	0.060	0.067	0.052	0.058	0.035	0.036	0.240	0.223	0.18	
	2002	0.171	0.211	0.171	0.142	0.176	0.186	0.020	0.142	0.125	0.140	0.125	0.077	0.078	0.264	0.100	0.10	
	2003	0.185	0.177	0.185	0.198	0.117	0.147	0.062	0.123	0.137	0.093	0.100	0.097	0.097	0.462	0.876	0.24	
	2004	0.051	0.051	0.051	0.052	0.059	0.054	0.032	0.042	0.045	0.025	0.026	0.061	0.063	0.653	1.253	0.07	
	2005	0.121	0.134	0.121	0.110	0.117	0.158	0.047	0.183	0.234	0.139	0.166	0.195	0.196	0.257	0.335	0.03	
	2006	0.044	0.043	0.044	0.045	0.071	0.074	0.023	0.069	0.079	0.062	0.068	0.017	0.017	0.232	0.244	0.04	
	2007	0.262	0.363	0.262	0.197	0.248	0.241	0.021	0.070	0.084	0.051	0.060	0.286	0.288	0.178	0.173	0.17	
	2008	0.339	0.641	0.339	0.188	0.683	0.321	0.485	0.265	0.293	0.524	0.358	0.173	0.171	1.006	3.225	0.65	

Panel notes: The change and Value-at-Risk Actual variable means are sample averages. The sample consists of a maximum of 5 observations per year from the 5 banks in the LSE that adopted the IFRS standards in 2005. The highlighted record identifies the samples IFRS accounting standards adoption year.

Table S.3 (Continued)

PANEL D

Descriptive Statistics for the Secondary Sample Change in Totals and Historical Value-at-Risk Actual Variables

Statistic	Year	*dln(BM)*	*dBM*	*dln(MB)*	*dMB*	*dM*	*dMV*	*dS*	*dln(E)*	*dE*	*dln(E/S)*	*d(E/S)*	*dA*	*dL*	*dln(I)*	*dI*	*V*	*Obs.*
Mean	1993	-0.260	-0.666	0.260	0.206	0.520	0.561	-0.038	0.200	-0.156	0.237	-0.074	0.261	0.264	0.230	0.605	-	11
	1994	-0.049	-0.020	0.049	0.087	0.070	0.075	0.005	0.002	0.077	-0.003	0.071	0.003	0.118	0.098	0.083	0.06	11
	1995	-0.090	-0.186	0.090	-1.569	0.169	0.403	0.234	0.150	0.425	0.130	0.261	0.204	0.219	0.183	0.561	-0.17	11
	1996	0.082	0.091	-0.082	-0.074	0.040	0.080	0.037	0.159	0.179	0.122	0.131	0.096	0.046	0.286	0.369	-0.02	11
	1997	-0.039	0.012	0.039	0.080	0.267	0.268	0.052	0.230	0.307	0.177	0.202	0.147	0.068	-0.083	0.008	-0.01	11
	1998	-0.038	0.007	0.038	0.089	0.092	0.168	0.036	0.098	0.119	0.063	0.072	0.124	0.122	0.306	0.491	-0.01	11
	1999	-0.057	-0.033	0.057	0.086	0.225	0.180	-0.048	0.134	0.152	0.182	0.205	0.079	-0.061	0.232	0.233	-0.10	11
	2000	-0.121	-0.048	0.121	0.239	0.214	0.155	-0.032	0.058	0.075	0.091	0.105	0.029	0.098	0.263	0.003	-0.05	11
	2001	0.230	0.352	-0.230	-0.161	-0.217	-0.235	-0.017	0.009	0.065	0.026	0.063	0.048	0.147	-0.506	-0.318	-0.36	11
	2002	0.392	0.624	-0.392	-0.277	-0.420	-0.406	0.016	-0.021	0.002	-0.037	-0.018	-0.034	0.034	-0.831	0.080	-0.46	11
	2003	-0.159	-0.135	0.159	0.190	0.259	0.265	0.003	0.095	0.108	0.092	0.106	0.048	0.057	0.197	-4.300	-0.58	11
	2004	-0.056	-0.033	0.056	0.091	0.095	0.089	-0.006	0.035	0.044	0.041	0.060	0.070	0.032	0.043	0.116	-0.11	11
	2005	-0.093	-0.084	0.093	0.105	0.257	0.280	0.025	0.194	0.310	0.169	0.221	0.287	0.352	0.279	6.843	0.02	11
	2006	-0.048	-0.041	0.048	0.056	0.170	0.177	0.004	0.113	0.127	0.109	0.119	0.124	0.036	0.243	1.604	0.08	11
	2007	0.110	0.172	-0.110	-0.070	-0.034	-0.091	-0.017	0.047	0.056	0.064	0.074	0.071	0.147	0.127	0.851	-0.06	11
	2008	0.318	0.402	-0.318	-0.255	-0.439	-0.306	0.299	-0.049	-0.002	-0.348	-0.182	-0.082	-0.020	-0.587	-0.564	-0.57	11
Standard Deviation	1993	0.195	1.428	0.195	0.543	0.256	0.242	0.212	0.110	1.353	0.249	1.433	0.176	0.278	0.610	0.800	-	
	1994	0.264	0.234	0.264	0.341	0.232	0.224	0.010	0.168	0.135	0.164	0.132	0.217	0.336	0.166	0.641	0.22	
	1995	0.129	0.328	0.129	5.323	0.251	0.452	0.672	0.078	0.766	0.086	0.336	0.330	0.582	0.438	1.050	0.22	
	1996	0.107	0.119	0.107	0.097	0.103	0.117	0.074	0.113	0.149	0.059	0.069	0.183	0.234	0.240	0.366	0.19	
	1997	0.311	0.400	0.311	0.281	0.156	0.156	0.154	0.260	0.464	0.119	0.155	0.107	0.126	0.526	0.334	0.10	
	1998	0.318	0.312	0.318	0.369	0.243	0.240	0.077	0.173	0.207	0.126	0.138	0.123	0.208	0.420	0.785	0.14	
	1999	0.230	0.215	0.230	0.262	0.239	0.252	0.162	0.127	0.140	0.100	0.121	0.097	0.357	0.342	0.750	0.14	
	2000	0.423	0.348	0.423	0.670	0.409	0.423	0.084	0.176	0.193	0.146	0.157	0.340	0.470	0.435	0.910	0.33	
	2001	0.372	0.622	0.372	0.260	0.272	0.285	0.082	0.327	0.417	0.262	0.332	0.336	0.279	0.998	0.423	0.16	
	2002	0.417	0.883	0.417	0.244	0.362	0.358	0.029	0.226	0.229	0.206	0.203	0.201	0.199	1.143	1.132	0.28	
	2003	0.179	0.148	0.179	0.221	0.206	0.206	0.012	0.135	0.153	0.138	0.156	0.253	0.459	0.311	13.95	0.54	
	2004	0.241	0.183	0.241	0.343	0.098	0.165	0.140	0.139	0.133	0.214	0.176	0.126	0.192	0.719	1.044	0.28	
	2005	0.113	0.097	0.113	0.133	0.227	0.351	0.164	0.383	0.644	0.272	0.306	0.439	0.501	0.655	25.01	0.10	
	2006	0.119	0.109	0.119	0.132	0.105	0.131	0.107	0.117	0.132	0.092	0.103	0.235	0.371	0.956	4.226	0.15	
	2007	0.307	0.433	0.307	0.240	0.281	0.309	0.049	0.127	0.131	0.129	0.133	0.240	0.373	0.164	2.285	0.18	
	2008	0.218	0.274	0.218	0.185	0.530	0.150	0.983	0.301	0.367	0.753	0.278	0.176	0.142	0.760	0.453	0.61	

Panel notes: The change and Value-at-Risk Actual variable means are sample averages. The sample consists of a maximum of 11 observations per year from 11 banking related firms in the LSE that adopted the IFRS standards in 2005. The highlighted record identifies the samples IFRS accounting standards adoption year.

S.2 Correlation Analysis for the Change in - Book-to-Market Ratio, Key Accounting and Market Total Variables to Historical Value-at-Risk Actual Variable

The correlation analysis between the change in total variables and the Historical Value-at-Risk variable in Table S.3 is presented on a yearly basis for the time range 1994 to 2008 in Table S.4. In Table S.4, Panel A presents results for the Primary and Secondary sample and the Control group; Panel B presents results for the Primary sample and the Secondary sample.

Table S.4 Correlation Analysis for the Change in Totals and Historical Value-at-Risk Actual Variables

Table Description

The Table S.4 columns represent the following:

Correlation Variables column represents the variable pairs correlated.

Measure column represents the data panels:
r panel represents the correlation coefficient calculated using the approach specified in equation (O.24); *p(r)* panel represents the probability significance level for correlation coefficient, *r*, calculated by applying equation (M.15).

For the samples and the control group columns:
1994 - 2008 column represents the correlation results for the total time period year range. A single year represents the fiscal accounting year, with the 31st December selected as the variable record date.

For the samples and the control group columns:
1994 - 2004 and 1994 - 2007 columns represent the correlation results for the sub-time period year ranges. A single year represents the fiscal accounting year, with the 31st December selected as the variable record date.

Table S.4 (Continued)

PANEL A

Correlation for the Primary and Secondary Sample and the Control Group Change in Total Variables to the Historical Value-at-Risk Actual Variable

Correlation Variables	Measure	Primary and Secondary Sample			Control Group		
		1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007
dln(BM) vs. V	***r***	-0.597*	-0.284	-0.281	-0.487	-0.052	-0.113
	p(r)	1.9E-02	4.0E-01	3.3E-01	6.6E-02	8.8E-01	7.0E-01
dBM vs. V	***r***	-0.622*	-0.316	-0.328	-0.486	-0.048	-0.090
	p(r)	1.3E-02	3.4E-01	2.5E-01	6.6E-02	8.9E-01	7.6E-01
dln(MB) vs. V	***r***	0.597*	0.284	0.281	0.487	0.052	0.113
	p(r)	1.9E-02	4.0E-01	3.3E-01	6.6E-02	8.8E-01	7.0E-01
dMB vs. V	***r***	0.280	0.138	0.180	0.485	0.054	0.131
	p(r)	3.1E-01	6.9E-01	5.4E-01	6.7E-02	8.8E-01	6.6E-01
dM vs. V	***r***	0.684**	0.353	0.375	0.514*	0.202	0.336
	p(r)	4.9E-03	2.9E-01	1.9E-01	5.0E-02	5.5E-01	2.4E-01
dMV vs. V	***r***	0.585*	0.326	0.325	0.502	0.248	0.306
	p(r)	2.2E-02	3.3E-01	2.6E-01	5.6E-02	4.6E-01	2.9E-01
dS vs. V	***r***	-0.578*	-0.012	-0.057	-0.161	0.224	-0.158
	p(r)	2.4E-02	9.7E-01	8.5E-01	5.7E-01	5.1E-01	5.9E-01
dln(E) vs. V	***r***	0.512	0.350	0.383	0.483	0.245	0.281
	p(r)	5.1E-02	2.9E-01	1.8E-01	6.8E-02	4.7E-01	3.3E-01
dE vs. V	***r***	0.337	0.252	0.241	0.406	0.185	0.218
	p(r)	2.2E-01	4.6E-01	4.1E-01	1.3E-01	5.9E-01	4.5E-01
dln(E/S) vs. V	***r***	0.742**	0.375	0.420	0.513	0.205	0.320
	p(r)	1.6E-03	2.6E-01	1.3E-01	5.0E-02	5.5E-01	2.6E-01
d(E/S) vs. V	***r***	0.686**	0.366	0.387	0.428	0.136	0.247
	p(r)	4.7E-03	2.7E-01	1.7E-01	1.1E-01	6.9E-01	3.9E-01
dA vs. V	***r***	0.395	0.318	0.400	0.491	0.263	0.288
	p(r)	1.5E-01	3.4E-01	1.6E-01	6.3E-02	4.3E-01	3.2E-01
dL vs. V	***r***	0.133	0.042	0.171	0.213	0.310	0.122
	p(r)	6.4E-01	9.0E-01	5.6E-01	4.4E-01	3.5E-01	6.8E-01
dln(I) vs. V	***r***	0.601*	0.449	0.482	0.385	0.558	0.516
	p(r)	1.8E-02	1.7E-01	8.1E-02	1.6E-01	7.4E-02	5.9E-02
dI vs. V	***r***	0.597*	0.743**	0.625*	-0.199	0.162	0.259
	p(r)	1.9E-02	8.8E-03	1.7E-02	4.8E-01	6.3E-01	3.7E-01
Years(T)		15	11	14	15	11	14

Panel notes: **, * Correlation coefficients significant at two-tailed levels.

Table S.4 (Continued)

PANEL B

Correlation for the Primary Sample and Secondary Sample Change in Total Variables to the Historical Value-at-Risk Actual Variable

Correlation Variables	Measure	Primary Sample			Secondary Sample		
		1994-2008	1994-2004	1994-2007	1994-2008	1994-2004	1994-2007
dln(BM) vs. V	***r***	-0.752**	-0.372	-0.345	-0.523*	-0.359	-0.366
	p(r)	1.2E-03	2.6E-01	2.3E-01	4.5E-02	2.8E-01	2.0E-01
dBM vs. V	***r***	-0.811**	-0.353	-0.349	-0.528*	-0.392	-0.407
	p(r)	2.5E-04	2.9E-01	2.2E-01	4.3E-02	2.3E-01	1.5E-01
dln(MB) vs. V	***r***	0.752**	0.372	0.345	0.523*	0.359	0.366
	p(r)	1.2E-03	2.6E-01	2.3E-01	4.5E-02	2.8E-01	2.0E-01
dMB vs. V	***r***	0.674**	0.387	0.335	0.189	0.111	0.160
	p(r)	5.8E-03	2.4E-01	2.4E-01	5.0E-01	7.5E-01	5.9E-01
dM vs. V	***r***	0.820**	0.321	0.337	0.592*	0.396	0.423
	p(r)	1.8E-04	3.4E-01	2.4E-01	2.0E-02	2.3E-01	1.3E-01
dMV vs. V	***r***	0.658**	0.169	0.183	0.521*	0.375	0.379
	p(r)	7.6E-03	6.2E-01	5.3E-01	4.6E-02	2.6E-01	1.8E-01
dS vs. V	***r***	-0.760**	-0.465	-0.444	-0.373	0.056	0.009
	p(r)	1.0E-03	1.5E-01	1.1E-01	1.7E-01	8.7E-01	9.8E-01
dln(E) vs. V	***r***	-0.065	-0.197	-0.194	0.519*	0.336	0.376
	p(r)	8.2E-01	5.6E-01	5.1E-01	4.8E-02	3.1E-01	1.9E-01
dE vs. V	***r***	-0.103	-0.258	-0.261	0.378	0.261	0.267
	p(r)	7.2E-01	4.4E-01	3.7E-01	1.6E-01	4.4E-01	3.6E-01
dln(E/S) vs. V	***r***	0.633*	0.096	0.080	0.596*	0.299	0.358
	p(r)	1.1E-02	7.8E-01	7.9E-01	1.9E-02	3.7E-01	2.1E-01
d(E/S) vs. V	***r***	0.468	0.029	0.018	0.566*	0.311	0.331
	p(r)	7.9E-02	9.3E-01	9.5E-01	2.8E-02	3.5E-01	2.5E-01
dA vs. V	***r***	-0.421	-0.166	-0.083	0.563*	0.338	0.416
	p(r)	1.2E-01	6.3E-01	7.8E-01	2.9E-02	3.1E-01	1.4E-01
dL vs. V	***r***	-0.435	-0.163	-0.074	0.299	0.057	0.172
	p(r)	1.0E-01	6.3E-01	8.0E-01	2.8E-01	8.7E-01	5.6E-01
dln(I) vs. V	***r***	0.296	0.188	0.196	0.671**	0.527	0.571*
	p(r)	2.8E-01	5.8E-01	5.0E-01	6.2E-03	9.6E-02	3.3E-02
dI vs. V	***r***	0.692**	0.143	0.129	0.571*	0.697*	0.596*
	p(r)	4.2E-03	6.7E-01	6.6E-01	2.6E-02	1.7E-02	2.5E-02
Years(T)		15	11	14	15	11	14

Panel notes: **, * Correlation coefficients significant at two-tailed levels.

Analysis

The Table S.4 correlation analysis results show that the samples and the control group *change in total variables* to the Historical Value-at-Risk Actual variable exhibit some statistically significant relationships. Majority of the correlations are observed for the Primary and Secondary sample for the 1994 to 2008 time period. With the Historical Value-at-Risk exhibiting statistically significant correlations with the variables change in book-to-market ratio, change in market price, change in total shares outstanding, change in equity per share and change in net income. The change in the net income variable also shows significance for the 1994 to 2004, and 1994 to 2007 time periods. The Control group exhibits statistical significance for the relationship between the change in the market price and the Historical Value-at-Risk Actual for the 1994 to 2008 time period.

A further examination shows that the correlation between the change in the market price variable and the Historical Value-at-Risk Actual for the time period 1994 to 2008, exhibits for the Primary and Secondary sample, a correlation coefficient of 0.684 at a 0.01 significance level. The Control group for the same variables and time period exhibit a correlation of 0.154 at a 0.05 significance level. The correlation between the change in the net income variable and the Historical Value-at-Risk Actual, exhibits for the Primary and Secondary sample a correlation of 0.597 at a 0.05 significance level for the 1994 to 2008 time period, 0.625 at a 0.05 significance level for the 1994 to 2007 time period, and a strong relationship is shown for the 1994 to 2004 time period with a correlation of 0.743 at a 0.01 significance level. For the other significantly related change variables to the Historical Value-at-Risk Actual variable, the correlation coefficient report levels between 0.742 to -0.622 at a significance level below 0.05. The significant correlations between market price return and Historical Value-at-Risk Actual for the samples and the control group from 1994 to 2008, suggests that the market price return reacted at similar levels and direction to the Historical Value-at-Risk Actual variable, after 2005 than before. This may suggest that the samples and the control group market price returns would have varied at the lower levels of its *distribution* after the 2005 accounting change.

APPENDIX T ANALYSIS AND RESULTS FOR CHANGE IN MARKET VALUE AND MARKET PRICE RETURN REGRESSIONS

This appendix presents the analysis and results for the relation before and after the 2005 accounting change between yearly changes in the market value variable to the market price variable (market price return variable). This analysis is conducted using cross-sectional and time series regressions.

T.1 Regressions for Change in Market Value and Market Price Return

The regression analysis for the change in market value and market price return is presented for the time range 1994 to 2008 in Table T.1 and Table T.2. In the regressions, the market price return variable is tested as the dependent variable, and the change in the market value variable is tested as the independent variable.

Table T.1 Cross-Sectional Regression Analysis for Change in Market Value and Market Price Return

Cross-Sectional Regression

Table T.1 Panel A to Panel D show the results for the cross-sectional regressions that test the change in market value and market price return by applying the regression specified in equation (O.25). In this table, Panel A presents results for the Primary and Secondary sample; Panel B presents results for the Control group; Panel C presents results for the Primary sample; and, Panel D presents results for the Secondary sample.

Cross-Sectional Regression Table Description

The Table T.1 columns represent the following:

Year is the *panel data* year represented by the number of days from 1st January to 31st December, and also represents the 31st December variable record date for each year.

The Regression column presents the coefficients and related statistics for the regression specified in equation (O.25), and follows the model:

$$dM_{i,t} = a + b \ dMV_{i,t} + e_{i,t}$$

Where: $dM_{i,t}$ is the log Market Price return ($M_{t-1,t}$) for the i^{th} firm at time t, $dMV_{i,t}$ is the change in Market Value ($MV_{t-1,t}$) for the i^{th} firm at time t, and $e_{N,t}$ is the regression error term. The *Lower* and *Upper* are the corresponding coefficient levels predicted at a 99% confidence level.

The Correlation column presents the correlation statistics for the relationship between the dependent and independent variables. The Descriptive Statistics column presents for the independent variable, the sample mean calculated using equation (O.17) and the sample standard deviation, *SD*, using equation (O.18). The *Obs.* column presents the number of sample firms observed for the year.

Table T.1 (Continued)

PANEL A

Cross-Sectional Regression Analysis for the Primary and Secondary Sample Change in Market Value and Market Price Return

	Regression													Correlation		Descriptive Statistics		
Year	Slope					Intercept					Model							*Obs.*
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	1.038**	60.41	2.8E-16	0.99	1.09	-0.01*	-2.66	2.1E-02	-0.02	1.E-03	1.00	0.01	12	0.998**	1.4E-16	0.04	0.22	14
1995	-0.322	-2.03	6.5E-02	-0.81	0.16	0.336**	3.92	2.0E-03	0.07	0.60	0.26	0.23	12	-0.506*	3.2E-02	0.38	0.40	14
1996	0.896**	6.19	3.2E-05	0.46	1.33	-0.015	-0.63	5.4E-01	-0.09	0.06	0.75	0.07	13	0.864**	1.6E-05	0.12	0.13	15
1997	0.993**	29.53	2.7E-13	0.89	1.09	-0.003	-0.29	7.8E-01	-0.03	0.03	0.99	0.02	13	0.993**	1.3E-13	0.26	0.18	15
1998	0.775**	4.94	2.7E-04	0.30	1.25	-0.031	-0.78	4.5E-01	-0.15	0.09	0.65	0.14	13	0.808**	1.4E-04	0.12	0.23	15
1999	0.381**	3.35	4.8E-03	0.04	0.72	0.143*	2.41	3.0E-02	-0.03	0.32	0.44	0.19	14	0.667**	2.4E-03	0.31	0.44	16
2000	0.594**	4.68	3.6E-04	0.22	0.97	0.048	0.77	4.5E-01	-0.14	0.23	0.61	0.22	14	0.781**	1.8E-04	0.22	0.46	16
2001	0.903**	13.90	1.4E-09	0.71	1.10	-0.010	-0.50	6.3E-01	-0.07	0.05	0.93	0.07	14	0.966**	7.0E-10	-0.17	0.27	16
2002	1.004**	49.98	3.5E-17	0.94	1.06	-0.012	-1.28	2.2E-01	-0.04	0.02	0.99	0.02	14	0.997**	1.8E-17	-0.36	0.32	16
2003	0.961**	17.88	4.9E-11	0.80	1.12	-0.005	-0.28	7.8E-01	-0.05	0.04	0.96	0.04	14	0.979**	2.4E-11	0.25	0.19	16
2004	0.344*	2.46	2.8E-02	-0.07	0.76	0.056*	2.52	2.4E-02	-0.01	0.12	0.30	0.07	14	0.549*	1.4E-02	0.09	0.14	16
2005	0.637**	9.63	1.5E-07	0.44	0.83	0.059*	2.37	3.3E-02	-0.02	0.13	0.87	0.08	14	0.932**	7.5E-08	0.23	0.31	16
2006	0.553**	3.31	5.1E-03	0.06	1.05	0.063	1.91	7.7E-02	-0.04	0.16	0.44	0.07	14	0.663**	2.6E-03	0.16	0.12	16
2007	0.882**	8.84	4.2E-07	0.58	1.18	0.019	0.66	5.2E-01	-0.07	0.11	0.85	0.11	14	0.921**	2.1E-07	-0.11	0.28	16
2008	1.917**	5.24	1.3E-04	0.83	3.01	0.168	0.93	3.7E-01	-0.37	0.71	0.66	0.38	14	0.814**	6.3E-05	-0.42	0.27	16

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The sample consists of a maximum of 16 observations per yearly regression from 16 firms in the LSE consisting of the 5 banks and 11 banking related firms that adopted the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table T.1 (Continued)

PANEL B

Cross-Sectional Regression Analysis for the Control Group Change in Market Value and Market Price Return

Year	Regression													Correlation		Descriptive Statistics		*Obs.*
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	-0.014	-0.04	9.7E-01	-1.08	1.05	-0.093*	-2.27	5.0E-02	-0.23	0.04	2E-04	0.13	9	-0.014	4.8E-01	-0.04	0.12	11
1995	0.526**	5.39	4.4E-04	0.21	0.84	0.052**	3.63	5.5E-03	0.01	0.10	0.76	0.04	9	0.874**	2.2E-04	0.10	0.11	11
1996	0.46*	2.81	1.8E-02	-0.06	0.98	-0.018	-0.43	6.8E-01	-0.15	0.11	0.44	0.14	10	0.665**	9.2E-03	0.08	0.25	12
1997	0.865**	10.76	8.1E-07	0.61	1.12	0.001	0.08	9.4E-01	-0.05	0.05	0.92	0.05	10	0.959**	4.0E-07	0.12	0.17	12
1998	0.974**	14.69	4.3E-08	0.76	1.18	0.012	0.71	4.9E-01	-0.04	0.07	0.96	0.05	10	0.978**	2.1E-08	-0.12	0.24	12
1999	0.937**	31.95	2.1E-11	0.84	1.03	0.063**	4.48	1.2E-03	0.02	0.11	0.99	0.04	10	0.995**	1.1E-11	0.31	0.38	12
2000	0.997**	18.92	3.7E-09	0.83	1.16	0.05**	3.90	3.0E-03	0.01	0.09	0.97	0.04	10	0.986**	1.8E-09	-0.03	0.25	12
2001	0.72**	5.29	3.5E-04	0.29	1.15	-0.023	-0.71	4.9E-01	-0.13	0.08	0.74	0.04	10	0.858**	1.8E-04	-0.22	0.10	12
2002	0.914**	10.76	8.1E-07	0.64	1.18	-0.023	-0.75	4.7E-01	-0.12	0.07	0.92	0.05	10	0.959**	4.1E-07	-0.31	0.19	12
2003	1**	55.97	8.0E-14	0.94	1.06	0.004	0.84	4.2E-01	-0.01	0.02	1.00	0.01	10	0.998**	4.0E-14	0.23	0.13	12
2004	0.904**	21.88	8.9E-10	0.77	1.04	0.024**	4.06	2.3E-03	0.01	0.04	0.98	0.01	10	0.99**	4.5E-10	0.11	0.09	12
2005	0.714**	6.87	4.3E-05	0.39	1.04	0.122**	3.58	5.0E-03	0.01	0.23	0.83	0.05	10	0.908**	2.2E-05	0.29	0.15	12
2006	0.799**	4.82	7.0E-04	0.27	1.33	0.073*	2.44	3.5E-02	-0.02	0.17	0.70	0.10	10	0.836**	3.5E-04	0.03	0.19	12
2007	0.713**	6.02	1.3E-04	0.34	1.09	0.074	2.10	6.2E-02	-0.04	0.19	0.78	0.12	10	0.885**	6.4E-05	-0.08	0.30	12
2008	0.582**	10.36	1.2E-06	0.40	0.76	-0.145**	-4.52	1.1E-03	-0.25	-0.04	0.91	0.06	10	0.956**	5.8E-07	-0.47	0.33	12

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The Control group consists of a maximum of 12 observations per yearly regression from 12 banking related firms in the LSE that did not adopt the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table T.1 (Continued)

PANEL C

Cross-Sectional Regression Analysis for the Primary Sample Change in Market Value and Market Price Return

Year	Regression													Correlation		Descriptive Statistics		*Obs.*
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	1.046**	31.90	9.8E-04	0.72	1.37	-0.013	-2.06	1.8E-01	-0.08	0.05	1.00	0.01	2	0.999**	4.9E-04	-0.04	0.22	4
1995	0.99**	48.71	4.2E-04	0.79	1.19	-2.3E-04	-0.03	9.8E-01	-0.08	0.08	1.00	0.01	2	1**	2.1E-04	0.33	0.26	4
1996	1.074*	4.34	4.9E-02	-1.38	3.53	-0.013	-0.21	8.5E-01	-0.60	0.57	0.90	0.04	2	0.951*	2.5E-02	0.23	0.09	4
1997	0.984**	11.81	7.1E-03	0.16	1.81	-0.012	-0.43	7.1E-01	-0.28	0.26	0.99	0.04	2	0.993**	3.5E-03	0.24	0.25	4
1998	0.94**	45.66	4.8E-04	0.74	1.14	-0.007	-2.78	1.1E-01	-0.03	0.02	1.00	5E-03	2	1**	2.4E-04	-0.03	0.14	4
1999	0.280	1.46	2.4E-01	-0.84	1.40	0.171	1.09	3.5E-01	-0.75	1.09	0.42	0.25	3	0.644	1.2E-01	0.58	0.65	5
2000	0.222	2.98	5.8E-02	-0.21	0.66	0.016	0.35	7.5E-01	-0.25	0.28	0.75	0.08	3	0.865*	2.9E-02	0.35	0.54	5
2001	0.915**	10.86	1.7E-03	0.42	1.41	-0.020	-1.78	1.7E-01	-0.09	0.05	0.98	0.03	3	0.988**	8.3E-04	-0.01	0.15	5
2002	0.943**	34.84	5.2E-05	0.79	1.10	-0.027*	-3.26	4.7E-02	-0.07	0.02	1.00	0.01	3	0.999**	2.6E-05	-0.25	0.19	5
2003	0.718*	3.60	3.7E-02	-0.45	1.88	0.027	0.54	6.2E-01	-0.26	0.31	0.81	0.06	3	0.901*	1.8E-02	0.21	0.15	5
2004	0.911	2.68	7.5E-02	-1.08	2.90	-0.008	-0.24	8.2E-01	-0.20	0.18	0.70	0.04	3	0.84*	3.8E-02	0.08	0.05	5
2005	0.738**	48.07	2.0E-05	0.65	0.83	0.004	1.47	2.4E-01	-0.01	0.02	1.00	5E-03	3	0.999**	9.9E-06	0.11	0.16	5
2006	0.889*	4.27	2.4E-02	-0.33	2.11	-0.002	-0.05	9.6E-01	-0.19	0.18	0.86	0.03	3	0.927*	1.2E-02	0.14	0.07	5
2007	1.026**	20.94	2.4E-04	0.74	1.31	-0.018	-1.41	2.5E-01	-0.09	0.06	0.99	0.02	3	0.997**	1.2E-04	-0.15	0.24	5
2008	1.717	2.37	9.9E-02	-2.52	5.96	0.078	0.15	8.9E-01	-3.01	3.17	0.65	0.47	3	0.807*	4.9E-02	-0.67	0.32	5

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The sample consists of a maximum of 5 observations per yearly regression from 16 firms in the LSE consisting of the 5 banks and 11 banking related firms that adopted the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table T.1 (Continued)

PANEL D

Cross-Sectional Regression Analysis for the Secondary Sample Change in Market Value and Market Price Return

Year	Regression													Correlation		Descriptive Statistics		*Obs.*
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	1.032**	45.68	5.8E-11	0.96	1.11	-0.008	-1.57	1.5E-01	-0.03	0.01	1.00	0.02	8	0.998**	1.4E-16	0.08	0.22	10
1995	-0.449**	-3.91	4.5E-03	-0.83	-0.06	0.35**	5.17	8.5E-04	0.12	0.58	0.66	0.16	8	-0.506*	3.2E-02	0.40	0.45	10
1996	0.684**	3.76	4.5E-03	0.09	1.28	-0.014	-0.57	5.8E-01	-0.10	0.07	0.61	0.07	9	0.864**	1.6E-05	0.08	0.12	11
1997	0.995**	26.34	7.9E-10	0.87	1.12	2.7E-04	0.02	9.8E-01	-0.04	0.04	0.99	0.02	9	0.993**	1.3E-13	0.27	0.16	11
1998	0.783**	3.67	5.1E-03	0.09	1.48	-0.039	-0.65	5.3E-01	-0.24	0.16	0.60	0.16	9	0.808**	1.4E-04	0.17	0.24	11
1999	0.74**	3.72	4.8E-03	0.09	1.39	0.092	1.53	1.6E-01	-0.10	0.29	0.61	0.16	9	0.667**	2.4E-03	0.18	0.25	11
2000	0.928**	10.53	2.3E-06	0.64	1.21	0.070	1.84	9.9E-02	-0.05	0.19	0.92	0.12	9	0.781**	1.8E-04	0.16	0.42	11
2001	0.916**	10.08	3.4E-06	0.62	1.21	-0.002	-0.07	9.5E-01	-0.11	0.10	0.92	0.08	9	0.966**	7.0E-10	-0.23	0.29	11
2002	1.01**	39.34	2.2E-11	0.93	1.09	-0.010	-0.73	4.8E-01	-0.05	0.03	0.99	0.03	9	0.997**	1.8E-17	-0.41	0.36	11
2003	0.998**	39.71	2.0E-11	0.92	1.08	-0.006	-0.68	5.1E-01	-0.03	0.02	0.99	0.02	9	0.979**	2.4E-11	0.26	0.21	11
2004	0.317	1.91	8.9E-02	-0.22	0.86	0.067	2.23	5.3E-02	-0.03	0.16	0.29	0.09	9	0.549*	1.4E-02	0.09	0.17	11
2005	0.598**	7.48	3.8E-05	0.34	0.86	0.089*	2.56	3.1E-02	-0.02	0.20	0.86	0.09	9	0.932**	7.5E-08	0.28	0.35	11
2006	0.488*	2.31	4.6E-02	-0.20	1.18	0.083	1.82	1.0E-01	-0.07	0.23	0.37	0.09	9	0.663**	2.6E-03	0.18	0.13	11
2007	0.829**	6.67	9.1E-05	0.43	1.23	0.041	1.08	3.1E-01	-0.08	0.17	0.83	0.12	9	0.921**	2.1E-07	-0.09	0.31	11
2008	2.644**	3.37	8.3E-03	0.09	5.19	0.370	1.40	2.0E-01	-0.49	1.23	0.56	0.37	9	0.814**	6.3E-05	-0.31	0.15	11

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The sample consists of a maximum of 11 observations per yearly regression from 11 banking related firms in the LSE that adopted the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table T.2 Time Series Regression Analysis for Change in Market Value and Market Price Return

Time Series Regression

Table T.2 Panel A to Panel D show the results for the time series regressions that test the change in market value and market price return by applying the regression specified in equation (O.26). In this table, Panel A presents results for the Primary and Secondary sample; Panel B presents results for the Control group; Panel C presents results for the Primary sample; and, Panel D presents results for the Secondary sample.

Time Series Regression Table Description

The Table T.2 columns represent the following:

The Total Period column represents the time series regression results for the year range 1994 to 2008, with a single year represented from 1st January to 31st December. The Sub-Periods column represents the time series regression results for the year range 1994 to 2004, and for 1994 to 2007, with a single year represented from 1st January to 31st December.

The Measure column represents the time series regression results for the total and sub-time periods and is represented by the data panels:

The *Regression* panel presents the coefficients and related statistics for the regression specified in equation (O.26), and follows the model:

$$dM_{N,t} = a + b\ dMV_{N,t} + e_{N,t}$$

Where: $dM_{N,t}$ is the log Market Price return ($M_{t-1,t}$) for N firms at time t, $dE_{N,t}$ is the log change in Market Value ($MV_{t-1,t}$) for N firms at time t, and $e_{N,t}$ is the regression error term. The *Lower* and *Upper* are the corresponding coefficient levels predicted at a 99% confidence level.

The *Correlation* panel presents the correlation statistics for the relationship between the dependent and independent variables. The *Descriptive Statistics* panel presents for the variables tested, the average sample means calculated using equation (M.6); the standard deviation, *SD*, of sample means for the time series using equation (M.7); and, the standard error of means, *SE*, for the time series. The *Observations* panel presents: *Firms (n)* (term *N* in the regression) that represents the average number of sample firms in the time series regression (for the Primary and Secondary sample, for the time period 1994 to 2004, the number of firms are rounded down); *Years (T)* represents the number of time series years; *Total (n x T)* represents the number of averaged pooled time series regression observations.

Table T.2 (Continued)

PANEL A

Time Series Regression Analysis for the Primary and Secondary Sample Change in Market Value and Market Price Return

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	1.033**	0.88**	0.872**
		t (b)	13.397	13.717	15.701
		p (b)	5.5E-09	2.4E-07	2.3E-09
		SE(b)	0.077	0.064	0.056
		Lower	0.801	0.672	0.703
		Upper	1.265	1.089	1.042
	Intercept	*a*	-0.042*	-0.020	-0.013
		t (a)	-2.257	-1.357	-1.040
		p (a)	4.2E-02	2.1E-01	3.2E-01
		SE(a)	0.019	0.015	0.012
		Lower	-0.098	-0.069	-0.051
		Upper	0.014	0.029	0.025
	Model	R^2	0.932	0.954	0.954
		s(e)	0.069	0.044	0.040
		df(e)	13	9	12
Correlation		*r*	0.966**	0.977**	0.977**
		p(r)	2.8E-09	1.2E-07	1.2E-09
Descriptive Statistics		*MV*	0.074	0.114	0.109
		SD (MV)	0.238	0.216	0.202
		SE(M)	0.061	0.065	0.054
		M	0.035	0.080	0.083
		SD (M)	0.254	0.194	0.180
		SE(M)	0.066	0.059	0.048
Observations		*Firms (n)*	16	15	16
		Years (T)	15	11	14
		Total (n x T)	233	169	217

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.
The sample consists of a maximum of 233 observations from 16 firms in the LSE consisting of the 5 banks and 11 banking related firms that adopted the IFRS standards in 2005. Observations are based on yearly averages calculated using daily levels from 1994 to 2008.
See main table notes for the regression model applied.
Regression coefficients and related statistics are calculated using OLS regression.

Table T.2 (Continued)

PANEL B

Time Series Regression Analysis for the Control Group Change in Market Value and Market Price Return

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	0.968**	0.992**	0.99**
		t (b)	18.173	15.387	14.469
		p (b)	1.3E-10	9.0E-08	5.9E-09
		SE(b)	0.053	0.064	0.068
		Lower	0.808	0.782	0.781
		Upper	1.129	1.201	1.199
	Intercept	*a*	0.020	0.004	0.018
		t (a)	-0.936	-0.401	-0.095
		p (a)	3.7E-01	7.0E-01	9.3E-01
		SE(a)	0.021	0.025	0.020
		Lower	-0.014	-0.034	-0.019
		Upper	0.054	0.042	0.055
	Model	R^2	0.962	0.963	0.946
		s(e)	0.044	0.038	0.045
		df(e)	13	9	12
Correlation		*r*	0.981**	0.982**	0.973**
		p(r)	6.3E-11	4.5E-08	2.9E-09
Descriptive Statistics		*MV*	-3.6E-04	0.021	0.033
		SD (MV)	0.219	0.188	0.183
		SE(M)	0.057	0.057	0.049
		M	0.020	0.025	0.051
		SD (M)	0.217	0.190	0.186
		SE(M)	0.056	0.057	0.050
Observations		*Firms (n)*	12	12	12
		Years (T)	15	11	14
		Total (n x T)	178	130	166

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.
The control consists of a maximum of 178 observations from 12 banking related firms in the LSE that did not adopt the IFRS standards in 2005. Observations are based on yearly averages calculated using daily levels from 1994 to 2008.
See main table notes for the regression model applied.
Regression coefficients and the related statistics are calculated using OLS regression.

Table T.2 (Continued)

PANEL C

Time Series Regression Analysis for the Primary Sample Change in Market Value and Market Price Return

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	1.087**	0.727**	0.748**
		t (b)	9.540	6.856	8.479
		p (b)	3.1E-07	7.4E-05	2.1E-06
		SE(b)	0.114	0.106	0.088
		Lower	0.744	0.382	0.479
		Upper	1.431	1.071	1.017
	Intercept	*a*	-0.079*	-0.014	-0.017
		t (a)	-2.348	-0.509	-0.770
		p (a)	3.5E-02	6.2E-01	4.6E-01
		SE(a)	0.033	0.028	0.022
		Lower	-0.179	-0.107	-0.083
		Upper	0.022	0.078	0.050
	Model	R^2	0.875	0.839	0.857
		s(e)	0.125	0.078	0.070
		df(e)	13	9	12
Correlation		*r*	0.935**	0.916**	0.926**
		p(r)	1.5E-07	3.7E-05	1.0E-06
Descriptive Statistics		*MV*	0.074	0.152	0.127
		SD (MV)	0.294	0.232	0.219
		SE(M)	0.076	0.070	0.058
		M	0.001	0.096	0.078
		SD (M)	0.342	0.184	0.177
		SE(M)	0.088	0.055	0.047
Observations		*Firms (n)*	5	5	5
		Years (T)	15	11	14
		Total (n x T)	70	51	64

Panel notes:

**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.

The sample consists of a maximum of 70 observations from the 5 banks in the LSE that adopted the IFRS standards in 2005. Observations are based on yearly averages calculated using daily levels from 1994 to 2008.

See main table notes for the regression model applied.

Regression coefficients and the related statistics are calculated using OLS regression.

Table T.2 (Continued)

PANEL D

Time Series Regression Analysis for the Secondary Sample Change in Market Value and Market Price Return

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	0.948**	0.868**	0.861**
		t (b)	10.573	8.199	9.723
		p (b)	9.4E-08	1.8E-05	4.8E-07
		SE(b)	0.090	0.106	0.089
		Lower	0.678	0.524	0.591
		Upper	1.218	1.213	1.132
	Intercept	*a*	-0.020	-0.010	-0.002
		t (a)	-0.936	-0.401	-0.095
		p (a)	3.7E-01	7.0E-01	9.3E-01
		SE(a)	0.021	0.025	0.020
		Lower	-0.084	-0.093	-0.064
		Upper	0.044	0.072	0.061
	Model	R^2	0.896	0.882	0.887
		s(e)	0.078	0.077	0.069
		df(e)	13	9	12
Correlation		*r*	0.946**	0.939**	0.942**
		p(r)	4.7E-08	9.1E-06	2.4E-07
Descriptive Statistics		*MV*	0.074	0.095	0.101
		SD (MV)	0.233	0.230	0.216
		SE(M)	0.060	0.069	0.058
		M	0.050	0.072	0.085
		SD (M)	0.233	0.213	0.197
		SE(M)	0.060	0.064	0.053
Observations		*Firms (n)*	11	11	11
		Years (T)	15	11	14
		Total (n x T)	163	119	152

Panel notes:

**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.

The sample consists of a maximum of 163 observations from 11 banking related firms in the LSE that adopted the IFRS standards in 2005. Observations are based on yearly averages calculated using daily levels from 1994 to 2008.

See main table notes for the regression model applied.

Regression coefficients and the related statistics are calculated using OLS regression.

Analysis

The Table T.1 and Table T.2 cross-sectional and time series regression slopes show that the change in the market value variable exhibits statistically significant explanatory power to the market price return variable for the samples and the control group for the time periods 1994 to 2008, 1994 to 2004 and 1994 to 2007.

The Table T.2 Panel C time series regression slope for the Primary sample shows that before 2005, a 1% variation in the change in the market value variable related to less than a 1% change in the market price return variable. After 2005, the slope shows that for a 1% variation in the change in market value the market price return changed more than 1%.

APPENDIX U ANALYSIS AND RESULTS FOR CHANGE IN ACCOUNTING AND CHANGE IN MARKET PRICE CROSS-SECTIONAL REGRESSIONS

This appendix present analysis and results for the yearly key accounting totals and market price return cross-sectional regressions.

U.1 Regressions for Change in Total Equity and Market Price Return

The regression analysis for the change in total equity and market price return is presented for the time range 1994 to 2008 in Table U.1. In the regressions, the market price return variable is tested as the dependent variable, and the change in the total equity variable is tested as the independent variable.

Table U.1 Cross-Sectional Regression Analysis for Change in Total Equity and Market Price Return

Cross-Sectional Regression

Table U.1 Panel A to Panel D show the results for the cross sectional regressions that test the change in total equity and market price return by applying the regression specified in equation (O.27). In this table, Panel A presents results for the Primary and Secondary sample; Panel B presents results for the Control group; Panel C presents results for the Primary sample; and, Panel D presents results for the Secondary sample.

Cross-Sectional Regression Table Description

The Table U.1 columns represent the following:

Year is the *panel data* year represented by the number of days from 1st January to 31st December, and also represents the 31st December variable record date for each year.

The Regression column presents the coefficients and related statistics for the regression specified in equation (O.27), and follows the model:

$$dM_{i,t} = a + b\ dE_{i,t} + e_{i,t}$$

Where: $dM_{i,t}$ is the log Market Price return ($M_{t-1,t}$) for the i^{th} firm at time t, $dE_{i,t}$ is the change in Total Equity($E_{t-1,t}$) for the i^{th} firm at time t, and $e_{N,t}$ is the regression error term. The *Lower* and *Upper* are the corresponding coefficient levels predicted at a 99% confidence level.

The Correlation column presents the correlation statistics for the relationship between the dependent and independent variables. The Descriptive Statistics column presents for the independent variable, the sample mean calculated using equation (O.17) and the sample standard deviation, *SD*, using equation (O.18). The *Obs.* column presents the number of sample firms observed for the year.

Table U.1 (Continued)

PANEL A

Cross-Sectional Regression Analysis for the Primary and Secondary Sample Change in Total Equity ($E_{t-1,t}$) and Market Price Return ($M_{t-1,t}$)

Year	Regression													Correlation		Descriptive Statistics		*Obs.*
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	0.640	1.23	2.4E-01	-0.95	2.23	0.210	-0.33	7.5E-01	-0.26	0.21	0.11	0.23	12	0.335	1.2E-01	0.09	0.12	14
1995	-0.269**	-3.46	4.7E-03	-0.51	-0.03	0.504**	5.47	1.4E-04	0.14	0.50	0.50	0.19	12	-0.707**	2.4E-03	0.41	0.66	14
1996	-0.007	-0.03	9.8E-01	-0.83	0.82	0.270	1.56	1.4E-01	-0.09	0.27	4.E-05	0.14	13	-0.007	4.9E-01	0.17	0.13	15
1997	0.001	0.01	9.9E-01	-0.34	0.34	0.417**	4.77	3.6E-04	0.09	0.42	1.E-05	0.18	13	0.003	5.0E-01	0.22	0.43	15
1998	0.189	0.56	5.8E-01	-0.82	1.20	0.241	0.61	5.6E-01	-0.16	0.24	0.02	0.23	13	0.155	2.9E-01	0.09	0.18	15
1999	0.374	0.79	4.5E-01	-1.04	1.79	0.504	1.87	8.3E-02	-0.12	0.50	0.04	0.25	14	0.205	2.2E-01	0.17	0.14	16
2000	0.023	0.28	7.9E-01	-0.23	0.27	0.453	1.74	1.0E-01	-0.12	0.45	0.01	0.36	14	0.074	3.9E-01	0.42	1.11	16
2001	-0.130	-0.68	5.1E-01	-0.70	0.44	0.047*	-2.27	4.0E-02	-0.34	0.05	0.03	0.25	14	-0.179	2.5E-01	0.08	0.34	16
2002	0.136	0.32	7.5E-01	-1.12	1.39	-0.125**	-4.49	5.1E-04	-0.62	-0.13	0.01	0.33	14	0.086	3.8E-01	-0.02	0.20	16
2003	0.384	1.18	2.6E-01	-0.59	1.35	0.362**	3.30	5.3E-03	0.02	0.36	0.09	0.18	14	0.301	1.3E-01	0.11	0.14	16
2004	-0.4*	-2.24	4.2E-02	-0.93	0.13	0.17**	5.01	1.9E-04	0.04	0.17	0.26	0.08	14	-0.514*	2.1E-02	0.05	0.11	16
2005	0.314**	5.10	1.6E-04	0.13	0.50	0.227**	3.27	5.6E-03	0.01	0.23	0.65	0.13	14	0.806**	8.1E-05	0.27	0.54	16
2006	-0.094	-0.43	6.8E-01	-0.75	0.57	0.278**	4.44	5.6E-04	0.06	0.28	0.01	0.10	14	-0.113	3.4E-01	0.13	0.12	16
2007	-0.332	-0.62	5.5E-01	-1.94	1.27	0.216	-0.50	6.2E-01	-0.30	0.22	0.03	0.28	14	-0.163	2.7E-01	0.10	0.13	16
2008	-1.077*	-2.68	1.8E-02	-2.27	0.12	-0.186**	-4.35	6.6E-04	-0.99	-0.19	0.34	0.53	14	-0.583**	8.9E-03	0.05	0.34	16

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The sample consists of a maximum of 16 observations per yearly regression from 16 firms in the LSE consisting of the 5 banks and 11 banking related firms that adopted the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table U.1 (Continued)

PANEL B

Cross-Sectional Regression Analysis for the Control Group Change in Total Equity ($E_{t-1,t}$) and Market Price Return ($M_{t-1,t}$)

Year	Regression: Slope					Regression: Intercept					Regression: Model			Correlation		Descriptive Statistics		Obs.
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	-0.316	-1.51	1.6E-01	-0.99	0.36	-0.098*	-2.81	2.0E-02	-0.21	0.02	0.20	0.12	9	-0.451	8.2E-02	-0.02	0.17	11
1995	0.752**	4.80	9.7E-04	0.24	1.26	-0.021	-0.74	4.8E-01	-0.11	0.07	0.72	0.04	9	0.848**	4.8E-04	0.16	0.08	11
1996	0.256	1.60	1.4E-01	-0.25	0.76	-0.020	-0.37	7.2E-01	-0.19	0.15	0.21	0.16	10	0.452	7.0E-02	0.16	0.31	12
1997	1.052**	12.93	1.4E-07	0.79	1.31	-0.032	-2.08	6.4E-02	-0.08	0.02	0.94	0.04	10	0.971**	7.2E-08	0.13	0.15	12
1998	1.315**	12.79	1.6E-07	0.99	1.64	-0.054*	-3.03	1.3E-02	-0.11	2.5E-03	0.94	0.06	10	0.971**	8.0E-08	-0.04	0.17	12
1999	0.495**	20.92	1.4E-09	0.42	0.57	0.134**	6.93	4.1E-05	0.07	0.20	0.98	0.06	10	0.989**	6.9E-10	0.45	0.72	12
2000	1.116**	7.88	1.3E-05	0.67	1.57	0.051	1.76	1.1E-01	-0.04	0.14	0.86	0.10	10	0.928**	6.7E-06	-0.03	0.21	12
2001	0.8**	4.09	2.2E-03	0.18	1.42	-0.026	-0.64	5.4E-01	-0.16	0.10	0.63	0.05	10	0.791**	1.1E-03	-0.20	0.08	12
2002	1.58**	10.48	1.0E-06	1.10	2.06	0.124*	2.83	1.8E-02	-0.02	0.26	0.92	0.05	10	0.957**	5.1E-07	-0.27	0.11	12
2003	0.707**	8.83	4.9E-06	0.45	0.96	0.042	1.62	1.4E-01	-0.04	0.12	0.89	0.05	10	0.941**	2.5E-06	0.28	0.17	12
2004	0.963**	8.91	4.5E-06	0.62	1.31	0.009	0.59	5.7E-01	-0.04	0.06	0.89	0.03	10	0.942**	2.3E-06	0.12	0.08	12
2005	0.676**	6.79	4.8E-05	0.36	0.99	0.139**	4.34	1.5E-03	0.04	0.24	0.82	0.05	10	0.906**	2.4E-05	0.28	0.16	12
2006	0.835**	3.59	4.9E-03	0.10	1.57	0.057	1.53	1.6E-01	-0.06	0.18	0.56	0.12	10	0.75**	2.5E-03	0.04	0.16	12
2007	0.808**	6.06	1.2E-04	0.39	1.23	0.046	1.34	2.1E-01	-0.06	0.15	0.79	0.12	10	0.887**	6.1E-05	-0.03	0.27	12
2008	1.212**	10.47	1.0E-06	0.85	1.58	-0.008	-0.18	8.6E-01	-0.15	0.13	0.92	0.06	10	0.957**	5.2E-07	-0.34	0.16	12

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The Control group consists of a maximum of 12 observations per yearly regression from 12 banking related firms in the LSE that did not adopt the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table U.1 (Continued)

PANEL C

Cross-Sectional Regression Analysis for the Primary Change in Total Equity ($E_{t-1,t}$) and Market Price Return ($M_{t-1,t}$)

Year	Regression													Correlation		Descriptive Statistics		*Obs.*
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	-2.557	-1.96	1.9E-01	-15.52	10.41	0.273	1.46	2.8E-01	-1.59	2.14	0.66	0.17	2	-0.811	9.5E-02	0.13	0.07	4
1995	0.184	0.40	7.3E-01	-4.38	4.74	0.256	1.13	3.8E-01	-1.99	2.51	0.07	0.30	2	0.273	3.6E-01	0.37	0.38	4
1996	-0.207	-0.27	8.1E-01	-7.73	7.31	0.262	1.96	1.9E-01	-1.07	1.59	0.04	0.12	2	-0.189	4.1E-01	0.16	0.09	4
1997	0.126	0.18	8.7E-01	-6.80	7.05	0.226	1.49	2.8E-01	-1.28	1.74	0.02	0.30	2	0.127	4.4E-01	-0.01	0.25	4
1998	0.339	0.21	8.5E-01	-15.51	16.19	-0.045	-0.48	6.8E-01	-0.96	0.87	0.02	0.16	2	0.148	4.3E-01	0.03	0.06	4
1999	1.481	1.64	2.0E-01	-3.80	6.77	0.004	0.02	9.9E-01	-1.32	1.33	0.47	0.24	3	0.687	1.0E-01	0.22	0.13	5
2000	0.058	2.10	1.3E-01	-0.10	0.22	0.025	0.45	6.8E-01	-0.30	0.35	0.60	0.10	3	0.771	6.3E-02	1.18	1.86	5
2001	0.436	0.38	7.3E-01	-6.32	7.19	-0.087	-0.54	6.3E-01	-1.03	0.85	0.05	0.16	3	0.213	3.7E-01	0.13	0.07	5
2002	0.754	1.10	3.5E-01	-3.26	4.76	-0.220	-2.52	8.6E-02	-0.73	0.29	0.29	0.17	3	0.535	1.8E-01	-0.06	0.13	5
2003	-0.219	-0.46	6.8E-01	-3.01	2.57	0.200	2.51	8.7E-02	-0.27	0.67	0.07	0.13	3	-0.256	3.4E-01	0.11	0.14	5
2004	-0.064	-0.08	9.4E-01	-4.50	4.38	0.070	1.17	3.3E-01	-0.28	0.42	2E-03	0.07	3	-0.048	4.7E-01	0.07	0.04	5
2005	0.47*	4.84	1.7E-02	-0.10	1.04	2.4E-04	0.01	9.9E-01	-0.16	0.16	0.89	0.05	3	0.942**	8.4E-03	0.18	0.23	5
2006	0.565	1.39	2.6E-01	-1.81	2.94	0.048	0.81	4.8E-01	-0.30	0.39	0.39	0.06	3	0.626	1.3E-01	0.13	0.08	5
2007	-0.591	-0.36	7.5E-01	-10.30	9.12	-0.057	-0.17	8.8E-01	-2.07	1.95	0.04	0.28	3	-0.201	3.7E-01	0.19	0.08	5
2008	0.349	0.26	8.1E-01	-7.44	8.14	-1.124	-2.79	6.9E-02	-3.48	1.23	0.02	0.78	3	0.150	4.1E-01	0.15	0.29	5

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The sample consists of a maximum of 5 observations per yearly regression from the 5 banks in the LSE that adopted the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table U.1 (Continued)

PANEL D

Cross-Sectional Regression Analysis for the Secondary Sample Change in Total Equity ($E_{t-1,t}$) and Market Price Return ($M_{t-1,t}$)

Year	Regression													Correlation		Descriptive Statistics		*Obs.*
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	1.093*	2.35	4.7E-02	-0.47	2.66	-0.014	-0.21	8.4E-01	-0.25	0.22	0.41	0.19	8	0.639*	2.3E-02	0.08	0.14	10
1995	-0.302**	-6.79	1.4E-04	-0.45	-0.15	0.297**	7.93	4.7E-05	0.17	0.42	0.85	0.10	8	-0.923**	7.0E-05	0.42	0.77	10
1996	0.069	0.30	7.7E-01	-0.68	0.81	0.028	0.54	6.1E-01	-0.14	0.20	0.01	0.11	9	0.100	3.8E-01	0.18	0.15	11
1997	-0.027	-0.24	8.1E-01	-0.39	0.34	0.276**	4.59	1.3E-03	0.08	0.47	0.01	0.16	9	-0.081	4.1E-01	0.31	0.46	11
1998	0.118	0.30	7.7E-01	-1.15	1.38	0.078	0.87	4.1E-01	-0.21	0.37	0.01	0.25	9	0.100	3.8E-01	0.12	0.21	11
1999	-0.111	-0.20	8.5E-01	-1.96	1.74	0.242	2.10	6.5E-02	-0.13	0.62	4E-03	0.25	9	-0.065	4.2E-01	0.15	0.14	11
2000	0.208	0.30	7.7E-01	-2.07	2.49	0.199	1.42	1.9E-01	-0.26	0.65	0.01	0.43	9	0.098	3.9E-01	0.08	0.19	11
2001	-0.159	-0.75	4.7E-01	-0.85	0.53	-0.207*	-2.43	3.8E-02	-0.48	0.07	0.06	0.28	9	-0.243	2.4E-01	0.07	0.42	11
2002	0.130	0.25	8.1E-01	-1.58	1.83	-0.42**	-3.66	5.2E-03	-0.79	-0.05	0.01	0.38	9	0.082	4.1E-01	2E-03	0.23	11
2003	0.584	1.44	1.8E-01	-0.73	1.90	0.195*	2.65	2.6E-02	-0.04	0.43	0.19	0.20	9	0.433	9.2E-02	0.11	0.15	11
2004	-0.406	-1.98	7.9E-02	-1.07	0.26	0.113**	4.13	2.6E-03	0.02	0.20	0.30	0.09	9	-0.551*	3.9E-02	0.04	0.13	11
2005	0.291**	4.43	1.6E-03	0.08	0.51	0.167**	3.69	5.0E-03	0.02	0.31	0.69	0.13	9	0.828**	8.2E-04	0.31	0.64	11
2006	-0.187	-0.73	4.9E-01	-1.02	0.65	0.193**	4.21	2.3E-03	0.04	0.34	0.06	0.11	9	-0.236	2.4E-01	0.13	0.13	11
2007	-0.039	-0.06	9.6E-01	-2.37	2.29	-0.032	-0.33	7.5E-01	-0.35	0.29	3E-04	0.30	9	-0.018	4.8E-01	0.06	0.13	11
2008	-1.256**	-5.31	4.9E-04	-2.03	-0.49	-0.441**	-5.32	4.8E-04	-0.71	-0.17	0.76	0.27	9	-0.871**	2.4E-04	-2E-03	0.37	11

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The sample consists of a maximum of 11 observations per yearly regression from 11 banking related firms in the LSE that adopted the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Analysis

The Table U.1 cross-sectional regression slopes show that the change in the total equity variable exhibits varying levels of statistically significant explanatory power to the market price return variable for the samples and the control group.

The Primary and Secondary sample shows statistical significance for years 1995, 2004, 2005 and 2008. The Control group shows extensive statistical significance other than for the two years: 1994 and 1996.

U.2 Regressions for Change in Total Equity per Share and Market Price Return

The regression analysis for the change in total equity per share and market price return is presented for the time range 1994 to 2008 in Table U.2. In the regressions, the market price return variable is tested as the dependent variable, and the change in the total equity per share variable is tested as the independent variable.

Table U.2 Cross-Sectional Regression Analysis for Change in Total Equity per Share and Market Price Return

Cross-Sectional Regression

Table U.2 Panel A to Panel D show the results for the cross-sectional regressions that test the change in total equity per share and market price return by applying the regression specified in equation (O.27). In this table, Panel A presents results for the Primary and Secondary sample; Panel B presents results for the Control group; Panel C presents results for the Primary sample; and, Panel D presents results for the Secondary sample.

Cross-Sectional Regression Table Description

The Table U.2 columns represent the following:

Year is the panel data year represented by the number of days from 1st January to 31st December, and also represents the 31st December variable record date for each year.

The Regression column presents the coefficients and related statistics for the regression specified in equation (O.27), and follows the model:

$$dM_{i,t} = a + b\ d(E/S)_{i,t} + e_{i,t}$$

Where: $dM_{i,t}$ is the log Market Price return $(M_{t-1,t})$ for the i^{th} firm at time t, $d(E/S)_{i,t}$ is the change in Total Equity per Share $(E_{t-1,t}/S_{t-1,t})$ for the i^{th} firm at time t, and $e_{N,t}$ is the regression error term. The *Lower* and *Upper* are the corresponding coefficient levels predicted at a 99% confidence level.

The Correlation column presents the correlation statistics for the relationship between the dependent and independent variables. The Descriptive Statistics column presents for the independent variable, the sample mean calculated using equation (O.17) and the sample standard deviation, *SD*, using equation (O.18). The *Obs.* column presents the number of sample firms observed for the year.

Table U.2 (Continued)

PANEL A

Cross-Sectional Regression Analysis for the Primary and Secondary Sample Change in Total Equity per Share ($E_{t-1,t}$ /$S_{t-1,t}$) and Market Price Return ($M_{t-1,t}$)

Year	Regression													Correlation		Descriptive Statistics		*Obs.*
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	-0.749	-1.77	1.0E-01	-2.04	0.54	0.244	1.06	3.1E-01	-0.12	0.24	0.21	0.21	12	-0.455	5.1E-02	0.04	0.14	14
1995	0.567**	5.18	2.3E-04	0.23	0.90	0.294**	4.32	9.9E-04	0.05	0.29	0.69	0.15	12	0.831**	1.1E-04	0.07	0.37	14
1996	0.430	0.73	4.8E-01	-1.34	2.20	0.290	0.40	6.9E-01	-0.22	0.29	0.04	0.13	13	0.199	2.4E-01	0.13	0.06	15
1997	0.051	0.15	8.8E-01	-0.98	1.09	0.475**	3.27	6.1E-03	0.02	0.48	2E-03	0.18	13	0.041	4.4E-01	0.17	0.14	15
1998	0.450	0.93	3.7E-01	-1.01	1.91	0.225	0.49	6.3E-01	-0.16	0.23	0.06	0.22	13	0.249	1.9E-01	0.06	0.12	15
1999	0.854	1.74	1.1E-01	-0.63	2.34	0.457	0.94	3.6E-01	-0.24	0.46	0.19	0.22	13	0.434	5.3E-02	0.20	0.12	15
2000	0.118	0.30	7.7E-01	-1.07	1.30	0.502	1.32	2.1E-01	-0.19	0.50	0.01	0.36	14	0.079	3.9E-01	0.19	0.23	16
2001	-0.174	-0.73	4.8E-01	-0.89	0.54	0.05*	-2.22	4.4E-02	-0.34	0.05	0.04	0.25	14	-0.191	2.4E-01	0.08	0.27	16
2002	0.173	0.37	7.2E-01	-1.23	1.58	-0.118**	-4.39	6.2E-04	-0.61	-0.12	0.01	0.33	14	0.098	3.6E-01	-0.03	0.18	16
2003	0.397	1.17	2.6E-01	-0.61	1.40	0.36**	3.50	3.6E-03	0.03	0.36	0.09	0.18	14	0.299	1.3E-01	0.10	0.14	16
2004	-0.146	-0.94	3.6E-01	-0.61	0.32	0.164**	4.03	1.2E-03	0.02	0.16	0.06	0.09	14	-0.245	1.8E-01	0.06	0.14	16
2005	0.71**	7.62	2.4E-06	0.43	0.99	0.154	2.12	5.3E-02	-0.03	0.15	0.81	0.10	14	0.898**	1.2E-06	0.20	0.27	16
2006	0.143	0.52	6.1E-01	-0.68	0.97	0.259**	3.37	4.6E-03	0.02	0.26	0.02	0.10	14	0.137	3.1E-01	0.12	0.09	16
2007	-0.165	-0.28	7.9E-01	-1.94	1.61	0.217	-0.64	5.3E-01	-0.34	0.22	0.01	0.28	14	-0.074	3.9E-01	0.10	0.12	16
2008	1.454**	3.41	4.3E-03	0.18	2.73	0.019*	-2.84	1.3E-02	-0.82	0.02	0.45	0.49	14	0.673**	2.1E-03	-0.16	0.29	16

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The sample consists of a maximum of 16 observations per yearly regression from 16 firms in the LSE consisting of the 5 banks and 11 banking related firms that adopted the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table U.2 (Continued)

PANEL B

Cross-Sectional Regression Analysis for the Control Group Change in Total Equity per Share ($E_{t-1,t}/S_{t-1,t}$) and Market Price Return ($M_{t-1,t}$)

Year	Regression													Correlation		Descriptive Statistics		*Obs.*
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	1.816**	7.75	2.8E-05	1.05	2.58	0.047	2.07	6.9E-02	-0.03	0.12	0.87	0.05	9	0.933**	1.4E-05	-0.08	0.06	11
1995	0.611**	3.61	5.7E-03	0.06	1.16	0.007	0.22	8.3E-01	-0.09	0.10	0.59	0.05	9	0.769**	2.8E-03	0.16	0.09	11
1996	1.133**	7.14	3.1E-05	0.63	1.64	-0.059*	-2.43	3.5E-02	-0.14	0.02	0.84	0.07	10	0.914**	1.6E-05	0.07	0.14	12
1997	1.052**	12.93	1.4E-07	0.79	1.31	-0.032	-2.08	6.4E-02	-0.08	0.02	0.94	0.04	10	0.971**	7.2E-08	0.13	0.15	12
1998	1.311**	12.94	1.4E-07	0.99	1.63	-0.055*	-3.14	1.1E-02	-0.11	5E-04	0.94	0.06	10	0.971**	7.2E-08	-0.04	0.18	12
1999	0.511**	20.29	1.9E-09	0.43	0.59	0.101**	4.82	7.0E-04	0.03	0.17	0.98	0.06	10	0.988**	9.3E-10	0.50	0.69	12
2000	1.171**	13.44	1.0E-07	0.89	1.45	-0.005	-0.30	7.7E-01	-0.06	0.05	0.95	0.06	10	0.973**	5.0E-08	0.02	0.21	12
2001	1.045**	6.81	4.7E-05	0.56	1.53	-0.011	-0.40	6.9E-01	-0.10	0.08	0.82	0.04	10	0.907**	2.3E-05	-0.16	0.07	12
2002	1.454**	8.31	8.4E-06	0.90	2.01	0.071	1.43	1.8E-01	-0.09	0.23	0.87	0.07	10	0.935**	4.2E-06	-0.26	0.11	12
2003	0.706**	9.67	2.2E-06	0.47	0.94	0.038	1.59	1.4E-01	-0.04	0.11	0.90	0.04	10	0.95**	1.1E-06	0.28	0.18	12
2004	1.007**	6.85	4.5E-05	0.54	1.47	-0.010	-0.43	6.7E-01	-0.08	0.06	0.82	0.04	10	0.908**	2.2E-05	0.13	0.07	12
2005	0.927**	16.92	1.1E-08	0.75	1.10	0.026	1.34	2.1E-01	-0.04	0.09	0.97	0.02	10	0.983**	5.5E-09	0.33	0.13	12
2006	1.192**	16.08	1.8E-08	0.96	1.43	-0.047**	-3.43	6.5E-03	-0.09	-4.E-03	0.96	0.04	10	0.981**	9.0E-09	0.12	0.15	12
2007	1.089**	19.06	3.4E-09	0.91	1.27	-0.036*	-2.93	1.5E-02	-0.08	3.E-03	0.97	0.04	10	0.987**	1.7E-09	0.05	0.22	12
2008	1.262**	10.57	9.5E-07	0.88	1.64	0.003	0.06	9.5E-01	-0.14	0.14	0.92	0.06	10	0.958**	4.8E-07	-0.34	0.15	12

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The Control group consists of a maximum of 12 observations per yearly regression from 12 banking related firms in the LSE that did not adopt the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table U.2 (Continued)

PANEL C

Cross-Sectional Regression Analysis for the Primary Sample Change in Total Equity per Share ($E_{t-1,t}/S_{t-1,t}$) and Market Price Return ($M_{t-1,t}$)

Year	Regression													Correlation		Descriptive Statistics		Obs.
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	-2.207	-1.35	3.1E-01	-18.47	14.06	0.197	0.92	4.5E-01	-1.93	2.32	0.48	0.20	2	-0.690	1.6E-01	0.11	0.07	4
1995	3.381*	5.46	3.2E-02	-2.77	9.53	-0.323	-2.59	1.2E-01	-1.56	0.92	0.94	0.08	2	0.968*	1.6E-02	0.19	0.07	4
1996	-0.961	-0.54	6.4E-01	-18.51	16.59	0.358	1.47	2.8E-01	-2.06	2.77	0.13	0.11	2	-0.359	3.2E-01	0.13	0.04	4
1997	0.149	0.04	9.7E-01	-41.46	41.75	0.212	0.52	6.5E-01	-3.81	4.23	6E-04	0.31	2	0.025	4.9E-01	0.09	0.04	4
1998	-0.038	-0.03	9.8E-01	-14.39	14.31	-0.034	-0.39	7.4E-01	-0.90	0.84	4E-04	0.16	2	-0.019	4.9E-01	0.02	0.06	4
1999	1.172*	9.55	1.1E-02	-0.05	2.39	0.205*	7.14	1.9E-02	-0.08	0.49	0.98	0.03	2	0.989**	5.4E-03	0.20	0.14	4
2000	0.465*	4.33	2.3E-02	-0.16	1.09	-0.080	-1.66	2.0E-01	-0.36	0.20	0.86	0.06	3	0.928*	1.1E-02	0.37	0.28	5
2001	0.162	0.12	9.1E-01	-7.87	8.19	-0.049	-0.31	7.8E-01	-0.98	0.89	5E-03	0.16	3	0.068	4.6E-01	0.10	0.06	5
2002	0.580	0.78	4.9E-01	-3.75	4.91	-0.227	-2.34	1.0E-01	-0.79	0.34	0.17	0.19	3	0.412	2.5E-01	-0.07	0.13	5
2003	-0.666	-1.19	3.2E-01	-3.94	2.61	0.225*	3.45	4.1E-02	-0.16	0.61	0.32	0.11	3	-0.566	1.6E-01	0.07	0.10	5
2004	1.111	0.99	4.0E-01	-5.47	7.70	0.010	0.16	8.9E-01	-0.36	0.38	0.24	0.06	3	0.494	2.0E-01	0.05	0.03	5
2005	0.634*	3.66	3.5E-02	-0.38	1.65	-0.004	-0.12	9.1E-01	-0.21	0.20	0.82	0.06	3	0.904*	1.8E-02	0.14	0.17	5
2006	0.791	2.00	1.4E-01	-1.52	3.10	0.032	0.63	5.7E-01	-0.26	0.33	0.57	0.05	3	0.756	6.9E-02	0.11	0.07	5
2007	-0.440	-0.19	8.6E-01	-14.29	13.41	-0.097	-0.23	8.3E-01	-2.53	2.34	0.01	0.28	3	-0.106	4.3E-01	0.17	0.06	5
2008	1.449	2.02	1.4E-01	-2.74	5.64	-0.893*	-3.63	3.6E-02	-2.33	0.54	0.58	0.51	3	0.759	6.8E-02	-0.12	0.36	5

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The sample consists of a maximum of 5 observations per yearly regression from the 5 banks in the LSE that adopted the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table U.2 (Continued)

PANEL D

Cross-Sectional Regression Analysis for the Secondary Sample Change in Total Equity per Share ($E_{t-1,t}/S_{t-1,t}$) and Market Price Return ($M_{t-1,t}$)

Year	Regression													Correlation		Descriptive Statistics		*Obs.*
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	-0.570	-1.13	2.9E-01	-2.26	1.12	0.075	1.04	3.3E-01	-0.17	0.32	0.14	0.23	8	-0.372	1.4E-01	0.01	0.15	10
1995	0.523**	6.00	3.2E-04	0.23	0.82	0.156**	4.35	2.4E-03	0.04	0.28	0.82	0.11	8	0.905**	1.6E-04	0.02	0.43	10
1996	0.522	1.12	2.9E-01	-1.00	2.04	-0.028	-0.41	6.9E-01	-0.25	0.19	0.12	0.10	9	0.349	1.5E-01	0.13	0.07	11
1997	-4.2E-04	-1E-03	9E-01	-1.09	1.09	0.267*	3.19	1.1E-02	-0.01	0.54	2E-07	0.16	9	-4.2E-04	5.0E-01	0.20	0.16	11
1998	0.403	0.71	5.0E-01	-1.45	2.26	0.063	0.73	4.8E-01	-0.22	0.34	0.05	0.25	9	0.230	2.5E-01	0.07	0.14	11
1999	0.744	1.22	2.5E-01	-1.24	2.72	0.073	0.51	6.2E-01	-0.39	0.54	0.14	0.23	9	0.377	1.3E-01	0.20	0.12	11
2000	0.249	0.29	7.8E-01	-2.56	3.06	0.188	1.19	2.6E-01	-0.33	0.70	0.01	0.43	9	0.096	3.9E-01	0.11	0.16	11
2001	-0.203	-0.77	4.6E-01	-1.06	0.66	-0.204*	-2.39	4.1E-02	-0.48	0.07	0.06	0.28	9	-0.248	2.3E-01	0.06	0.33	11
2002	0.180	0.30	7.7E-01	-1.75	2.11	-0.417**	-3.62	5.5E-03	-0.79	-0.04	0.01	0.38	9	0.100	3.8E-01	-0.02	0.20	11
2003	0.539	1.34	2.1E-01	-0.77	1.85	0.202*	2.75	2.2E-02	-0.04	0.44	0.17	0.20	9	0.408	1.1E-01	0.11	0.16	11
2004	-0.161	-0.91	3.9E-01	-0.73	0.41	0.105**	3.33	8.8E-03	2E-03	0.21	0.08	0.10	9	-0.290	1.9E-01	0.06	0.18	11
2005	0.685**	7.34	4.4E-05	0.38	0.99	0.105*	3.08	1.3E-02	-0.01	0.22	0.86	0.09	9	0.926**	2.2E-05	0.22	0.31	11
2006	0.020	0.06	9.5E-01	-1.08	1.12	0.167*	3.20	1.1E-02	-3E-03	0.34	4E-04	0.11	9	0.020	4.8E-01	0.12	0.10	11
2007	0.077	0.11	9.2E-01	-2.21	2.37	-0.040	-0.38	7.1E-01	-0.38	0.30	1E-03	0.30	9	0.036	4.6E-01	0.07	0.13	11
2008	1.649**	5.16	6.0E-04	0.61	2.69	-0.138	-1.34	2.1E-01	-0.47	0.20	0.75	0.28	9	0.864**	3.0E-04	-0.18	0.28	11

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The sample consists of a maximum of 11 observations per yearly regression from 11 banking related firms in the LSE that adopted the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Analysis

Table U.2 exhibits similar results to Table U.1.

The Table U.2 cross-sectional regression slopes show that the change in the total equity per share variable exhibits varying levels of statistically significant explanatory power to the market price return variable for the samples and the control group.

The Primary and Secondary sample shows statistical significance for years 1995, 2005 and 2008. The Control group shows extensive statistical significance for the observation time range 1994 to 2008.

U.3 Regressions for Change in Total Assets and Market Price Return

The regression analysis for the change in total assets and market price return is presented for the time range 1994 to 2008 in Table U.3. In the regressions, the market price return variable is tested as the dependent variable, and the change in the total assets variable is tested as the independent variable.

Table U.3 Cross-Sectional Regression Analysis for Change in Total Assets and Market Price Return

Cross-Sectional Regression

Table U.3 Panel A to Panel D show the results for the cross-sectional regressions that test the change in total assets and market price return by applying the regression specified in equation (O.27). In this table, Panel A presents results for the Primary and Secondary sample; Panel B presents results for the Control group; Panel C presents results for the Primary sample; and, Panel D presents results for the Secondary sample.

Cross-Sectional Regression Table Description

The Table U.3 columns represent the following:

Year is the *panel data* year represented by the number of days from 1st January to 31st December, and also represents the 31st December variable record date for each year.

The Regression column presents the coefficients and related statistics for the regression specified in equation (O.27), and follows the model:

$$dM_{i,t} = a + b\ dA_{i,t} + e_{i,t}$$

Where: $dM_{i,t}$ is the log Market Price return ($M_{t-1,t}$) for the i^{th} firm at time t, $dA_{i,t}$ is the log change in Total Assets ($A_{t-1,t}$) for the i^{th} firm at time t, and $e_{N,t}$ is the regression error term. The *Lower* and *Upper* are the corresponding coefficient levels predicted at a 99% confidence level.

The Correlation column presents the correlation statistics for the relationship between the dependent and independent variables. The Descriptive Statistics column presents for the independent variable, the sample mean calculated using equation (O.17) and the sample standard deviation, *SD*, using equation (O.18). The *Obs.* column presents the number of sample firms observed for the year.

Table U.3 (Continued)

PANEL A

Cross-Sectional Regression Analysis for the Primary and Secondary Sample Change in Total Assets ($A_{t-1,t}$) and Market Price Return ($M_{t-1,t}$)

Year	Regression													Correlation		Descriptive Statistics		*Obs.*
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	-0.023	-0.07	9.5E-01	-1.09	1.04	0.231	0.53	6.0E-01	-0.16	0.23	4E-04	0.24	12	-0.019	4.7E-01	0.02	0.19	14
1995	0.283	1.22	2.5E-01	-0.43	0.99	0.405	1.89	8.3E-02	-0.10	0.41	0.11	0.25	12	0.331	1.2E-01	0.21	0.30	14
1996	-0.223	-1.00	3.4E-01	-0.90	0.45	0.237*	2.78	1.6E-02	-0.01	0.24	0.07	0.13	13	-0.267	1.7E-01	0.10	0.16	15
1997	-0.063	-0.21	8.4E-01	-0.99	0.86	0.443**	4.42	6.9E-04	0.08	0.44	3E-03	0.18	13	-0.057	4.2E-01	0.12	0.16	15
1998	0.637	1.32	2.1E-01	-0.82	2.09	0.215	-0.03	9.8E-01	-0.22	0.22	0.12	0.22	13	0.343	1.1E-01	0.09	0.12	15
1999	0.877	1.21	2.5E-01	-1.28	3.04	0.449	1.94	7.4E-02	-0.10	0.45	0.10	0.24	14	0.307	1.2E-01	0.09	0.09	16
2000	-0.014	-0.06	9.5E-01	-0.67	0.65	0.465	1.86	8.4E-02	-0.11	0.47	3E-04	0.36	14	-0.016	4.8E-01	0.16	0.42	16
2001	-0.047	-0.20	8.5E-01	-0.77	0.67	0.041*	-2.36	3.3E-02	-0.35	0.04	3E-03	0.26	14	-0.052	4.2E-01	0.06	0.28	16
2002	-0.464	-0.97	3.5E-01	-1.88	0.95	-0.139**	-4.72	3.3E-04	-0.61	-0.14	0.06	0.32	14	-0.252	1.7E-01	-0.01	0.17	16
2003	0.324	1.52	1.5E-01	-0.31	0.96	0.35**	4.73	3.2E-04	0.08	0.35	0.14	0.18	14	0.376	7.5E-02	0.05	0.21	16
2004	-0.298	-1.61	1.3E-01	-0.85	0.25	0.195**	4.23	8.5E-04	0.03	0.20	0.16	0.08	14	-0.395	6.5E-02	0.10	0.11	16
2005	0.381**	3.41	4.0E-03	0.05	0.71	0.244	1.63	1.3E-01	-0.07	0.24	0.45	0.16	14	0.673**	2.0E-03	0.31	0.37	16
2006	-0.157	-1.24	2.4E-01	-0.53	0.22	0.254**	6.24	2.2E-05	0.09	0.25	0.10	0.09	14	-0.315	1.2E-01	0.11	0.19	16
2007	-0.316	-1.22	2.4E-01	-1.09	0.45	0.192	-0.44	6.7E-01	-0.26	0.19	0.10	0.27	14	-0.310	1.2E-01	0.14	0.27	16
2008	-0.617	-1.07	3.0E-01	-2.34	1.10	-0.112**	-3.67	2.5E-03	-1.08	-0.11	0.08	0.63	14	-0.275	1.5E-01	0.07	0.28	16

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The sample consists of a maximum of 16 observations per yearly regression from 16 firms in the LSE consisting of the 5 banks and 11 banking related firms that adopted the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table U.3 (Continued)

PANEL B

Cross-Sectional Regression Analysis for the Control Group Change in Total Assets ($A_{t-1,t}$) and Market Price Return ($M_{t-1,t}$)

Year	Regression													Correlation		Descriptive Statistics		*Obs.*
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	-0.203	-0.82	4.3E-01	-1.01	0.60	-0.091*	-2.41	3.9E-02	-0.21	0.03	0.07	0.12	9	-0.265	2.2E-01	0.01	0.16	11
1995	0.030	0.09	9.3E-01	-1.13	1.19	0.099	1.97	8.0E-02	-0.06	0.26	8E-04	0.07	9	0.028	4.7E-01	0.13	0.06	11
1996	0.360	1.78	1.1E-01	-0.28	1.00	-0.012	-0.24	8.2E-01	-0.17	0.15	0.24	0.16	10	0.490	5.3E-02	0.09	0.24	12
1997	0.72*	2.95	1.5E-02	-0.05	1.49	0.033	0.78	4.5E-01	-0.10	0.17	0.47	0.12	10	0.682**	7.3E-03	0.10	0.15	12
1998	1.062**	15.02	3.4E-08	0.84	1.29	-0.063**	-4.19	1.9E-03	-0.11	-0.02	0.96	0.05	10	0.979**	1.7E-08	-0.04	0.22	12
1999	1.118**	17.92	6.3E-09	0.92	1.32	0.036	1.38	2.0E-01	-0.05	0.12	0.97	0.07	10	0.985**	3.1E-09	0.29	0.32	12
2000	0.957**	8.90	4.6E-06	0.62	1.30	0.053	2.03	7.0E-02	-0.03	0.14	0.89	0.09	10	0.942**	2.3E-06	-0.04	0.25	12
2001	0.539*	2.65	2.5E-02	-0.11	1.19	-0.077	-1.74	1.1E-01	-0.22	0.06	0.41	0.07	10	0.642*	1.2E-02	-0.20	0.10	12
2002	1.482**	9.67	2.2E-06	1.00	1.97	0.100	2.22	5.1E-02	-0.04	0.24	0.90	0.06	10	0.95**	1.1E-06	-0.27	0.11	12
2003	1.006**	7.39	2.3E-05	0.57	1.44	0.049	1.62	1.4E-01	-0.05	0.14	0.85	0.05	10	0.919**	1.2E-05	0.19	0.12	12
2004	0.748**	4.63	9.4E-04	0.24	1.26	0.056*	2.76	2.0E-02	-0.01	0.12	0.68	0.05	10	0.826**	4.7E-04	0.09	0.09	12
2005	0.821**	5.44	2.8E-04	0.34	1.30	0.159**	4.34	1.5E-03	0.04	0.28	0.75	0.06	10	0.865**	1.4E-04	0.21	0.13	12
2006	0.778*	3.04	1.2E-02	-0.03	1.59	0.073	1.83	9.7E-02	-0.05	0.20	0.48	0.14	10	0.694**	6.2E-03	0.03	0.16	12
2007	0.863**	4.61	9.7E-04	0.27	1.46	0.072	1.67	1.3E-01	-0.07	0.21	0.68	0.14	10	0.825**	4.8E-04	-0.06	0.23	12
2008	0.702**	11.94	3.1E-07	0.52	0.89	-0.145**	-5.18	4.1E-04	-0.23	-0.06	0.93	0.05	10	0.967**	1.5E-07	-0.39	0.28	12

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The Control group consists of a maximum of 12 observations per yearly regression from 12 banking related firms in the LSE that did not adopt the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table U.3 (Continued)

PANEL C

Cross-Sectional Regression Analysis for the Primary Sample Change in Total Assets ($A_{t-1,t}$) and Market Price Return ($M_{t-1,t}$)

Year	Regression													Correlation		Descriptive Statistics		*Obs.*
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	1.701	2.29	1.5E-01	-5.66	9.07	-0.162	-1.86	2.0E-01	-1.03	0.70	0.72	0.15	2	0.851	7.4E-02	0.06	0.12	4
1995	0.165	0.22	8.5E-01	-7.41	7.74	0.289	1.29	3.3E-01	-1.93	2.51	0.02	0.31	2	0.151	4.3E-01	0.21	0.23	4
1996	-1.884	-2.37	1.4E-01	-9.76	5.99	0.463*	4.49	4.6E-02	-0.56	1.49	0.74	0.06	2	-0.859	7.0E-02	0.12	0.05	4
1997	0.284	0.44	7.0E-01	-6.07	6.64	0.214	1.43	2.9E-01	-1.26	1.69	0.09	0.29	2	0.300	3.5E-01	0.04	0.26	4
1998	1.212	1.06	4.0E-01	-10.11	12.54	-0.051	-0.77	5.2E-01	-0.71	0.61	0.36	0.13	2	0.601	2.0E-01	0.01	0.07	4
1999	3.123	1.33	2.8E-01	-10.62	16.87	-0.056	-0.18	8.7E-01	-1.90	1.79	0.37	0.26	3	0.608	1.4E-01	0.12	0.05	5
2000	0.213	1.79	1.7E-01	-0.48	0.91	3.8E-04	0.01	9.96E-01	-0.42	0.42	0.52	0.11	3	0.718	8.6E-02	0.44	0.47	5
2001	3.130	2.27	1.1E-01	-4.91	11.17	-0.329	-2.39	9.6E-02	-1.13	0.47	0.63	0.10	3	0.795	5.4E-02	0.09	0.03	5
2002	-0.956	-0.79	4.9E-01	-8.00	6.08	-0.222	-2.21	1.1E-01	-0.81	0.36	0.17	0.18	3	-0.417	2.4E-01	0.05	0.08	5
2003	0.299	0.44	6.9E-01	-3.67	4.27	0.154	2.04	1.3E-01	-0.29	0.60	0.06	0.13	3	0.246	3.5E-01	0.07	0.10	5
2004	0.200	0.37	7.4E-01	-2.97	3.37	0.036	0.41	7.1E-01	-0.47	0.54	0.04	0.07	3	0.208	3.7E-01	0.15	0.06	5
2005	0.313	1.06	3.7E-01	-1.41	2.03	-0.025	-0.22	8.4E-01	-0.70	0.65	0.27	0.11	3	0.523	1.8E-01	0.35	0.20	5
2006	0.440	0.18	8.7E-01	-13.79	14.67	0.080	0.35	7.5E-01	-1.24	1.40	0.01	0.08	3	0.104	4.3E-01	0.09	0.02	5
2007	-0.404	-0.92	4.3E-01	-2.99	2.18	-0.055	-0.33	7.7E-01	-1.05	0.94	0.22	0.25	3	-0.467	2.1E-01	0.29	0.29	5
2008	2.401	1.32	2.8E-01	-8.22	13.02	-2.010	-2.63	7.8E-02	-6.47	2.45	0.37	0.63	3	0.606	1.4E-01	0.39	0.17	5

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels. The sample consists of a maximum of 5 observations per yearly regression from the 5 banks in the LSE that adopted the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table U.3 (Continued)

PANEL D

Cross-Sectional Regression Analysis for the Secondary Sample Change in Total Assets ($A_{t-1,t}$) and Market Price Return ($M_{t-1,t}$)

Year	Regression													Correlation		Descriptive Statistics		*Obs.*
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	-0.135	-0.36	7.3E-01	-1.39	1.12	0.070	0.91	3.9E-01	-0.19	0.33	0.02	0.24	8	-0.127	3.6E-01	2.8E-03	0.22	10
1995	0.299	1.21	2.6E-01	-0.53	1.13	0.108	1.17	2.8E-01	-0.20	0.42	0.16	0.24	8	0.393	1.3E-01	0.20	0.33	10
1996	-0.242	-1.43	1.9E-01	-0.79	0.31	0.064	1.89	9.1E-02	-0.05	0.17	0.19	0.10	9	-0.430	9.4E-02	0.10	0.18	11
1997	-0.826	-2.07	6.9E-02	-2.13	0.47	0.388**	5.44	4.1E-04	0.16	0.62	0.32	0.14	9	-0.567*	3.4E-02	0.15	0.11	11
1998	0.467	0.73	4.8E-01	-1.61	2.54	0.034	0.31	7.6E-01	-0.32	0.39	0.06	0.25	9	0.237	2.4E-01	0.12	0.12	11
1999	0.482	0.60	5.6E-01	-2.13	3.09	0.187	1.90	9.0E-02	-0.13	0.51	0.04	0.25	9	0.196	2.8E-01	0.08	0.10	11
2000	-0.048	-0.12	9.1E-01	-1.35	1.25	0.216	1.65	1.3E-01	-0.21	0.64	2E-03	0.43	9	-0.040	4.5E-01	0.03	0.34	11
2001	-0.088	-0.33	7.5E-01	-0.96	0.79	-0.213*	-2.45	3.7E-02	-0.50	0.07	0.01	0.29	9	-0.108	3.8E-01	0.05	0.34	11
2002	-0.567	-0.99	3.5E-01	-2.43	1.29	-0.439**	-3.96	3.3E-03	-0.80	-0.08	0.10	0.36	9	-0.314	1.7E-01	-0.03	0.20	11
2003	0.336	1.36	2.1E-01	-0.47	1.14	0.243**	3.99	3.2E-03	0.05	0.44	0.17	0.20	9	0.413	1.0E-01	0.05	0.25	11
2004	-0.336	-1.45	1.8E-01	-1.09	0.42	0.119**	3.68	5.1E-03	0.01	0.22	0.19	0.09	9	-0.435	9.1E-02	0.07	0.13	11
2005	0.409**	3.90	4.0E-03	0.07	0.75	0.14*	2.62	2.8E-02	-0.03	0.31	0.63	0.15	9	0.793**	2.0E-03	0.29	0.44	11
2006	-0.168	-1.23	2.5E-01	-0.61	0.28	0.19**	5.42	4.2E-04	0.08	0.31	0.14	0.10	9	-0.379	1.3E-01	0.12	0.24	11
2007	-0.177	-0.46	6.6E-01	-1.43	1.08	-0.022	-0.23	8.2E-01	-0.32	0.28	0.02	0.29	9	-0.151	3.3E-01	0.07	0.24	11
2008	0.010	0.01	9.9E-01	-3.26	3.28	-0.438*	-2.33	4.4E-02	-1.05	0.17	1E-05	0.56	9	0.003	5.0E-01	-0.08	0.18	11

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The sample consists of a maximum of 11 observations per yearly regression from 11 banking related firms in the LSE that adopted the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Analysis

The Table U.3 cross-sectional regression slopes show that the change in the total assets variable exhibits varying levels of statistically significant explanatory power to the market price return variable for the samples and the control group.

The Primary and Secondary sample only shows statistical significance for the year 2005. The Control group shows extensive statistical significance other than for the years: 1994, 1995 and 1996.

U.4 Regressions for Change in Total Liabilities and Market Price Return

The regression analysis for the change in total liabilities and market price return is presented for the time range 1994 to 2008 in Table U.4. In the regressions, the market price return variable is tested as the dependent variable, and the change in the total liabilities variable is tested as the independent variable.

Table U.4 Cross-Sectional Regression Analysis for Change in Total Liabilities and Market Price Return

Cross-Sectional Regression

Table U.4 Panel A to Panel D show the results for the cross-sectional regressions that test the change in total liabilities and market price return by applying the regression specified in equation (O.27). In this table, Panel A presents results for the Primary and Secondary sample; Panel B presents results for the Control group; Panel C presents results for the Primary sample; and, Panel D presents results for the Secondary sample.

Cross-Sectional Regression Table Description

The Table U.4 columns represent the following:

Year is the *panel data* year represented by the number of days from 1st January to 31st December, and also represents the 31st December variable record date for each year.

The Regression column presents the coefficients and related statistics for the regression specified in equation (O.27), and follows the model:

$$dM_{i,t} = a + b\ dL_{i,t} + e_{i,t}$$

Where: $dM_{i,t}$ is the log Market Price return $(M_{t-1,t})$ for the i^{th} firm at time t, $dL_{i,t}$ is the log change in Total Liabilities $(E_{t-1,t})$ for the i^{th} firm at time t, and $e_{N,t}$ is the regression error term. The *Lower* and *Upper* are the corresponding coefficient levels predicted at a 99% confidence level.

The Correlation column presents the correlation statistics for the relationship between the dependent and independent variables. The Descriptive Statistics column presents for the independent variable, the sample mean calculated using equation (O.17) and the sample standard deviation, *SD*, using equation (O.18). The *Obs.* column presents the number of sample firms observed for the year.

Table U.4 (Continued)

PANEL A

Cross-Sectional Regression Analysis for the Primary and Secondary Sample Change in Total Liabilities ($L_{t-1,t}$) and Market Price Return ($M_{t-1,t}$)

Year	Regression													Correlation		Descriptive Statistics		*Obs.*
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	-0.183	-0.81	4.3E-01	-0.87	0.51	0.255	0.79	4.5E-01	-0.15	0.26	0.05	0.23	12	-0.228	2.2E-01	0.10	0.29	14
1995	0.128	0.90	3.9E-01	-0.31	0.56	0.414*	2.48	2.9E-02	-0.04	0.41	0.06	0.25	12	0.251	1.9E-01	0.22	0.50	14
1996	-0.156	-0.90	3.9E-01	-0.68	0.37	0.21*	2.82	1.5E-02	-0.01	0.21	0.06	0.13	13	-0.241	1.9E-01	0.07	0.20	15
1997	0.142	0.47	6.5E-01	-0.77	1.05	0.399**	4.90	2.9E-04	0.10	0.40	0.02	0.18	13	0.129	3.2E-01	0.06	0.16	15
1998	0.237	0.73	4.8E-01	-0.74	1.21	0.234	0.55	5.9E-01	-0.16	0.23	0.04	0.23	13	0.199	2.4E-01	0.09	0.19	15
1999	0.143	0.67	5.1E-01	-0.49	0.78	0.448**	4.10	1.1E-03	0.07	0.45	0.03	0.25	14	0.176	2.6E-01	-4E-03	0.31	16
2000	-0.066	-0.35	7.4E-01	-0.64	0.51	0.480	1.95	7.1E-02	-0.10	0.48	0.01	0.36	14	-0.092	3.7E-01	0.20	0.48	16
2001	-0.170	-0.59	5.6E-01	-1.02	0.68	0.082	-1.86	8.4E-02	-0.36	0.08	0.02	0.26	14	-0.156	2.8E-01	0.13	0.23	16
2002	-0.741	-1.59	1.3E-01	-2.13	0.65	-0.11**	-4.39	6.2E-04	-0.57	-0.11	0.15	0.30	14	-0.391	6.7E-02	0.04	0.17	16
2003	0.189	1.58	1.4E-01	-0.17	0.54	0.353**	5.00	2.0E-04	0.09	0.35	0.15	0.17	14	0.390	6.8E-02	0.06	0.38	16
2004	-0.054	-0.40	6.9E-01	-0.46	0.35	0.162**	3.71	2.3E-03	0.02	0.16	0.01	0.09	14	-0.107	3.5E-01	0.07	0.17	16
2005	0.321**	3.12	8.0E-03	0.01	0.63	0.255	1.61	1.3E-01	-0.08	0.26	0.41	0.17	14	0.64**	4.0E-03	0.36	0.42	16
2006	-0.104	-1.31	2.1E-01	-0.34	0.13	0.231**	6.71	1.0E-05	0.09	0.23	0.11	0.09	14	-0.330	1.1E-01	0.05	0.30	16
2007	-0.189	-0.93	3.7E-01	-0.79	0.42	0.192	-0.52	6.1E-01	-0.27	0.19	0.06	0.27	14	-0.241	1.8E-01	0.19	0.35	16
2008	-0.528	-0.80	4.4E-01	-2.50	1.45	-0.049**	-3.25	5.8E-03	-1.11	-0.05	0.04	0.64	14	-0.208	2.2E-01	0.11	0.25	16

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The sample consists of a maximum of 16 observations per yearly regression from 16 firms in the LSE consisting of the 5 banks and 11 banking related firms that adopted the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table U.4 (Continued)

PANEL B

Cross-Sectional Regression Analysis for the Control Group Change in Total Liabilities ($L_{t-1,t}$) and Market Price Return ($M_{t-1,t}$)

Year	Regression													Correlation		Descriptive Statistics		*Obs.*
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	0.089	1.48	1.7E-01	-0.11	0.28	-0.116*	-3.02	1.5E-02	-0.24	0.01	0.20	0.12	9	0.442	8.7E-02	0.27	0.61	11
1995	-0.028	-1.94	8.4E-02	-0.08	0.02	0.112**	5.88	2.4E-04	0.05	0.17	0.30	0.06	9	-0.544*	4.2E-02	0.31	1.34	11
1996	1.5E-04	6.9E-04	9E-01	-0.69	0.69	0.020	0.38	7.1E-01	-0.15	0.19	5E-08	0.18	10	2.2E-04	5.0E-01	0.03	0.25	12
1997	-0.017	-0.20	8.5E-01	-0.30	0.26	0.103	2.16	5.6E-02	-0.05	0.25	4E-03	0.16	10	-0.062	4.2E-01	0.03	0.56	12
1998	-0.385	-2.23	5.0E-02	-0.93	0.16	-0.023	-0.34	7.4E-01	-0.24	0.20	0.33	0.20	10	-0.576*	2.5E-02	0.21	0.35	12
1999	0.714*	2.58	2.7E-02	-0.16	1.59	0.181	1.68	1.2E-01	-0.16	0.52	0.40	0.29	10	0.632*	1.4E-02	0.24	0.32	12
2000	0.332*	2.53	3.0E-02	-0.08	0.75	-0.015	-0.24	8.1E-01	-0.21	0.18	0.39	0.21	10	0.624*	1.5E-02	0.09	0.48	12
2001	0.002	0.08	9.4E-01	-0.10	0.10	-0.182**	-7.20	2.9E-05	-0.26	-0.10	6E-04	0.09	10	0.024	4.7E-01	-0.20	0.84	12
2002	0.285	0.65	5.3E-01	-1.11	1.67	-0.288**	-4.78	7.4E-04	-0.48	-0.10	0.04	0.18	10	0.201	2.7E-01	-0.07	0.13	12
2003	0.257	1.10	3.0E-01	-0.48	1.00	0.243**	6.42	7.6E-05	0.12	0.36	0.11	0.13	10	0.328	1.5E-01	-0.02	0.17	12
2004	0.112	1.27	2.3E-01	-0.17	0.39	0.121**	5.17	4.2E-04	0.05	0.19	0.14	0.08	10	0.372	1.2E-01	0.03	0.27	12
2005	0.136	1.32	2.2E-01	-0.19	0.46	0.328**	9.72	2.1E-06	0.22	0.44	0.15	0.12	10	0.385	1.1E-01	0.02	0.34	12
2006	0.043	0.43	6.8E-01	-0.28	0.36	0.090	1.64	1.3E-01	-0.08	0.26	0.02	0.19	10	0.134	3.4E-01	0.11	0.56	12
2007	-0.216*	-2.67	2.4E-02	-0.47	0.04	-0.030	-0.51	6.2E-01	-0.22	0.16	0.42	0.19	10	-0.645*	1.2E-02	-0.23	0.72	12
2008	0.477**	3.27	9.0E-03	0.01	0.94	-0.381**	-8.58	6.4E-06	-0.52	-0.24	0.52	0.15	10	0.718**	4.0E-03	-0.08	0.31	12

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The Control group consists of a maximum of 12 observations per yearly regression from 12 banking related firms in the LSE that did not adopt the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table U.4 (Continued)

PANEL C

Cross-Sectional Regression Analysis for the Primary Sample Change in Total Liabilities ($L_{t-1,t}$) and Market Price Return ($M_{t-1,t}$)

Year	Regression													Correlation		Descriptive Statistics		*Obs.*
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	1.612	2.41	1.4E-01	-5.03	8.26	-0.154	-1.87	2.0E-01	-0.97	0.66	0.74	0.14	2	0.862	6.9E-02	0.06	0.12	4
1995	0.156	0.20	8.6E-01	-7.48	7.79	0.292	1.31	3.2E-01	-1.92	2.50	0.02	0.31	2	0.142	4.3E-01	0.21	0.23	4
1996	-1.869	-2.36	1.4E-01	-9.74	6.00	0.457*	4.50	4.6E-02	-0.55	1.47	0.74	0.06	2	-0.858	7.1E-02	0.12	0.05	4
1997	0.294	0.46	6.9E-01	-6.10	6.69	0.212	1.42	2.9E-01	-1.27	1.69	0.09	0.29	2	0.307	3.5E-01	0.05	0.26	4
1998	1.088	0.99	4.3E-01	-9.79	11.96	-0.049	-0.73	5.4E-01	-0.72	0.62	0.33	0.13	2	0.575	2.1E-01	0.01	0.07	4
1999	2.719	1.15	3.3E-01	-11.08	16.51	0.005	0.02	9.9E-01	-1.81	1.82	0.31	0.27	3	0.554	1.7E-01	0.12	0.06	5
2000	0.214	1.74	1.8E-01	-0.51	0.93	0.002	0.03	9.8E-01	-0.43	0.43	0.50	0.11	3	0.708	9.0E-02	0.43	0.46	5
2001	3.100	2.35	1.0E-01	-4.61	10.81	-0.319	-2.47	9.0E-02	-1.07	0.44	0.65	0.09	3	0.805	5.0E-02	0.09	0.04	5
2002	-1.035	-0.90	4.4E-01	-7.77	5.69	-0.209	-2.04	1.3E-01	-0.81	0.39	0.21	0.18	3	-0.461	2.2E-01	0.05	0.08	5
2003	0.308	0.46	6.8E-01	-3.64	4.26	0.155	2.08	1.3E-01	-0.28	0.59	0.07	0.13	3	0.254	3.4E-01	0.07	0.10	5
2004	0.180	0.34	7.6E-01	-2.93	3.29	0.038	0.43	7.0E-01	-0.47	0.55	0.04	0.07	3	0.191	3.8E-01	0.15	0.06	5
2005	0.309	1.05	3.7E-01	-1.41	2.03	-0.027	-0.23	8.4E-01	-0.72	0.66	0.27	0.12	3	0.519	1.9E-01	0.36	0.20	5
2006	-0.191	-0.08	9.4E-01	-14.10	13.72	0.137	0.63	5.7E-01	-1.13	1.41	2E-03	0.08	3	-0.046	4.7E-01	0.09	0.02	5
2007	-0.401	-0.91	4.3E-01	-2.97	2.16	-0.055	-0.33	7.7E-01	-1.05	0.93	0.22	0.25	3	-0.466	2.1E-01	0.29	0.29	5
2008	2.484	1.37	2.6E-01	-8.07	13.04	-2.076	-2.66	7.7E-02	-6.64	2.49	0.39	0.62	3	0.622	1.3E-01	0.40	0.17	5

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels. The sample consists of a maximum of 5 observations per yearly regression from the 5 banks in the LSE that adopted the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table U.4 (Continued)

PANEL D

Cross-Sectional Regression Analysis for the Secondary Sample Change in Total Liabilities ($L_{t-1,t}$) and Market Price Return ($M_{t-1,t}$)

Year	Regression													Correlation		Descriptive Statistics		*Obs.*
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	-0.285	-1.29	2.4E-01	-1.03	0.46	0.103	1.37	2.1E-01	-0.15	0.36	0.17	0.22	8	-0.414	1.2E-01	0.12	0.34	10
1995	0.128	0.88	4.0E-01	-0.36	0.62	0.141	1.63	1.4E-01	-0.15	0.43	0.09	0.25	8	0.298	2.0E-01	0.22	0.58	10
1996	-0.218	-1.72	1.2E-01	-0.63	0.19	0.051	1.75	1.1E-01	-0.04	0.15	0.25	0.09	9	-0.497	6.0E-02	0.05	0.23	11
1997	-0.071	-0.17	8.7E-01	-1.41	1.27	0.272**	4.79	9.9E-04	0.09	0.46	3E-03	0.16	9	-0.057	4.3E-01	0.07	0.13	11
1998	0.134	0.35	7.4E-01	-1.12	1.39	0.076	0.84	4.2E-01	-0.22	0.37	0.01	0.25	9	0.115	3.7E-01	0.12	0.21	11
1999	0.077	0.35	7.4E-01	-0.65	0.80	0.23*	2.99	1.5E-02	-0.02	0.48	0.01	0.25	9	0.114	3.7E-01	-0.06	0.36	11
2000	-0.125	-0.44	6.7E-01	-1.06	0.81	0.226	1.72	1.2E-01	-0.20	0.65	0.02	0.43	9	-0.144	3.4E-01	0.10	0.47	11
2001	-0.149	-0.46	6.5E-01	-1.19	0.90	-0.195	-2.00	7.7E-02	-0.51	0.12	0.02	0.28	9	-0.153	3.3E-01	0.15	0.28	11
2002	-0.754	-1.37	2.1E-01	-2.55	1.04	-0.395**	-3.71	4.8E-03	-0.74	-0.05	0.17	0.35	9	-0.415	1.0E-01	0.03	0.20	11
2003	0.188	1.39	2.0E-01	-0.25	0.63	0.248**	4.13	2.5E-03	0.05	0.44	0.18	0.20	9	0.419	1.0E-01	0.06	0.46	11
2004	-0.038	-0.23	8.3E-01	-0.59	0.51	0.096*	3.07	1.3E-02	-0.01	0.20	0.01	0.10	9	-0.075	4.1E-01	0.03	0.19	11
2005	0.324*	3.08	1.3E-02	-0.02	0.67	0.143*	2.29	4.8E-02	-0.06	0.35	0.51	0.17	9	0.716**	7.0E-03	0.35	0.50	11
2006	-0.098	-1.11	3.0E-01	-0.39	0.19	0.173**	5.52	3.7E-04	0.07	0.28	0.12	0.10	9	-0.347	1.5E-01	0.04	0.37	11
2007	-0.101	-0.40	7.0E-01	-0.91	0.71	-0.019	-0.20	8.5E-01	-0.33	0.29	0.02	0.29	9	-0.133	3.5E-01	0.15	0.37	11
2008	0.669	0.55	6.0E-01	-3.30	4.63	-0.425*	-2.54	3.2E-02	-0.97	0.12	0.03	0.55	9	0.180	3.0E-01	-0.02	0.14	11

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The sample consists of a maximum of 11 observations per yearly regression from 11 banking related firms in the LSE that adopted the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Analysis

The Table U.4 cross-sectional regression slopes show that the change in the total liabilities variable exhibits varying levels of statistically significant explanatory power to the market price return variable for the samples and the control group.

The Primary and Secondary sample only shows statistical significance for the year 2005. The Control group shows statistical significance for the years: 1999, 2000, 2007 and 2008.

U.5 Regressions for Change in Net Income and Market Price Return

The regression analysis for the change in net income and market price return is presented for the time range 1994 to 2008 in Table U.5. In the regressions, the market price return variable is tested as the dependent variable, and the change in the net income variable is tested as the independent variable.

Table U.5 Cross-Sectional Regression Analysis for Change in Net Income and Market Price Return

Cross-Sectional Regression

Table U.5 Panel A to Panel D show the results for the cross-sectional regressions that test the change in net income and market price return by applying the regression specified in equation (O.27). In this table, Panel A presents results for the Primary and Secondary sample; Panel B presents results for the Control group; Panel C presents results for the Primary sample; and, Panel D presents results for the Secondary sample.

Cross-Sectional Regression Table Description

The Table U.5 columns represent the following:

Year is the *panel data* year represented by the number of days from 1st January to 31st December, and also represents the 31st December variable record date for each year.

The Regression column presents the coefficients and related statistics for the regression specified in equation (O.27), and follows the model:

$$dM_{i,t} = a + b\ dI_{i,t} + e_{i,t}$$

Where: $dM_{i,t}$ is the log Market Price return ($M_{t-1,t}$) for the i^{th} firm at time t, $dI_{i,t}$ is the change in Net Income ($E_{t-1,t}$) for the i^{th} firm at time t, and $e_{N,t}$ is the regression error term. The *Lower* and *Upper* are the corresponding coefficient levels predicted at a 99% confidence level.

The Correlation column presents the correlation statistics for the relationship between the dependent and independent variables. The Descriptive Statistics column presents for the independent variable, the sample mean calculated using equation (O.17) and the sample standard deviation, *SD*, using equation (O.18). The *Obs.* column presents the number of sample firms observed for the year.

Table U.5 (Continued)

PANEL A

Cross-Sectional Regression Analysis for the Primary and Secondary Sample Change in Net Income ($I_{t-1,t}$) and Market Price Return ($M_{t-1,t}$)

Year	Regression													Correlation		Descriptive Statistics		*Obs.*
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	0.059	0.86	4.1E-01	-0.15	0.27	0.218	0.15	8.8E-01	-0.20	0.22	0.06	0.23	12	0.240	2.0E-01	0.39	0.93	14
1995	-0.154*	-2.26	4.3E-02	-0.36	0.05	0.5**	4.26	1.1E-03	0.08	0.50	0.30	0.22	12	-0.547*	2.1E-02	0.51	0.90	14
1996	-0.054	-0.47	6.5E-01	-0.40	0.29	0.266	2.10	5.6E-02	-0.05	0.27	0.02	0.13	13	-0.129	3.2E-01	0.34	0.31	15
1997	1.3E-04	8.3E-04	9E-01	-0.48	0.48	0.4**	5.38	1.3E-04	0.11	0.40	5E-08	0.18	13	2.3E-04	5.0E-01	-0.03	0.30	15
1998	-0.008	-0.10	9.2E-01	-0.27	0.25	0.264	0.91	3.8E-01	-0.14	0.26	7E-04	0.23	13	-0.027	4.6E-01	0.37	0.71	15
1999	-0.008	-0.07	9.4E-01	-0.32	0.31	0.463**	3.83	1.8E-03	0.06	0.46	4E-04	0.26	14	-0.020	4.7E-01	0.21	0.63	16
2000	0.125	1.15	2.7E-01	-0.20	0.45	0.416	1.77	9.9E-02	-0.11	0.42	0.09	0.34	14	0.295	1.3E-01	0.17	0.81	16
2001	0.206	1.25	2.3E-01	-0.29	0.70	0.107	-1.51	1.5E-01	-0.33	0.11	0.10	0.25	14	0.316	1.2E-01	-0.24	0.38	16
2002	0.073	0.87	4.0E-01	-0.18	0.32	-0.121**	-4.48	5.2E-04	-0.60	-0.12	0.05	0.32	14	0.226	2.0E-01	-0.13	0.98	16
2003	0.007	1.76	1.0E-01	-4.6E-03	0.02	0.383**	5.68	5.6E-05	0.12	0.38	0.18	0.17	14	0.426	5.0E-02	-2.76	11.6	16
2004	-0.010	-0.50	6.3E-01	-0.07	0.05	0.157**	3.88	1.7E-03	0.02	0.16	0.02	0.09	14	-0.131	3.1E-01	0.26	1.09	16
2005	0.002	0.62	5.4E-01	-0.01	0.01	0.36**	3.52	3.4E-03	0.03	0.36	0.03	0.22	14	0.165	2.7E-01	4.81	20.6	16
2006	0.017*	2.89	1.2E-02	-5.1E-04	0.03	0.197**	6.54	1.3E-05	0.07	0.20	0.37	0.08	14	0.611**	5.9E-03	1.13	3.53	16
2007	0.036	0.99	3.4E-01	-0.07	0.15	0.114	-1.39	1.9E-01	-0.31	0.11	0.07	0.27	14	0.255	1.7E-01	0.61	1.90	16
2008	0.177	2.13	5.1E-02	-0.07	0.42	0.003*	-2.96	1.0E-02	-0.96	2.6E-03	0.25	0.57	14	0.495*	2.6E-02	-0.90	1.78	16

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The sample consists of a maximum of 16 observations per yearly regression from 16 firms in the LSE consisting of the 5 banks and 11 banking related firms that adopted the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table U.5 (Continued)

PANEL B

Cross-Sectional Regression Analysis for the Control Group Change in Net Income ($I_{t-1,t}$) and Market Price Return ($M_{t-1,t}$)

Year	Regression													Correlation		Descriptive Statistics		*Obs.*
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	0.180	1.84	9.8E-02	-0.14	0.50	-0.087*	-2.62	2.8E-02	-0.20	0.02	0.27	0.11	9	0.523*	4.9E-02	-0.03	0.36	11
1995	0.158	1.26	2.4E-01	-0.25	0.57	0.09**	3.97	3.2E-03	0.02	0.16	0.15	0.07	9	0.388	1.2E-01	0.08	0.17	11
1996	0.38**	3.64	4.5E-03	0.05	0.71	-0.016	-0.43	6.8E-01	-0.13	0.10	0.57	0.12	10	0.755**	2.3E-03	0.09	0.35	12
1997	-0.873*	-2.80	1.9E-02	-1.86	0.12	0.157**	3.86	3.2E-03	0.03	0.29	0.44	0.12	10	-0.662**	9.5E-03	0.06	0.12	12
1998	-0.287*	-2.33	4.2E-02	-0.68	0.10	-0.035	-0.53	6.1E-01	-0.24	0.17	0.35	0.20	10	-0.592*	2.1E-02	0.25	0.49	12
1999	-0.128**	-7.73	1.6E-05	-0.18	-0.08	0.239**	5.47	2.7E-04	0.10	0.38	0.86	0.14	10	-0.926**	7.9E-06	-0.90	2.60	12
2000	-0.195	-0.71	4.9E-01	-1.06	0.67	0.028	0.36	7.3E-01	-0.22	0.27	0.05	0.26	10	-0.220	2.5E-01	0.06	0.29	12
2001	-0.056	-1.68	1.2E-01	-0.16	0.05	-0.183**	-8.40	7.6E-06	-0.25	-0.11	0.22	0.08	10	-0.469	6.2E-02	1.4E-03	0.68	12
2002	-0.145	-0.75	4.7E-01	-0.76	0.47	-0.359**	-4.11	2.1E-03	-0.64	-0.08	0.05	0.18	10	-0.231	2.4E-01	-0.36	0.28	12
2003	0.486	1.11	2.9E-01	-0.90	1.87	0.188**	3.20	9.5E-03	1.9E-03	0.37	0.11	0.13	10	0.331	1.5E-01	0.10	0.09	12
2004	-0.034	-0.44	6.7E-01	-0.28	0.21	0.129**	4.71	8.3E-04	0.04	0.22	0.02	0.09	10	-0.138	3.3E-01	0.15	0.34	12
2005	-0.145	-0.66	5.2E-01	-0.84	0.55	0.346**	8.21	9.4E-06	0.21	0.48	0.04	0.12	10	-0.204	2.6E-01	0.10	0.17	12
2006	-0.332	-1.76	1.1E-01	-0.93	0.26	0.154*	2.64	2.5E-02	-0.03	0.34	0.24	0.16	10	-0.487	5.4E-02	0.18	0.26	12
2007	-0.457	-2.22	5.1E-02	-1.11	0.20	0.038	0.62	5.5E-01	-0.15	0.23	0.33	0.21	10	-0.574*	2.5E-02	0.04	0.30	12
2008	0.008	0.43	6.8E-01	-0.05	0.06	-0.43**	-6.69	5.4E-05	-0.63	-0.23	0.02	0.21	10	0.135	3.4E-01	1.16	3.59	12

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The Control group consists of a maximum of 12 observations per yearly regression from 12 banking related firms in the LSE that did not adopt the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table U.5 (Continued)

PANEL C

Cross-Sectional Regression Analysis for the Primary Sample Change in Net Income ($I_{t-1,t}$) and Market Price Return ($M_{t-1,t}$)

Year	Regression													Correlation		Descriptive Statistics		*Obs.*
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	0.093	0.77	5.2E-01	-1.10	1.28	-0.165	-0.88	4.7E-01	-2.03	1.69	0.23	0.25	2	0.480	2.6E-01	1.17	1.19	4
1995	0.292	0.66	5.8E-01	-4.08	4.67	0.215	0.99	4.3E-01	-1.95	2.37	0.18	0.28	2	0.424	2.9E-01	0.37	0.37	4
1996	-0.192	-0.11	9.2E-01	-17.85	17.46	0.278	0.62	6.0E-01	-4.20	4.75	0.01	0.12	2	-0.076	4.6E-01	0.25	0.04	4
1997	-0.506	-0.59	6.2E-01	-9.06	8.05	0.150	0.78	5.2E-01	-1.75	2.05	0.15	0.28	2	-0.384	3.1E-01	-0.15	0.19	4
1998	-0.257	-1.05	4.0E-01	-2.68	2.17	-0.026	-0.40	7.3E-01	-0.67	0.62	0.36	0.13	2	-0.597	2.0E-01	0.03	0.31	4
1999	0.122	0.18	8.7E-01	-3.82	4.06	0.316	1.80	1.7E-01	-0.71	1.34	0.01	0.32	3	0.104	4.3E-01	0.15	0.24	5
2000	0.142	0.77	5.0E-01	-0.94	1.23	0.016	0.13	9.0E-01	-0.69	0.72	0.16	0.15	3	0.404	2.5E-01	0.55	0.40	5
2001	0.440	1.77	1.8E-01	-1.02	1.90	-0.003	-0.07	9.5E-01	-0.31	0.30	0.51	0.11	3	0.714	8.8E-02	-0.07	0.22	5
2002	1.116	1.42	2.5E-01	-3.49	5.72	0.403	0.84	4.6E-01	-2.39	3.20	0.40	0.16	3	0.633	1.3E-01	-0.60	0.10	5
2003	-0.089	-1.54	2.2E-01	-0.43	0.25	0.231*	3.99	2.8E-02	-0.11	0.57	0.44	0.10	3	-0.664	1.1E-01	0.62	0.88	5
2004	1.3E-04	4.9E-03	9E-01	-0.16	0.16	0.066	1.92	1.5E-01	-0.13	0.27	8E-06	0.07	3	0.003	5.0E-01	0.57	1.25	5
2005	0.217	1.38	2.6E-01	-0.70	1.14	0.012	0.17	8.7E-01	-0.40	0.43	0.39	0.11	3	0.623	1.3E-01	0.34	0.34	5
2006	0.254	3.07	5.4E-02	-0.23	0.74	0.095*	4.80	1.7E-02	-0.02	0.21	0.76	0.04	3	0.871*	2.7E-02	0.10	0.24	5
2007	0.807	1.18	3.2E-01	-3.17	4.79	-0.242	-1.99	1.4E-01	-0.95	0.47	0.32	0.24	3	0.564	1.6E-01	0.09	0.17	5
2008	0.150	1.74	1.8E-01	-0.35	0.65	-0.823	-2.87	6.4E-02	-2.50	0.85	0.50	0.56	3	0.709	9.0E-02	-1.65	3.22	5

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The sample consists of a maximum of 5 observations per yearly regression from the 5 banks in the LSE that adopted the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table U.5 (Continued)

PANEL D

Cross-Sectional Regression Analysis for the Secondary Sample Change in Net Income ($I_{t-1,t}$) and Market Price Return ($M_{t-1,t}$)

Year	Regression													Correlation		Descriptive Statistics		*Obs.*
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	0.181	1.64	1.4E-01	-0.19	0.55	0.055	0.81	4.4E-01	-0.17	0.28	0.25	0.21	8	0.501	7.0E-02	0.08	0.64	10
1995	-0.166*	-2.74	2.5E-02	-0.37	0.04	0.262**	3.78	5.4E-03	0.03	0.49	0.48	0.19	8	-0.696*	1.3E-02	0.56	1.05	10
1996	-0.006	-0.06	9.5E-01	-0.31	0.30	0.043	0.90	3.9E-01	-0.11	0.20	4E-04	0.11	9	-0.021	4.8E-01	0.37	0.37	11
1997	0.032	0.21	8.4E-01	-0.47	0.54	0.267**	5.40	4.3E-04	0.11	0.43	5E-03	0.16	9	0.068	4.2E-01	0.01	0.33	11
1998	-0.026	-0.25	8.1E-01	-0.36	0.31	0.105	1.14	2.8E-01	-0.19	0.40	0.01	0.25	9	-0.083	4.0E-01	0.49	0.78	11
1999	-0.008	-0.07	9.4E-01	-0.35	0.34	0.227*	2.84	2.0E-02	-0.03	0.49	6E-04	0.25	9	-0.024	4.7E-01	0.23	0.75	11
2000	0.167	1.20	2.6E-01	-0.29	0.62	0.214	1.77	1.1E-01	-0.18	0.61	0.14	0.40	9	0.371	1.3E-01	3E-03	0.91	11
2001	0.115	0.54	6.0E-01	-0.57	0.80	-0.181	-1.67	1.3E-01	-0.53	0.17	0.03	0.28	9	0.179	3.0E-01	-0.32	0.42	11
2002	0.107	1.07	3.1E-01	-0.22	0.43	-0.429**	-3.94	3.4E-03	-0.78	-0.08	0.11	0.36	9	0.335	1.6E-01	0.08	1.13	11
2003	0.008	1.89	9.2E-02	-0.01	0.02	0.292**	5.02	7.2E-04	0.10	0.48	0.28	0.18	9	0.532*	4.6E-02	-4.30	13.9	11
2004	-0.013	-0.42	6.9E-01	-0.11	0.09	0.097*	3.13	1.2E-02	-3.8E-03	0.20	0.02	0.10	9	-0.138	3.4E-01	0.12	1.04	11
2005	0.001	0.36	7.2E-01	-0.01	0.01	0.25**	3.36	8.4E-03	0.01	0.49	0.01	0.24	9	0.121	3.6E-01	6.84	25.0	11
2006	0.016*	2.43	3.8E-02	-0.01	0.04	0.145**	5.20	5.7E-04	0.05	0.24	0.40	0.09	9	0.63*	1.9E-02	1.60	4.23	11
2007	0.029	0.73	4.8E-01	-0.10	0.16	-0.059	-0.63	5.4E-01	-0.36	0.24	0.06	0.29	9	0.236	2.4E-01	0.85	2.28	11
2008	-0.093	-0.24	8.2E-01	-1.36	1.17	-0.491	-1.78	1.1E-01	-1.39	0.41	0.01	0.56	9	-0.079	4.1E-01	-0.56	0.45	11

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The sample consists of a maximum of 11 observations per yearly regression from 11 banking related firms in the LSE that adopted the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Analysis

The Table U.5 cross-sectional regression slopes show that the change in the net income variable exhibits varying levels of statistically significant explanatory power to the market price return variable for the samples and the control group.

The Primary and Secondary sample only shows statistical significance for the years 1995 and 2006. The Control group shows statistical significance for the years: 1996, 1997, 1998 and 1999.

APPENDIX V ANALYSIS AND RESULTS FOR ACCOUNTING TO MARKET PRICE RELATIVE DELTA AND VALUE-AT-RISK USING CROSS-SECTIONAL REGRESSIONS FOR SAMPLES AND CONTROL GROUP AND USING TIME SERIES REGRESSIONS FOR UK BANKS

This appendix presents analysis and results for the yearly *accounting to market price relative delta* and *Historical Value-at-Risk Actual* cross-sectional regressions. This appendix also presents analysis and results for the *accounting to market price relative delta* and *Historical Value-at-Risk Actual* time series regressions for the UK banks.

V.1 Regressions for Total Equity to Market Price Relative Delta and Historical Value-at-Risk Actual

The regression analysis for the total equity to market price relative delta and Historical Value-at-Risk Actual is presented for the time range 1994 to 2008 in Table V.1. In the regressions, the Historical Value-at-Risk Actual variable is tested as the dependent variable, and the total equity to market price relative delta variable is tested as the independent variable.

Table V.1 Cross-Sectional Regression Analysis for Total Equity to Market Price Relative Delta and Historical Value-at-Risk Actual

Cross-Sectional Regression

Table V.1 Panel A to Panel D show the results for the cross-sectional regressions that test the total equity to market price relative delta and Historical Value-at-Risk Actual by applying the regression specified in equation (O.28). In this table, Panel A presents results for the Primary and Secondary sample; Panel B presents results for the Control group; Panel C presents results for the Primary sample; and, Panel D presents results for the Secondary sample.

Cross-Sectional Regression Table Description

The Table V.1 columns represent the following:

Year is the *panel data* year represented by the number of days from 1st January to 31st December, and also represents the 31st December variable record date for each year.

The Regression column presents the coefficients and related statistics for the regression specified in equation (O.28), and follows the model:

$$V_{i,t} = a + b\ (dE - dM)_{i,t} + e_{i,t}$$

Where: $V_{i,t}$ is the Value-at-Risk (V_t) for the i^{th} firm at time t, $(dE - dM)_{i,t}$ is the Total Equity to Market Price Relative Delta $(dE_{t-1,t} - dM_{t-1,t})$ for the i^{th} firm at time t, and $e_{i,t}$ is the regression error term. The *Lower* and *Upper* are the corresponding coefficient levels predicted at a 99% confidence level.

The Correlation column presents the correlation statistics for the relationship between the dependent and independent variables. The Descriptive Statistics column presents for the independent variable, the sample mean calculated using equation (O.17) and the sample standard deviation, *SD*, using equation (O.18). The *Obs.* column presents the number of sample firms observed for the year.

Table V.1 (Continued)

PANEL A

Cross-Sectional Regression Analysis for the Primary and Secondary Sample Total Equity to Market Price Relative Delta ($dE_{t-1,t}$ - $dM_{t-1,t}$) and Historical Value-at-Risk Actual (V_t)

Year	Regression													Correlation		Descriptive Statistics		Obs.
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	-0.787**	-4.87	3.8E-04	-1.28	-0.29	0.086*	2.41	3.3E-02	-0.02	0.20	0.66	0.13	12	-0.815**	1.9E-04	0.06	0.22	14
1995	-0.2**	-5.61	1.1E-04	-0.31	-0.09	-0.144**	-4.73	4.9E-04	-0.24	-0.05	0.72	0.11	12	-0.851**	5.7E-05	0.20	0.86	14
1996	-0.317	-1.27	2.3E-01	-1.07	0.44	0.040	0.81	4.4E-01	-0.11	0.19	0.11	0.17	13	-0.332	1.1E-01	0.08	0.19	15
1997	-0.199**	-4.40	7.2E-04	-0.33	-0.06	0.001	0.04	9.7E-01	-0.06	0.06	0.60	0.08	13	-0.773**	3.6E-04	-0.03	0.47	15
1998	-0.269	-1.00	3.4E-01	-1.08	0.54	-0.094	-1.36	2.0E-01	-0.30	0.11	0.07	0.27	13	-0.267	1.7E-01	0.04	0.26	15
1999	-0.224	-1.77	9.8E-02	-0.60	0.15	-0.126**	-3.78	2.0E-03	-0.23	-0.03	0.18	0.13	14	-0.428*	4.9E-02	-0.09	0.26	16
2000	-0.136*	-2.16	4.9E-02	-0.32	0.05	-0.102	-1.43	1.7E-01	-0.31	0.11	0.25	0.28	14	-0.499*	2.4E-02	0.24	1.14	16
2001	-0.185	-1.92	7.6E-02	-0.47	0.10	-0.251**	-5.14	1.5E-04	-0.40	-0.11	0.21	0.17	14	-0.456*	3.8E-02	0.24	0.46	16
2002	-0.598**	-6.92	7.1E-06	-0.86	-0.34	-0.202**	-4.70	3.4E-04	-0.33	-0.07	0.77	0.12	14	-0.88**	3.5E-06	0.35	0.36	16
2003	-0.135	-0.21	8.4E-01	-2.04	1.77	-0.534**	-3.69	2.4E-03	-0.96	-0.10	3E-03	0.49	14	-0.056	4.2E-01	-0.12	0.20	16
2004	0.632	2.00	6.5E-02	-0.31	1.57	-0.069	-1.27	2.2E-01	-0.23	0.09	0.22	0.21	14	0.471*	3.3E-02	-0.03	0.17	16
2005	0.014	0.24	8.1E-01	-0.15	0.18	0.013	0.58	5.7E-01	-0.05	0.08	4E-03	0.09	14	0.064	4.1E-01	0.07	0.39	16
2006	-0.279	-1.35	2.0E-01	-0.89	0.34	0.056	1.74	1.0E-01	-0.04	0.15	0.11	0.13	14	-0.338	1.0E-01	-0.03	0.16	16
2007	-0.536**	-8.78	4.6E-07	-0.72	-0.35	-0.018	-0.85	4.1E-01	-0.08	0.05	0.85	0.08	14	-0.92**	2.3E-07	0.18	0.32	16
2008	-0.713**	-15.1	4.6E-10	-0.85	-0.57	-0.243**	-4.72	3.3E-04	-0.40	-0.09	0.94	0.16	14	-0.971**	2.3E-10	0.68	0.88	16

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The sample consists of a maximum of 16 observations per yearly regression from 16 firms in the LSE consisting of the 5 banks and 11 banking related firms that adopted the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table V.1 (Continued)

PANEL B

Cross-Sectional Regression Analysis for the Control Group Total Equity to Market Price Relative Delta ($dE_{t-1,t}$ - $dM_{t-1,t}$) and Historical Value-at-Risk Actual (V_t)

Year	Regression													Correlation		Descriptive Statistics		*Obs.*
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	-0.039	-0.37	7.2E-01	-0.38	0.30	-0.095**	-3.56	6.1E-03	-0.18	-0.01	0.02	0.08	9	-0.123	3.6E-01	0.07	0.25	11
1995	0.944	1.07	3.1E-01	-1.92	3.80	-0.246**	-3.82	4.1E-03	-0.46	-0.04	0.11	0.12	9	0.337	1.6E-01	0.06	0.04	11
1996	-0.121	-0.78	4.5E-01	-0.62	0.37	-0.014	-0.30	7.7E-01	-0.16	0.13	0.06	0.14	10	-0.239	2.3E-01	0.14	0.28	12
1997	-2.482	-1.88	9.0E-02	-6.67	1.71	0.014	0.24	8.1E-01	-0.17	0.20	0.26	0.17	10	-0.511*	4.5E-02	0.03	0.04	12
1998	-2.502**	-6.28	9.1E-05	-3.76	-1.24	-0.075	-1.86	9.2E-02	-0.20	0.05	0.80	0.10	10	-0.893**	4.6E-05	0.07	0.08	12
1999	-0.017	-0.08	9.4E-01	-0.71	0.67	-0.171	-2.16	5.6E-02	-0.42	0.08	6E-04	0.26	10	-0.025	4.7E-01	0.09	0.37	12
2000	-1.578*	-2.85	1.7E-02	-3.33	0.18	-0.091	-1.57	1.5E-01	-0.28	0.09	0.45	0.18	10	-0.669**	8.6E-03	-0.05	0.10	12
2001	0.296	0.37	7.2E-01	-2.26	2.85	-0.299**	-7.19	3.0E-05	-0.43	-0.17	0.01	0.14	10	0.115	3.6E-01	-0.01	0.05	12
2002	-0.602*	-2.48	3.3E-02	-1.37	0.17	-0.362**	-17.64	7.3E-09	-0.43	-0.30	0.38	0.07	10	-0.617*	1.6E-02	0.03	0.08	12
2003	-0.059	-0.14	8.9E-01	-1.35	1.23	-0.454**	-14.68	4.3E-08	-0.55	-0.36	2E-03	0.09	10	-0.046	4.4E-01	0.04	0.07	12
2004	-1.253	-1.72	1.2E-01	-3.56	1.05	-0.013	-0.66	5.2E-01	-0.08	0.05	0.23	0.07	10	-0.478	5.8E-02	-5E-03	0.03	12
2005	-0.376	-1.25	2.4E-01	-1.33	0.58	0.039	1.53	1.6E-01	-0.04	0.12	0.13	0.07	10	-0.367	1.2E-01	-0.05	0.07	12
2006	-0.615	-1.65	1.3E-01	-1.79	0.56	0.024	0.50	6.3E-01	-0.13	0.17	0.21	0.15	10	-0.463	6.5E-02	-0.05	0.12	12
2007	-0.291	-0.75	4.7E-01	-1.52	0.94	-0.065	-1.30	2.2E-01	-0.22	0.09	0.05	0.16	10	-0.230	2.4E-01	-0.05	0.12	12
2008	-1.96**	-3.42	6.6E-03	-3.78	-0.14	-0.308**	-5.21	4.0E-04	-0.49	-0.12	0.54	0.13	10	-0.734**	3.3E-03	0.08	0.07	12

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The Control group consists of a maximum of 12 observations per yearly regression from 12 banking related firms in the LSE that did not adopt the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table V.1 (Continued)

PANEL C

Cross-Sectional Regression Analysis for the Primary Sample Total Equity to Market Price Relative Delta ($dE_{t-1,t}$ - $dM_{t-1,t}$) and Historical Value-at-Risk Actual (V_t)

Year	Regression													Correlation		Descriptive Statistics		*Obs.*
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	-0.707**	-23.06	1.9E-03	-1.01	-0.40	0.112**	11.6	7.3E-03	0.02	0.21	1.00	0.02	2	-0.998**	9.4E-04	0.19	0.29	4
1995	-0.238	-1.23	3.4E-01	-2.15	1.68	-0.212	-3.17	8.7E-02	-0.87	0.45	0.43	0.13	2	-0.657	1.7E-01	0.04	0.40	4
1996	-0.057	-0.21	8.6E-01	-2.78	2.67	0.114	2.84	1.0E-01	-0.28	0.51	0.02	0.07	2	-0.144	4.3E-01	-0.07	0.15	4
1997	-0.397	-1.83	2.1E-01	-2.55	1.76	-0.036	-0.44	7.0E-01	-0.83	0.76	0.63	0.12	2	-0.791	1.0E-01	-0.23	0.33	4
1998	-0.200	-0.10	9.3E-01	-19.23	18.83	-0.359	-1.40	3.0E-01	-2.91	2.19	0.01	0.45	2	-0.073	4.6E-01	0.06	0.14	4
1999	-0.089	-0.26	8.1E-01	-2.07	1.89	-0.125	-1.68	1.9E-01	-0.56	0.31	0.02	0.14	3	-0.149	4.1E-01	-0.11	0.21	5
2000	-0.064	-1.23	3.0E-01	-0.37	0.24	-0.243	-2.47	9.0E-02	-0.82	0.33	0.34	0.18	3	-0.580	1.5E-01	1.09	1.76	5
2001	-1.146	-3.12	5.3E-02	-3.29	1.00	0.019	0.25	8.2E-01	-0.41	0.45	0.76	0.10	3	-0.874*	2.6E-02	0.16	0.14	5
2002	-0.346	-1.10	3.5E-01	-2.18	1.49	-0.252*	-3.26	4.7E-02	-0.70	0.20	0.29	0.10	3	-0.537	1.8E-01	0.21	0.15	5
2003	-0.764	-1.49	2.3E-01	-3.77	2.24	-0.429*	-4.37	2.2E-02	-1.00	0.14	0.42	0.21	3	-0.651	1.2E-01	-0.06	0.20	5
2004	-0.142	-0.28	8.0E-01	-3.14	2.85	-0.045	-1.30	2.8E-01	-0.25	0.16	0.02	0.08	3	-0.158	4.0E-01	1.9E-03	0.08	5
2005	0.048	0.39	7.2E-01	-0.67	0.76	-0.011	-0.60	5.9E-01	-0.12	0.10	0.05	0.03	3	0.220	3.6E-01	0.10	0.13	5
2006	0.302	0.95	4.1E-01	-1.55	2.16	0.015	0.81	4.8E-01	-0.09	0.12	0.23	0.04	3	0.481	2.1E-01	0.01	0.07	5
2007	-0.59**	-9.47	2.5E-03	-0.95	-0.23	-0.011	-0.40	7.2E-01	-0.17	0.15	0.97	0.03	3	-0.984**	1.2E-03	0.36	0.28	5
2008	-0.877*	-5.27	1.3E-02	-1.85	0.09	-0.011	-0.05	9.6E-01	-1.35	1.32	0.90	0.23	3	-0.95**	6.6E-03	1.22	0.70	5

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The sample consists of a maximum of 5 observations per yearly regression from the 5 banks in the LSE that adopted the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table V.1 (Continued)

PANEL D

Cross-Sectional Regression Analysis for the Secondary Sample Total Equity to Market Price Relative Delta ($dE_{t-1,t}$ - $dM_{t-1,t}$) and Historical Value-at-Risk Actual (V_t)

	Regression													Correlation		Descriptive Statistics		
Year	Slope					Intercept					Model							*Obs.*
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	-0.961**	-3.44	8.8E-03	-1.90	-0.02	0.071	1.50	1.7E-01	-0.09	0.23	0.60	0.15	8	-0.773**	4.4E-03	0.01	0.18	10
1995	-0.205**	-5.99	3.3E-04	-0.32	-0.09	-0.115**	-3.42	9.1E-03	-0.23	-2.2E-03	0.82	0.10	8	-0.904**	1.6E-04	0.26	1.00	10
1996	-0.217	-0.59	5.7E-01	-1.42	0.99	0.006	0.07	9.4E-01	-0.25	0.26	0.04	0.20	9	-0.192	2.9E-01	0.14	0.17	11
1997	-0.168**	-4.34	1.9E-03	-0.29	-0.04	-0.004	-0.21	8.4E-01	-0.06	0.06	0.68	0.06	9	-0.823**	9.3E-04	0.04	0.50	11
1998	-0.231	-1.74	1.1E-01	-0.66	0.20	-0.001	-0.02	9.8E-01	-0.13	0.12	0.25	0.13	9	-0.503	5.7E-02	0.03	0.30	11
1999	-0.257	-1.77	1.1E-01	-0.73	0.22	-0.122*	-2.98	1.6E-02	-0.26	0.01	0.26	0.13	9	-0.508	5.5E-02	-0.07	0.28	11
2000	-0.407	-1.94	8.5E-02	-1.09	0.28	-0.111	-1.21	2.6E-01	-0.41	0.19	0.29	0.29	9	-0.542*	4.2E-02	-0.14	0.43	11
2001	-0.136	-1.59	1.5E-01	-0.41	0.14	-0.319**	-6.26	1.5E-04	-0.48	-0.15	0.22	0.15	9	-0.469	7.3E-02	0.28	0.55	11
2002	-0.611**	-5.78	2.7E-04	-0.95	-0.27	-0.198*	-3.25	1.0E-02	-0.40	2.3E-04	0.79	0.14	9	-0.887**	1.3E-04	0.42	0.41	11
2003	-0.034	-0.04	9.7E-01	-3.03	2.96	-0.584*	-2.64	2.7E-02	-1.30	0.14	1E-04	0.57	9	-0.012	4.9E-01	-0.15	0.20	11
2004	0.661	1.66	1.3E-01	-0.63	1.95	-0.077	-0.97	3.6E-01	-0.34	0.18	0.23	0.26	9	0.485	6.5E-02	-0.05	0.20	11
2005	0.014	0.21	8.4E-01	-0.21	0.24	0.022	0.70	5.0E-01	-0.08	0.12	5E-03	0.10	9	0.070	4.2E-01	0.05	0.47	11
2006	-0.280	-1.10	3.0E-01	-1.11	0.55	0.072	1.55	1.6E-01	-0.08	0.22	0.12	0.15	9	-0.344	1.5E-01	-0.04	0.19	11
2007	-0.502**	-5.48	3.9E-04	-0.80	-0.20	-0.016	-0.56	5.9E-01	-0.11	0.08	0.77	0.09	9	-0.877**	1.9E-04	0.09	0.31	11
2008	-0.687**	-15.46	8.7E-08	-0.83	-0.54	-0.269**	-6.47	1.2E-04	-0.40	-0.13	0.96	0.12	9	-0.982**	4.3E-08	0.44	0.87	11

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The sample consists of a maximum of 11 observations per yearly regression from 11 banking related firms in the LSE that adopted the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Analysis

The Table V.1 cross-sectional regression slopes show that the total equity to market price relative delta variable exhibits varying levels of statistically significant explanatory power to the Historical Value-at-Risk Actual variable for the samples and the control group.

The Primary and Secondary sample shows statistical significance for the years: 1994, 1995, 1997, 2000, 2002, 2007 and 2008. The Control group shows statistical significance for the years: 1998, 2000, 2002 and 2008.

V.2 Regressions for Total Assets to Market Price Relative Delta and Historical Value-at-Risk Actual

The regression analysis for the total assets to market price relative delta and Historical Value-at-Risk Actual is presented for the time range 1994 to 2008 in Table V.2. In the regressions, the Historical Value-at-Risk Actual variable is tested as the dependent variable, and the total assets to market price relative delta variable is tested as the independent variable.

Table V.2 Cross-Sectional Regression Analysis for Total Assets to Market Price Relative Delta and Historical Value-at-Risk Actual

Cross-Sectional Regression

Table V.2 Panel A to Panel D show the results for the cross-sectional regressions that test the total assets to market price relative delta and Historical Value-at-Risk Actual by applying the regression specified in equation (O.28). In this table, Panel A presents results for the Primary and Secondary sample; Panel B presents results for the Control group; Panel C presents results for the Primary sample; and, Panel D presents results for the Secondary sample.

Cross-Sectional Regression Table Description

The Table V.2 columns represent the following:

Year is the *panel data* year represented by the number of days from 1st January to 31st December, and also represents the 31st December variable record date for each year.

The Regression column presents the coefficients and related statistics for the regression specified in equation (O.28), and follows the model:

$$V_{i,t} = a + b\ (dA - dM)_{i,t} + e_{i,t}$$

Where: $V_{i,t}$ is the Value-at-Risk (V_t) for the i^{th} firm at time t, $(dA - dM)_{i,t}$ is the Total Assets to Market Price Relative Delta ($dA_{t-1,t} - dM_{t-1,t}$) for the i^{th} firm at time t, and $e_{i,t}$ is the regression error term. The *Lower* and *Upper* are the corresponding coefficient levels predicted at a 99% confidence level.

The Correlation column presents the correlation statistics for the relationship between the dependent and independent variables. The Descriptive Statistics column presents for the independent variable, the sample mean calculated using equation (O.17) and the sample standard deviation, *SD*, using equation (O.18). The *Obs.* column presents the number of sample firms observed for the year.

Table V.2 (Continued)

PANEL A

Cross-Sectional Regression Analysis for the Primary and Secondary Sample Total Assets to Market Price Relative Delta ($dA_{t-1,t}$ - $dM_{t-1,t}$) and Historical Value-at-Risk Actual (V_t)

Year	Regression													Correlation		Descriptive Statistics		Obs.
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	-0.544**	-4.16	1.3E-03	-0.94	-0.14	0.033	0.86	4.1E-01	-0.08	0.15	0.59	0.14	12	-0.769**	6.6E-04	-0.01	0.30	14
1995	-0.203	-1.17	2.6E-01	-0.73	0.33	-0.185**	-3.46	4.7E-03	-0.35	-0.02	0.10	0.20	12	-0.321	1.3E-01	-0.01	0.32	14
1996	-0.100	-0.47	6.5E-01	-0.75	0.55	0.015	0.32	7.6E-01	-0.13	0.16	0.02	0.18	13	-0.129	3.2E-01	0.01	0.23	15
1997	-0.232	-1.93	7.5E-02	-0.59	0.13	-0.025	-0.75	4.7E-01	-0.12	0.07	0.22	0.11	13	-0.473*	3.8E-02	-0.14	0.24	15
1998	-0.261	-0.77	4.6E-01	-1.28	0.76	-0.095	-1.34	2.0E-01	-0.31	0.12	0.04	0.27	13	-0.209	2.3E-01	0.04	0.21	15
1999	-0.259	-1.91	7.7E-02	-0.66	0.14	-0.15**	-3.91	1.6E-03	-0.26	-0.04	0.21	0.12	14	-0.455*	3.8E-02	-0.17	0.24	16
2000	-0.331*	-2.70	1.7E-02	-0.70	0.03	-0.141*	-2.17	4.8E-02	-0.34	0.05	0.34	0.26	14	-0.585**	8.7E-03	-0.02	0.55	16
2001	-0.253*	-2.27	4.0E-02	-0.59	0.08	-0.24**	-4.99	2.0E-04	-0.38	-0.10	0.27	0.16	14	-0.518*	2.0E-02	0.22	0.38	16
2002	-0.554**	-7.65	2.3E-06	-0.77	-0.34	-0.213**	-5.55	7.1E-05	-0.33	-0.10	0.81	0.11	14	-0.898**	1.2E-06	0.36	0.40	16
2003	0.049	0.09	9.3E-01	-1.63	1.73	-0.509**	-3.23	6.1E-03	-0.98	-0.04	5E-04	0.49	14	0.023	4.7E-01	-0.18	0.22	16
2004	0.318	0.89	3.9E-01	-0.74	1.38	-0.093	-1.60	1.3E-01	-0.27	0.08	0.05	0.23	14	0.232	1.9E-01	0.01	0.17	16
2005	-0.053	-0.68	5.1E-01	-0.28	0.18	0.019	0.85	4.1E-01	-0.05	0.09	0.03	0.08	14	-0.180	2.5E-01	0.10	0.28	16
2006	-0.168	-1.23	2.4E-01	-0.58	0.24	0.057	1.74	1.0E-01	-0.04	0.15	0.10	0.13	14	-0.311	1.2E-01	-0.04	0.24	16
2007	-0.37**	-6.37	1.7E-05	-0.54	-0.20	-0.033	-1.21	2.5E-01	-0.11	0.05	0.74	0.10	14	-0.862**	8.6E-06	0.21	0.43	16
2008	-0.777**	-8.51	6.6E-07	-1.05	-0.50	-0.184	-1.98	6.7E-02	-0.46	0.09	0.84	0.27	14	-0.915**	3.3E-07	0.70	0.76	16

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The sample consists of a maximum of 16 observations per yearly regression from 16 firms in the LSE consisting of the 5 banks and 11 banking related firms that adopted the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table V.2 (Continued)

PANEL B

Cross-Sectional Regression Analysis for the Control Group Total Assets to Market Price Relative Delta ($dA_{t-1,t}$ - $dM_{t-1,t}$) and Historical Value-at-Risk Actual (V_t)

Year	Regression													Correlation		Descriptive Statistics		*Obs.*
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	-0.061	-0.52	6.2E-01	-0.45	0.32	-0.092**	-3.28	9.6E-03	-0.18	-7.1E-04	0.03	0.08	9	-0.171	3.1E-01	0.10	0.23	11
1995	-0.937**	-3.43	7.5E-03	-1.83	-0.05	-0.165**	-6.57	1.0E-04	-0.25	-0.08	0.57	0.08	9	-0.753**	3.8E-03	0.02	0.09	11
1996	-0.220	-1.13	2.9E-01	-0.84	0.40	-0.016	-0.37	7.2E-01	-0.15	0.12	0.11	0.14	10	-0.335	1.4E-01	0.07	0.22	12
1997	-0.517	-1.15	2.8E-01	-1.94	0.91	-0.052	-0.98	3.5E-01	-0.22	0.12	0.12	0.18	10	-0.341	1.4E-01	-0.01	0.12	12
1998	-2.752*	-2.56	2.8E-02	-6.16	0.66	-0.060	-0.68	5.1E-01	-0.34	0.22	0.40	0.18	10	-0.629*	1.4E-02	0.07	0.05	12
1999	-1.362	-1.35	2.1E-01	-4.57	1.84	-0.267*	-2.69	2.3E-02	-0.58	0.05	0.15	0.24	10	-0.392	1.0E-01	-0.07	0.07	12
2000	-0.737	-0.90	3.9E-01	-3.33	1.85	-0.057	-0.70	5.0E-01	-0.31	0.20	0.08	0.23	10	-0.274	1.9E-01	-0.06	0.09	12
2001	0.053	0.10	9.3E-01	-1.70	1.80	-0.302**	-7.33	2.5E-05	-0.43	-0.17	9E-04	0.14	10	0.030	4.6E-01	-0.01	0.08	12
2002	-0.456	-1.60	1.4E-01	-1.36	0.45	-0.368**	-15.85	2.1E-08	-0.44	-0.29	0.20	0.07	10	-0.451	7.1E-02	0.03	0.08	12
2003	-0.002	-3.5E-03	9E-01	-1.70	1.69	-0.456**	-12.17	2.6E-07	-0.57	-0.34	1E-06	0.09	10	-0.001	5.0E-01	-0.05	0.05	12
2004	-0.370	-0.87	4.1E-01	-1.72	0.99	-0.019	-0.76	4.6E-01	-0.10	0.06	0.07	0.07	10	-0.264	2.0E-01	-0.03	0.05	12
2005	0.079	0.22	8.3E-01	-1.08	1.24	0.066	1.34	2.1E-01	-0.09	0.22	5E-03	0.08	10	0.068	4.2E-01	-0.12	0.06	12
2006	-0.550	-1.62	1.4E-01	-1.62	0.52	0.018	0.36	7.2E-01	-0.14	0.17	0.21	0.15	10	-0.457	6.8E-02	-0.07	0.13	12
2007	-0.417	-1.29	2.3E-01	-1.44	0.61	-0.084	-1.65	1.3E-01	-0.24	0.08	0.14	0.15	10	-0.377	1.1E-01	-0.08	0.14	12
2008	0.651	1.19	2.6E-01	-1.08	2.38	-0.482**	-9.02	4.0E-06	-0.65	-0.31	0.12	0.18	10	0.353	1.3E-01	0.03	0.10	12

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The Control group consists of a maximum of 12 observations per yearly regression from 12 banking related firms in the LSE that did not adopt the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table V.2 (Continued)

PANEL C

Cross-Sectional Regression Analysis for the Primary Sample Total Assets to Market Price Relative Delta ($dA_{t-1,t}$ - $dM_{t-1,t}$) and Historical Value-at-Risk Actual (V_t)

Year	Regression													Correlation		Descriptive Statistics		*Obs.*
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	-1.223	-2.37	1.4E-01	-6.35	3.90	0.126	1.41	2.9E-01	-0.76	1.01	0.74	0.13	2	-0.859	7.1E-02	0.12	0.15	4
1995	-0.201	-0.71	5.5E-01	-3.01	2.61	-0.245	-2.89	1.0E-01	-1.09	0.60	0.20	0.16	2	-0.449	2.8E-01	-0.11	0.32	4
1996	-0.288	-1.38	3.0E-01	-2.35	1.78	0.088	2.62	1.2E-01	-0.24	0.42	0.49	0.05	2	-0.699	1.5E-01	-0.11	0.14	4
1997	-0.320	-1.02	4.1E-01	-3.44	2.79	-0.002	-0.02	9.8E-01	-1.00	1.00	0.34	0.17	2	-0.585	2.1E-01	-0.18	0.30	4
1998	2.390	1.34	3.1E-01	-15.32	20.10	-0.487	-2.63	1.2E-01	-2.33	1.35	0.47	0.33	2	0.688	1.6E-01	0.05	0.11	4
1999	-0.322	-1.44	2.5E-01	-1.63	0.99	-0.183	-2.66	7.6E-02	-0.58	0.22	0.41	0.11	3	-0.638	1.2E-01	-0.21	0.25	5
2000	-0.378	-1.97	1.4E-01	-1.50	0.74	-0.182	-1.95	1.5E-01	-0.73	0.36	0.56	0.15	3	-0.751	7.2E-02	0.34	0.38	5
2001	-1.449*	-3.29	4.6E-02	-4.02	1.13	0.022	0.31	7.7E-01	-0.39	0.44	0.78	0.10	3	-0.885*	2.3E-02	0.13	0.11	5
2002	-0.337	-2.00	1.4E-01	-1.32	0.65	-0.217*	-3.48	4.0E-02	-0.58	0.15	0.57	0.07	3	-0.755	7.0E-02	0.31	0.22	5
2003	-0.712	-0.75	5.1E-01	-6.25	4.83	-0.457	-3.04	5.6E-02	-1.33	0.42	0.16	0.25	3	-0.398	2.5E-01	-0.11	0.13	5
2004	-0.173	-0.34	7.6E-01	-3.15	2.80	-0.031	-0.56	6.2E-01	-0.35	0.29	0.04	0.08	3	-0.193	3.8E-01	0.08	0.08	5
2005	-0.009	-0.09	9.3E-01	-0.58	0.56	-0.004	-0.14	9.0E-01	-0.18	0.17	3E-03	0.03	3	-0.051	4.7E-01	0.27	0.17	5
2006	-0.282	-0.98	4.0E-01	-1.97	1.40	0.009	0.46	6.8E-01	-0.11	0.13	0.24	0.04	3	-0.491	2.0E-01	-0.03	0.07	5
2007	-0.336*	-4.19	2.5E-02	-0.80	0.13	-0.072	-1.47	2.4E-01	-0.36	0.21	0.85	0.07	3	-0.924*	1.2E-02	0.46	0.46	5
2008	-1.079**	-12.77	1.0E-03	-1.57	-0.59	0.495*	3.77	3.3E-02	-0.27	1.26	0.98	0.10	3	-0.991**	5.2E-04	1.46	0.59	5

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The sample consists of a maximum of 5 observations per yearly regression from the 5 banks in the LSE that adopted the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table V.2 (Continued)

PANEL D

Cross-Sectional Regression Analysis for the Secondary Sample Total Assets to Market Price Relative Delta ($dA_{t-1,t}$ - $dM_{t-1,t}$) and Historical Value-at-Risk Actual (V_t)

Year	Regression													Correlation		Descriptive Statistics		*Obs.*
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	-0.511**	-3.47	8.5E-03	-1.01	-0.02	0.030	0.62	5.5E-01	-0.13	0.19	0.60	0.15	8	-0.775**	4.2E-03	-0.07	0.34	10
1995	-0.241	-1.05	3.3E-01	-1.02	0.53	-0.159	-2.21	5.8E-02	-0.40	0.08	0.12	0.23	8	-0.347	1.6E-01	0.04	0.33	10
1996	0.017	0.07	9.5E-01	-0.84	0.88	-0.025	-0.40	7.0E-01	-0.23	0.18	5E-04	0.20	9	0.022	4.7E-01	0.06	0.24	11
1997	-0.170	-1.26	2.4E-01	-0.61	0.27	-0.031	-0.91	3.9E-01	-0.14	0.08	0.15	0.10	9	-0.387	1.2E-01	-0.12	0.23	11
1998	-0.382*	-2.72	2.4E-02	-0.84	0.07	0.005	0.15	8.8E-01	-0.10	0.11	0.45	0.11	9	-0.671*	1.2E-02	0.03	0.24	11
1999	-0.243	-1.32	2.2E-01	-0.84	0.35	-0.138*	-2.78	2.1E-02	-0.30	0.02	0.16	0.14	9	-0.404	1.1E-01	-0.15	0.24	11
2000	-0.271	-1.51	1.6E-01	-0.85	0.31	-0.105	-1.06	3.2E-01	-0.42	0.22	0.20	0.31	9	-0.450	8.2E-02	-0.19	0.54	11
2001	-0.187	-1.89	9.1E-02	-0.51	0.13	-0.308**	-6.11	1.8E-04	-0.47	-0.14	0.28	0.14	9	-0.533*	4.6E-02	0.27	0.45	11
2002	-0.562**	-7.19	5.1E-05	-0.82	-0.31	-0.239**	-5.19	5.7E-04	-0.39	-0.09	0.85	0.12	9	-0.923**	2.6E-05	0.39	0.47	11
2003	0.023	0.03	9.8E-01	-2.31	2.36	-0.574*	-2.50	3.4E-02	-1.32	0.17	1E-04	0.57	9	0.011	4.9E-01	-0.21	0.25	11
2004	0.317	0.67	5.2E-01	-1.22	1.86	-0.103	-1.18	2.7E-01	-0.39	0.18	0.05	0.29	9	0.218	2.6E-01	-0.03	0.19	11
2005	-0.043	-0.39	7.0E-01	-0.40	0.31	0.024	0.77	4.6E-01	-0.08	0.12	0.02	0.10	9	-0.130	3.5E-01	0.03	0.29	11
2006	-0.161	-0.97	3.6E-01	-0.70	0.38	0.077	1.65	1.3E-01	-0.07	0.23	0.09	0.15	9	-0.308	1.8E-01	-0.05	0.29	11
2007	-0.363**	-4.06	2.8E-03	-0.65	-0.07	-0.023	-0.67	5.2E-01	-0.14	0.09	0.65	0.11	9	-0.804**	1.4E-03	0.10	0.40	11
2008	-1.059**	-12.52	5.4E-07	-1.33	-0.78	-0.191**	-3.53	6.4E-03	-0.37	-0.02	0.95	0.15	9	-0.972**	2.7E-07	0.36	0.56	11

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The sample consists of a maximum of 11 observations per yearly regression from 11 banking related firms in the LSE that adopted the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Analysis

The Table V.2 cross-sectional regression slopes show that the total assets to market price relative delta variable exhibits varying levels of statistically significant explanatory power to the Historical Value-at-Risk Actual variable for the samples and the control group.

The Primary and Secondary sample shows statistical significance for the years: 1994, 2000, 2001, 2002, 2007 and 2008. The Control group shows statistical significance for the years: 1995 and 1998.

V.3 Regressions for Total Liabilities to Market Price Relative Delta and Historical Value-at-Risk Actual

The regression analysis for the total liabilities to market price relative delta and Historical Value-at-Risk Actual is presented for the time range 1994 to 2008 in Table V.3. In the regressions, the Historical Value-at-Risk Actual variable is tested as the dependent variable, and the total liabilities to market price relative delta variable is tested as the independent variable.

Table V.3 Cross-Sectional Regression Analysis for Total Liabilities to Market Price Relative Delta and Historical Value-at-Risk Actual

Cross-Sectional Regression

Table V.3 Panel A to Panel D show the results for the cross-sectional regressions that test the total liabilities to market price relative delta and Historical Value-at-Risk Actual by applying the regression specified in equation (O.28). In this table, Panel A presents results for the Primary and Secondary sample; Panel B presents results for the Control group; Panel C presents results for the Primary sample; and, Panel D presents results for the Secondary sample.

Cross-Sectional Regression Table Description

The Table V.3 columns represent the following:

Year is the *panel data* year represented by the number of days from 1st January to 31st December, and also represents the 31st December variable record date for each year.

The Regression column presents the coefficients and related statistics for the regression specified in equation (O.28), and follows the model:

$$V_{i,t} = a + b\ (dL - dM)_{i,t} + e_{i,t}$$

Where: $V_{i,t}$ is the Value-at-Risk (V_t) for the i^{th} firm at time t, $(dL - dM)_{i,t}$ is the Total Liabilities to Market Price Relative Delta $(dL_{t-1,t} - dM_{t-1,t})$ for the i^{th} firm at time t, and $e_{i,t}$ is the regression error term. The *Lower* and *Upper* are the corresponding coefficient levels predicted at a 99% confidence level.

The Correlation column presents the correlation statistics for the relationship between the dependent and independent variables. The Descriptive Statistics column presents for the independent variable, the sample mean calculated using equation (O.17) and the sample standard deviation, *SD*, using equation (O.18). The *Obs.* column presents the number of sample firms observed for the year.

Table V.3 (Continued)

PANEL A

Cross-Sectional Regression Analysis for the Primary and Secondary Sample Total Liabilities to Market Price Relative Delta ($dL_{t-1,t}$ - $dM_{t-1,t}$) and Historical Value-at-Risk Actual (V_t)

Year	Regression													Correlation		Descriptive Statistics		*Obs.*
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	-0.404**	-4.19	1.3E-03	-0.70	-0.11	0.068	1.76	1.0E-01	-0.05	0.18	0.59	0.14	12	-0.771**	6.3E-04	0.07	0.41	14
1995	-0.070	-0.60	5.6E-01	-0.42	0.28	-0.183**	-3.29	6.4E-03	-0.35	-0.01	0.03	0.21	12	-0.171	2.8E-01	2.9E-03	0.50	14
1996	-0.110	-0.60	5.6E-01	-0.66	0.44	0.011	0.23	8.2E-01	-0.13	0.15	0.03	0.18	13	-0.163	2.8E-01	-0.02	0.27	15
1997	-0.177	-1.25	2.3E-01	-0.60	0.25	-0.027	-0.66	5.2E-01	-0.15	0.10	0.11	0.12	13	-0.329	1.2E-01	-0.19	0.22	15
1998	-0.162	-0.58	5.7E-01	-1.01	0.68	-0.099	-1.39	1.9E-01	-0.31	0.12	0.02	0.27	13	-0.158	2.9E-01	0.03	0.26	15
1999	-0.164	-1.82	9.1E-02	-0.43	0.11	-0.15**	-3.81	1.9E-03	-0.27	-0.03	0.19	0.13	14	-0.437*	4.5E-02	-0.26	0.36	16
2000	-0.238	-2.01	6.4E-02	-0.59	0.12	-0.129	-1.82	9.0E-02	-0.34	0.08	0.22	0.28	14	-0.473*	3.2E-02	0.02	0.62	16
2001	-0.26*	-2.21	4.4E-02	-0.61	0.09	-0.221**	-4.12	1.0E-03	-0.38	-0.06	0.26	0.17	14	-0.509*	2.2E-02	0.29	0.37	16
2002	-0.529**	-7.35	3.6E-06	-0.74	-0.32	-0.196**	-4.74	3.2E-04	-0.32	-0.07	0.79	0.12	14	-0.891**	1.8E-06	0.41	0.41	16
2003	0.168	0.47	6.5E-01	-0.89	1.23	-0.489**	-3.61	2.8E-03	-0.89	-0.09	0.02	0.48	14	0.125	3.2E-01	-0.17	0.35	16
2004	0.078	0.25	8.0E-01	-0.84	1.00	-0.089	-1.49	1.6E-01	-0.27	0.09	5E-03	0.24	14	0.068	4.0E-01	-0.02	0.20	16
2005	-0.022	-0.33	7.4E-01	-0.22	0.18	0.017	0.72	4.8E-01	-0.05	0.09	0.01	0.08	14	-0.089	3.7E-01	0.15	0.33	16
2006	-0.140	-1.51	1.5E-01	-0.42	0.14	0.049	1.51	1.5E-01	-0.05	0.15	0.14	0.12	14	-0.374	7.7E-02	-0.10	0.35	16
2007	-0.287**	-4.26	7.9E-04	-0.49	-0.09	-0.036	-0.97	3.5E-01	-0.14	0.07	0.56	0.13	14	-0.751**	4.0E-04	0.27	0.49	16
2008	-0.809**	-8.33	8.5E-07	-1.10	-0.52	-0.123	-1.23	2.4E-01	-0.42	0.17	0.83	0.27	14	-0.912**	4.2E-07	0.75	0.73	16

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The sample consists of a maximum of 16 observations per yearly regression from 16 firms in the LSE consisting of the 5 banks and 11 banking related firms that adopted the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table V.3 (Continued)

PANEL B

Cross-Sectional Regression Analysis for the Control Group Total Liabilities to Market Price Relative Delta ($dL_{t-1,t}$ - $dM_{t-1,t}$) and Historical Value-at-Risk Actual (V_t)

Year	Regression													Correlation		Descriptive Statistics		*Obs.*
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	0.004	0.08	9.4E-01	-0.15	0.16	-0.099*	-3.21	1.1E-02	-0.20	1.4E-03	8E-04	0.09	9	0.028	4.7E-01	0.36	0.57	11
1995	-0.072**	-5.00	7.4E-04	-0.12	-0.03	-0.173**	-8.97	8.8E-06	-0.24	-0.11	0.74	0.06	9	-0.857**	3.7E-04	0.21	1.38	11
1996	-0.277*	-2.41	3.6E-02	-0.64	0.09	-0.029	-0.86	4.1E-01	-0.14	0.08	0.37	0.12	10	-0.607*	1.8E-02	0.01	0.31	12
1997	-0.061	-0.63	5.4E-01	-0.37	0.25	-0.053	-0.96	3.6E-01	-0.23	0.12	0.04	0.19	10	-0.196	2.7E-01	-0.08	0.59	12
1998	-0.281*	-2.85	1.7E-02	-0.59	0.03	-0.15*	-2.54	2.9E-02	-0.34	0.04	0.45	0.17	10	-0.669**	8.7E-03	0.32	0.53	12
1999	-0.354	-1.42	1.9E-01	-1.14	0.43	-0.212*	-2.82	1.8E-02	-0.45	0.03	0.17	0.24	10	-0.411	9.3E-02	-0.11	0.29	12
2000	0.056	0.29	7.8E-01	-0.56	0.67	-0.021	-0.29	7.8E-01	-0.25	0.21	0.01	0.24	10	0.091	3.9E-01	0.08	0.38	12
2001	-0.026	-0.52	6.2E-01	-0.18	0.13	-0.303**	-7.57	1.9E-05	-0.43	-0.18	0.03	0.14	10	-0.161	3.1E-01	-0.01	0.84	12
2002	-0.136	-1.14	2.8E-01	-0.52	0.24	-0.35**	-9.56	2.4E-06	-0.47	-0.23	0.11	0.08	10	-0.338	1.4E-01	0.24	0.20	12
2003	-0.052	-0.33	7.5E-01	-0.55	0.44	-0.469**	-9.76	2.0E-06	-0.62	-0.32	0.01	0.09	10	-0.104	3.7E-01	-0.26	0.18	12
2004	-0.002	-0.02	9.9E-01	-0.29	0.29	-0.007	-0.31	7.6E-01	-0.08	0.07	3E-05	0.08	10	-0.005	4.9E-01	-0.09	0.25	12
2005	0.049	0.67	5.2E-01	-0.18	0.28	0.072*	2.28	4.6E-02	-0.03	0.17	0.04	0.08	10	0.207	2.6E-01	-0.31	0.31	12
2006	-0.030	-0.34	7.4E-01	-0.31	0.25	0.055	1.13	2.9E-01	-0.10	0.21	0.01	0.17	10	-0.105	3.7E-01	0.01	0.56	12
2007	-0.090	-1.93	8.3E-02	-0.24	0.06	-0.073	-1.74	1.1E-01	-0.21	0.06	0.27	0.14	10	-0.521*	4.1E-02	-0.25	0.90	12
2008	0.035	0.13	9.0E-01	-0.82	0.89	-0.476**	-4.50	1.1E-03	-0.81	-0.14	2E-03	0.19	10	0.042	4.5E-01	0.34	0.21	12

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The Control group consists of a maximum of 12 observations per yearly regression from 12 banking related firms in the LSE that did not adopt the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table V.3 (Continued)

PANEL C

Cross-Sectional Regression Analysis for the Primary Sample Total Liabilities to Market Price Relative Delta ($dL_{t-1,t}$ - $dM_{t-1,t}$) and Historical Value-at-Risk Actual (V_t)

Year	Regression													Correlation		Descriptive Statistics		*Obs.*
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	-1.251	-2.18	1.6E-01	-6.95	4.44	0.127	1.32	3.2E-01	-0.83	1.08	0.70	0.14	2	-0.839	8.1E-02	0.12	0.14	4
1995	-0.198	-0.70	5.6E-01	-3.01	2.61	-0.245	-2.88	1.0E-01	-1.09	0.60	0.20	0.16	2	-0.444	2.8E-01	-0.12	0.32	4
1996	-0.296	-1.47	2.8E-01	-2.30	1.71	0.086	2.63	1.2E-01	-0.24	0.41	0.52	0.05	2	-0.720	1.4E-01	-0.11	0.14	4
1997	-0.319	-1.00	4.2E-01	-3.49	2.85	-0.001	-0.01	9.9E-01	-1.00	1.00	0.33	0.17	2	-0.577	2.1E-01	-0.18	0.30	4
1998	2.450	1.45	2.8E-01	-14.29	19.19	-0.489	-2.76	1.1E-01	-2.25	1.27	0.51	0.32	2	0.717	1.4E-01	0.05	0.11	4
1999	-0.325	-1.48	2.3E-01	-1.61	0.96	-0.185	-2.71	7.3E-02	-0.58	0.21	0.42	0.11	3	-0.650	1.2E-01	-0.21	0.25	5
2000	-0.391	-2.05	1.3E-01	-1.51	0.73	-0.182	-2.01	1.4E-01	-0.71	0.35	0.58	0.14	3	-0.763	6.7E-02	0.33	0.38	5
2001	-1.441	-3.09	5.4E-02	-4.16	1.28	0.018	0.24	8.3E-01	-0.42	0.45	0.76	0.10	3	-0.872*	2.7E-02	0.12	0.11	5
2002	-0.334	-2.03	1.4E-01	-1.29	0.63	-0.215*	-3.47	4.0E-02	-0.58	0.15	0.58	0.07	3	-0.761	6.8E-02	0.32	0.22	5
2003	-0.696	-0.73	5.2E-01	-6.29	4.89	-0.457	-2.99	5.8E-02	-1.35	0.44	0.15	0.25	3	-0.387	2.6E-01	-0.11	0.13	5
2004	-0.171	-0.34	7.5E-01	-3.08	2.74	-0.030	-0.54	6.3E-01	-0.36	0.30	0.04	0.08	3	-0.195	3.8E-01	0.09	0.08	5
2005	-0.011	-0.11	9.2E-01	-0.58	0.55	-0.003	-0.11	9.2E-01	-0.18	0.17	4E-03	0.03	3	-0.066	4.6E-01	0.28	0.17	5
2006	-0.283	-1.03	3.8E-01	-1.89	1.32	0.009	0.43	6.9E-01	-0.11	0.12	0.26	0.04	3	-0.512	1.9E-01	-0.03	0.07	5
2007	-0.334*	-4.15	2.5E-02	-0.80	0.14	-0.072	-1.46	2.4E-01	-0.36	0.22	0.85	0.07	3	-0.923*	1.3E-02	0.46	0.46	5
2008	-1.085**	-13.43	8.9E-04	-1.56	-0.61	0.517*	4.09	2.6E-02	-0.22	1.26	0.98	0.10	3	-0.992**	4.5E-04	1.48	0.59	5

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The sample consists of a maximum of 5 observations per yearly regression from the 5 banks in the LSE that adopted the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table V.3 (Continued)

PANEL D

Cross-Sectional Regression Analysis for the Secondary Sample Total Liabilities to Market Price Relative Delta ($dL_{t-1,t}$ - $dM_{t-1,t}$) and Historical Value-at-Risk Actual (V_t)

Year	Regression													Correlation		Descriptive Statistics		*Obs.*
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	-0.376**	-3.95	4.2E-03	-0.69	-0.06	0.082	1.88	9.7E-02	-0.06	0.23	0.66	0.14	8	-0.813**	2.1E-03	0.05	0.48	10
1995	-0.067	-0.47	6.5E-01	-0.54	0.41	-0.164	-2.18	6.1E-02	-0.42	0.09	0.03	0.24	8	-0.165	3.2E-01	0.05	0.56	10
1996	-0.049	-0.23	8.3E-01	-0.75	0.66	-0.024	-0.39	7.1E-01	-0.22	0.18	0.01	0.20	9	-0.075	4.1E-01	0.01	0.30	11
1997	-0.095	-0.58	5.7E-01	-0.63	0.44	-0.030	-0.65	5.3E-01	-0.18	0.12	0.04	0.11	9	-0.191	2.9E-01	-0.20	0.21	11
1998	-0.242	-1.84	9.9E-02	-0.67	0.19	1.3E-04	3E-03	9.97E-01	-0.12	0.12	0.27	0.13	9	-0.522*	5.0E-02	0.03	0.30	11
1999	-0.139	-1.28	2.3E-01	-0.49	0.21	-0.143*	-2.72	2.3E-02	-0.31	0.03	0.15	0.14	9	-0.393	1.2E-01	-0.29	0.41	11
2000	-0.166	-1.08	3.1E-01	-0.67	0.33	-0.074	-0.74	4.8E-01	-0.40	0.25	0.11	0.32	9	-0.338	1.5E-01	-0.12	0.67	11
2001	-0.164	-1.43	1.9E-01	-0.54	0.21	-0.298**	-4.80	9.8E-04	-0.50	-0.10	0.18	0.15	9	-0.430	9.3E-02	0.36	0.42	11
2002	-0.534**	-6.31	1.4E-04	-0.81	-0.26	-0.214**	-3.92	3.5E-03	-0.39	-0.04	0.82	0.13	9	-0.903**	7.0E-05	0.45	0.48	11
2003	0.168	0.39	7.1E-01	-1.23	1.57	-0.545*	-2.84	2.0E-02	-1.17	0.08	0.02	0.57	9	0.129	3.5E-01	-0.20	0.42	11
2004	0.034	0.08	9.4E-01	-1.32	1.39	-0.109	-1.18	2.7E-01	-0.41	0.19	7E-04	0.29	9	0.027	4.7E-01	-0.06	0.22	11
2005	-0.012	-0.14	8.9E-01	-0.30	0.27	0.024	0.74	4.8E-01	-0.08	0.13	2E-03	0.10	9	-0.046	4.5E-01	0.10	0.37	11
2006	-0.127	-1.12	2.9E-01	-0.50	0.24	0.067	1.41	1.9E-01	-0.09	0.22	0.12	0.15	9	-0.351	1.4E-01	-0.13	0.42	11
2007	-0.239*	-2.66	2.6E-02	-0.53	0.05	-0.018	-0.40	7.0E-01	-0.17	0.13	0.44	0.14	9	-0.663*	1.3E-02	0.18	0.50	11
2008	-1.12**	-11.01	1.6E-06	-1.45	-0.79	-0.100	-1.50	1.7E-01	-0.32	0.12	0.93	0.17	9	-0.965**	8.0E-07	0.42	0.52	11

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The sample consists of a maximum of 11 observations per yearly regression from 11 banking related firms in the LSE that adopted the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Analysis

The Table V.3 cross-sectional regression slopes show that the total liabilities to market price relative delta variable exhibits varying levels of statistically significant explanatory power to the Historical Value-at-Risk Actual variable for the samples and the control group.

The Primary and Secondary sample shows statistical significance for the years: 1994, 2000, 2002, 2007 and 2008. The Control group shows statistical significance for the years: 1995, 1996 and 1998.

V.4 Regressions for Net income to Market Price Relative Delta and Historical Value-at-Risk Actual

The regression analysis for the net income to market price relative delta and Historical Value-at-Risk Actual is presented for the time range 1994 to 2008 in Table V.4. In the regressions, the Historical Value-at-Risk Actual variable is tested as the dependent variable, and the net income to market price relative delta variable is tested as the independent variable.

Table V.4 Cross-Sectional Regression Analysis for Net Income to Market Price Relative Delta and Historical Value-at-Risk Actual

Cross-Sectional Regression

Table V.4 Panel A to Panel D show the results for the cross-sectional regressions that test the net income to market price relative delta and Historical Value-at-Risk Actual by applying the regression specified in equation (O.28). In this table, Panel A presents results for the Primary and Secondary sample; Panel B presents results for the Control group; Panel C presents results for the Primary sample; and, Panel D presents results for the Secondary sample.

Cross-Sectional Regression Table Description

The Table V.4 columns represent the following:

Year is the *panel data* year represented by the number of days from 1st January to 31st December, and also represents the 31st December variable record date for each year.
The Regression column presents the coefficients and related statistics for the regression specified in equation (O.28), and follows the model:

$$V_{i,t} = a + b\,(dI - dM)_{i,t} + e_{i,t}$$

Where: $V_{i,t}$ is the Value-at-Risk (V_t) for the i^{th} firm at time t, $(dI - dM)_{i,t}$ is the Net Income to Market Price Relative Delta $(dI_{t-1,t} - dM_{t-1,t})$ for the i^{th} firm at time t, and $e_{i,t}$ is the regression error term. The *Lower* and *Upper* are the corresponding coefficient levels predicted at a 99% confidence level.

The Correlation column presents the correlation statistics for the relationship between the dependent and independent variables. The Descriptive Statistics column presents for the independent variable, the sample mean calculated using equation (O.17) and the sample standard deviation, *SD*, using equation (O.18). The *Obs.* column presents the number of sample firms observed for the year.

Table V.4 (Continued)

PANEL A

Cross-Sectional Regression Analysis for the Primary and Secondary Sample Net Income to Market Price Relative Delta ($dI_{t-1,t}$ - $dM_{t-1,t}$) and Historical Value-at-Risk Actual (V_t)

Year	Regression													Correlation		Descriptive Statistics		*Obs.*
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	0.019	0.28	7.9E-01	-0.19	0.23	0.033	0.52	6.1E-01	-0.16	0.23	0.01	0.22	12	0.080	3.9E-01	0.36	0.91	14
1995	-0.13**	-3.20	7.6E-03	-0.25	-0.01	-0.145**	-3.36	5.7E-03	-0.28	-0.01	0.46	0.16	12	-0.679**	3.8E-03	0.29	1.06	14
1996	-0.089	-0.65	5.3E-01	-0.50	0.32	0.036	0.61	5.5E-01	-0.14	0.21	0.03	0.18	13	-0.176	2.7E-01	0.25	0.36	15
1997	-0.035	-0.37	7.1E-01	-0.32	0.25	-0.003	-0.07	9.4E-01	-0.13	0.12	0.01	0.12	13	-0.103	3.6E-01	-0.29	0.35	15
1998	0.063	0.65	5.3E-01	-0.23	0.35	-0.124	-1.62	1.3E-01	-0.35	0.11	0.03	0.27	13	0.177	2.6E-01	0.31	0.75	15
1999	-0.053	-1.04	3.2E-01	-0.21	0.10	-0.11**	-3.25	5.8E-03	-0.21	-0.01	0.07	0.13	14	-0.268	1.6E-01	-0.05	0.68	16
2000	-0.144	-1.46	1.7E-01	-0.44	0.15	-0.136	-1.81	9.1E-02	-0.36	0.09	0.13	0.30	14	-0.364	8.3E-02	-4E-03	0.78	16
2001	0.001	0.01	9.96E-01	-0.38	0.38	-0.296**	-6.01	3.2E-05	-0.44	-0.15	2E-06	0.19	14	0.001	5.0E-01	-0.08	0.39	16
2002	-0.016	-0.24	8.1E-01	-0.22	0.19	-0.41**	-6.26	2.1E-05	-0.61	-0.22	4E-03	0.25	14	-0.064	4.1E-01	0.24	0.96	16
2003	0.036**	6.87	7.7E-06	0.02	0.05	-0.411**	-6.82	8.3E-06	-0.59	-0.23	0.77	0.23	14	0.878**	3.9E-06	-2.99	11.5	16
2004	0.001	0.02	9.9E-01	-0.17	0.17	-0.090	-1.49	1.6E-01	-0.27	0.09	2E-05	0.24	14	0.005	4.9E-01	0.17	1.11	16
2005	0.002	1.86	8.4E-02	-1.1E-03	4.6E-03	0.005	0.27	7.9E-01	-0.05	0.06	0.20	0.08	14	0.445*	4.2E-02	4.61	20.6	16
2006	0.017	1.89	8.0E-02	-0.01	0.04	0.047	1.50	1.6E-01	-0.05	0.14	0.20	0.12	14	0.451*	4.0E-02	0.98	3.47	16
2007	-3.3E-04	-0.01	9.9E-01	-0.08	0.08	-0.112*	-2.17	4.8E-02	-0.27	0.04	1E-05	0.19	14	-0.003	5.0E-01	0.69	1.85	16
2008	0.037	0.33	7.4E-01	-0.29	0.36	-0.72**	-4.25	8.1E-04	-1.22	-0.22	0.01	0.67	14	0.089	3.7E-01	-0.27	1.57	16

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The sample consists of a maximum of 16 observations per yearly regression from 16 firms in the LSE consisting of the 5 banks and 11 banking related firms that adopted the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table V.4 (Continued)

PANEL B

Cross-Sectional Regression Analysis for the Control Group Net Income to Market Price Relative Delta ($dI_{t-1,t}$ - $dM_{t-1,t}$) and Historical Value-at-Risk Actual (V_t)

	Regression													Correlation		Descriptive Statistics		
Year	Slope					Intercept					Model							*Obs.*
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	-0.119	-1.52	1.6E-01	-0.37	0.13	-0.09**	-3.84	4.0E-03	-0.17	-0.01	0.20	0.08	9	-0.453	8.1E-02	0.06	0.31	11
1995	-0.104	-0.42	6.8E-01	-0.90	0.69	-0.19**	-5.14	6.1E-04	-0.31	-0.07	0.02	0.12	9	-0.139	3.4E-01	-0.02	0.16	11
1996	0.152	0.86	4.1E-01	-0.41	0.71	-0.042	-0.97	3.5E-01	-0.18	0.10	0.07	0.14	10	0.263	2.0E-01	0.07	0.24	12
1997	-0.616**	-4.90	6.3E-04	-1.02	-0.22	-0.074*	-2.38	3.9E-02	-0.17	0.02	0.71	0.11	10	-0.84**	3.1E-04	-0.04	0.25	12
1998	-0.322**	-10.20	1.3E-06	-0.42	-0.22	-0.126**	-5.52	2.5E-04	-0.20	-0.05	0.91	0.07	10	-0.955**	6.6E-07	0.35	0.66	12
1999	-0.005	-0.17	8.7E-01	-0.09	0.08	-0.178	-2.13	5.9E-02	-0.44	0.09	3E-03	0.26	10	-0.054	4.3E-01	-1.26	2.93	12
2000	-0.369*	-2.91	1.6E-02	-0.77	0.03	0.001	0.02	9.8E-01	-0.16	0.17	0.46	0.18	10	-0.677**	7.8E-03	0.05	0.43	12
2001	-0.019	-0.32	7.5E-01	-0.20	0.17	-0.299**	-7.17	3.0E-05	-0.43	-0.17	0.01	0.14	10	-0.102	3.8E-01	0.18	0.73	12
2002	-0.099	-1.63	1.3E-01	-0.29	0.09	-0.388**	-18.04	5.9E-09	-0.46	-0.32	0.21	0.07	10	-0.458	6.7E-02	-0.05	0.37	12
2003	-0.084	-0.41	6.9E-01	-0.74	0.57	-0.467**	-12.19	2.5E-07	-0.59	-0.35	0.02	0.09	10	-0.127	3.5E-01	-0.13	0.13	12
2004	-0.078	-1.32	2.2E-01	-0.26	0.11	-0.005	-0.24	8.2E-01	-0.07	0.06	0.15	0.07	10	-0.386	1.1E-01	0.03	0.36	12
2005	0.132	1.38	2.0E-01	-0.17	0.44	0.087*	2.89	1.6E-02	-0.01	0.18	0.16	0.07	10	0.401	9.8E-02	-0.23	0.23	12
2006	-0.339**	-4.34	1.5E-03	-0.59	-0.09	0.084*	2.84	1.7E-02	-0.01	0.18	0.65	0.10	10	-0.808**	7.3E-04	0.09	0.38	12
2007	-0.301**	-8.81	5.0E-06	-0.41	-0.19	-0.045*	-2.80	1.9E-02	-0.10	0.01	0.89	0.06	10	-0.941**	2.5E-06	0.02	0.49	12
2008	-0.016	-1.03	3.3E-01	-0.06	0.03	-0.439**	-7.64	1.7E-05	-0.62	-0.26	0.10	0.18	10	-0.309	1.6E-01	1.59	3.57	12

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The Control group consists of a maximum of 12 observations per yearly regression from 12 banking related firms in the LSE that did not adopt the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table V.4 (Continued)

PANEL C

Cross-Sectional Regression Analysis for the Primary Sample Net Income to Market Price Relative Delta ($dI_{t-1,t}$ - $dM_{t-1,t}$) and Historical Value-at-Risk Actual (V_t)

Year	Regression													Correlation		Descriptive Statistics		*Obs.*
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	0.041	0.31	7.8E-01	-1.25	1.33	-0.069	-0.34	7.6E-01	-2.08	1.94	0.05	0.25	2	0.217	3.9E-01	1.23	1.10	4
1995	-0.282	-1.35	3.1E-01	-2.35	1.79	-0.208	-3.24	8.4E-02	-0.85	0.43	0.48	0.13	2	-0.691	1.5E-01	0.05	0.35	4
1996	-0.213	-0.63	6.0E-01	-3.59	3.16	0.123	3.70	6.6E-02	-0.21	0.45	0.16	0.06	2	-0.405	3.0E-01	0.02	0.11	4
1997	-0.383	-2.23	1.6E-01	-2.09	1.32	-0.087	-1.03	4.1E-01	-0.93	0.75	0.71	0.11	2	-0.844	7.8E-02	-0.38	0.37	4
1998	0.725	1.78	2.2E-01	-3.32	4.77	-0.421	-2.94	9.9E-02	-1.84	1.00	0.61	0.28	2	0.783	1.1E-01	0.07	0.40	4
1999	-0.201	-1.15	3.3E-01	-1.22	0.82	-0.153	-2.42	9.5E-02	-0.52	0.22	0.31	0.12	3	-0.554	1.7E-01	-0.18	0.35	5
2000	-0.076	-0.25	8.2E-01	-1.84	1.69	-0.278	-1.65	2.0E-01	-1.26	0.71	0.02	0.22	3	-0.143	4.1E-01	0.45	0.36	5
2001	0.493	0.81	4.8E-01	-3.05	4.04	-0.146	-1.65	2.0E-01	-0.66	0.37	0.18	0.19	3	0.424	2.4E-01	-0.03	0.16	5
2002	-0.648*	-3.70	3.4E-02	-1.67	0.37	-0.539**	-8.66	3.2E-03	-0.90	-0.18	0.82	0.05	3	-0.906*	1.7E-02	-0.33	0.14	5
2003	-0.224*	-3.68	3.5E-02	-0.58	0.13	-0.282*	-4.79	1.7E-02	-0.63	0.06	0.82	0.12	3	-0.905*	1.7E-02	0.45	0.96	5
2004	-0.008	-0.25	8.2E-01	-0.19	0.17	-0.042	-1.09	3.6E-01	-0.26	0.18	0.02	0.08	3	-0.142	4.1E-01	0.50	1.25	5
2005	-0.024	-0.42	7.0E-01	-0.36	0.31	-4.5E-04	-0.02	9.8E-01	-0.12	0.12	0.06	0.03	3	-0.237	3.5E-01	0.25	0.28	5
2006	-0.035	-0.28	8.0E-01	-0.77	0.70	0.016	0.79	4.9E-01	-0.11	0.14	0.02	0.05	3	-0.157	4.0E-01	-0.02	0.19	5
2007	-0.568	-1.74	1.8E-01	-2.48	1.34	-0.078	-0.75	5.1E-01	-0.69	0.53	0.50	0.14	3	-0.708	9.1E-02	0.26	0.21	5
2008	0.129	1.15	3.3E-01	-0.53	0.78	-1.009*	-3.53	3.9E-02	-2.68	0.66	0.31	0.62	3	0.553	1.7E-01	-0.58	2.78	5

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The sample consists of a maximum of 5 observations per yearly regression from the 5 banks in the LSE that adopted the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Table V.4 (Continued)

PANEL D

Cross-Sectional Regression Analysis for the Sample Net Income to Market Price Relative Delta ($dI_{t-1,t}$ - $dM_{t-1,t}$) and Historical Value-at-Risk Actual (V_t)

Year	Regression													Correlation		Descriptive Statistics		*Obs.*
	Slope					Intercept					Model							
	b	*t(b)*	*p(b)*	*Lower*	*Upper*	*a*	*t(a)*	*p(a)*	*Lower*	*Upper*	R^2	*s(e)*	*df(e)*	*r*	*p(r)*	*Mean*	*SD*	
1994	0.121	0.91	3.9E-01	-0.33	0.57	0.062	0.88	4.0E-01	-0.18	0.30	0.09	0.22	8	0.305	2.0E-01	0.01	0.56	10
1995	-0.133*	-2.99	1.7E-02	-0.28	0.02	-0.116	-2.09	7.0E-02	-0.30	0.07	0.53	0.17	8	-0.727**	8.6E-03	0.39	1.24	10
1996	-0.014	-0.08	9.3E-01	-0.57	0.54	-0.019	-0.23	8.2E-01	-0.29	0.25	8E-04	0.20	9	-0.028	4.7E-01	0.33	0.38	11
1997	0.091	1.01	3.4E-01	-0.20	0.38	0.013	0.34	7.5E-01	-0.11	0.14	0.10	0.10	9	0.318	1.7E-01	-0.26	0.36	11
1998	-0.029	-0.53	6.1E-01	-0.21	0.15	0.005	0.09	9.3E-01	-0.15	0.16	0.03	0.14	9	-0.175	3.0E-01	0.40	0.84	11
1999	-0.044	-0.75	4.7E-01	-0.24	0.15	-0.103*	-2.31	4.7E-02	-0.25	0.04	0.06	0.15	9	-0.243	2.4E-01	0.01	0.79	11
2000	-0.098	-0.79	4.5E-01	-0.50	0.31	-0.075	-0.72	4.9E-01	-0.41	0.26	0.06	0.33	9	-0.253	2.3E-01	-0.21	0.85	11
2001	-0.044	-0.38	7.1E-01	-0.42	0.33	-0.362**	-7.00	6.3E-05	-0.53	-0.19	0.02	0.17	9	-0.126	3.6E-01	-0.10	0.46	11
2002	0.018	0.20	8.4E-01	-0.27	0.31	-0.465**	-4.64	1.2E-03	-0.79	-0.14	5E-03	0.30	9	0.068	4.2E-01	0.50	1.07	11
2003	0.036**	6.90	7.0E-05	0.02	0.05	-0.415**	-5.70	3.0E-04	-0.65	-0.18	0.84	0.23	9	0.917**	3.5E-05	-4.56	13.8	11
2004	-0.004	-0.04	9.7E-01	-0.29	0.28	-0.111	-1.25	2.4E-01	-0.40	0.18	2E-04	0.29	9	-0.014	4.8E-01	0.02	1.06	11
2005	0.002	1.46	1.8E-01	5.5E-03	0.01	0.011	0.39	7.1E-01	-0.08	0.11	0.19	0.09	9	0.438	8.9E-02	6.59	24.9	11
2006	0.016	1.43	1.9E-01	-0.02	0.05	0.062	1.33	2.2E-01	-0.09	0.21	0.18	0.14	9	0.430	9.4E-02	1.43	4.16	11
2007	-0.005	-0.20	8.4E-01	-0.09	0.08	-0.056	-0.92	3.8E-01	-0.26	0.14	5E-03	0.19	9	-0.068	4.2E-01	0.89	2.24	11
2008	-0.655**	-3.74	4.6E-03	-1.22	-0.09	-0.651**	-5.30	4.9E-04	-1.05	-0.25	0.61	0.40	9	-0.78**	2.3E-03	-0.13	0.72	11

Panel notes: **, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels. The sample consists of a maximum of 11 observations per yearly regression from 11 banking related firms in the LSE that adopted the IFRS standards in 2005. The regressions are from 1994 to 2008. See main table notes for the regression model applied. Regression coefficients and related statistics are calculated using OLS regression.

Analysis

The Table V.4 cross-sectional regression slopes show that the net income to market price relative delta variable exhibits varying levels of statistically significant explanatory power to the Historical Value-at-Risk Actual variable for the samples and the control group.

The Primary and Secondary sample shows statistical significance for the years: 1995 and 2003. The Control group shows statistical significance for the years: 1997, 1998, 2000, 2006 and 2007.

V.5 Regressions for the UK Banks Relative Delta and Historical Value-at-Risk Actual

For the UK banks, the analysis and detailed results for the *accounting total to market price relative delta* and the *Historical Value-at-Risk Actual* time series regressions are presented in this section. The regression analysis is conducted within the time range 1994 to 2008.

V.5.1 Regressions for HSBC Holdings PLC Relative Delta and Historical Value-at-Risk Actual

The HSBC Holdings PLC regression analysis for the relative delta and Historical Value-at-Risk Actual is presented for the time range 1994 to 2008 in Table V.5. In the regressions, the Historical Value-at-Risk Actual variable is tested as the dependent variable, and the relative delta variable is tested as the independent variable.

Table V.5 Time Series Regression Analysis for HSBC Holdings PLC Relative Delta and Historical Value-at-Risk Actual

Time Series Regression

Table V.5 Panel A to Panel D show the results for the time series regressions that test the relative delta and Historical Value-at-Risk Actual by applying the regression specified in equation (3.56). In this table, Panel A presents results for the total equity to market price relative delta and Historical Value-at-Risk Actual regression; Panel B presents results for the total assets to market price relative delta and Historical Value-at-Risk Actual regression; Panel C presents results for the total liabilities to market price relative delta and Historical Value-at-Risk Actual regression; and, Panel D presents results for the net income to market price relative delta and Historical Value-at-Risk Actual regression.

Time Series Regression Table Description

The Table V.5 columns represent the following:

The Total Period column represents the time series regression results for the year range 1994 to 2008, with a single year represented from 1st January to 31st December, and a 31st December variable record date. The Sub-Periods column represents the time series regression results for the year range 1994 to 2004, and for 1994 to 2007, with a single year represented from 1st January to 31st December, and a 31st December variable record date.

The Measure column represents the time series regression results for the total and sub-time periods and is represented by the following data panels:

The *Regression* panel presents the coefficients and related statistics for the regression specified in equation (3.56), and follows the model:

$$V_{\mathrm{t}} = a + b\ (dAC - dM)_t + e_t$$

Where: V_t is the Value-at-Risk (V_{t}) at time t, $(dAC - dM)_t$ is the Accounting Total to Market Price Relative Delta ($dAC_{t-1,t} - dM_{t-1,t}$) at time t, and e_t is the regression error term. The *Lower* and *Upper* are the corresponding coefficient levels predicted at a 99% confidence level.

The *Correlation* panel presents the correlation statistics for the relationship between the dependent and independent variables. The *Descriptive Statistics* panel presents for the variables tested, the average sample means calculated using equation (M.6); the standard deviation, *SD*, of sample means for the time series using equation (M.7); and, the standard error of means, *SE*, for the time series. *The Observations* panel presents: *Firms (n)* that represents the one firm in the time series regression; *Years (T)* represents the number of time series years; *Total (n* x *T)* represents the number of pooled time series regression observations.

Correlation R^2 Check panel presents: *r(dAC-dM, e)* that represents the correlation test results for the coefficient of determination R^2 estimated by equation (M.22); *p(r)* represents the probability significance level for the correlation coefficient *r(dAC-dM, e),* and is calculated by applying equation (M.15) ; *Years (T)* represents the number of time series years.

Table V.5 (Continued)

PANEL A

Time Series Regression Analysis for HSBC Holdings PLC Total Equity to Market Price Relative Delta ($dE_{t-1,t}$ - $dM_{t-1,t}$) and Historical Value-at-Risk Actual (V_t)

Measure			Total Period 1994-2008	Sub-Periods 1994-2004	Sub-Periods 1994-2007
Regression	*Slope*	*b*	-0.350	-0.355	-0.345
		t (b)	-1.928	-1.691	-1.820
		p (b)	7.6E-02	1.3E-01	9.4E-02
		SE(b)	0.182	0.210	0.190
		Lower	-0.897	-1.038	-0.925
		Upper	0.197	0.328	0.234
	Intercept	*a*	-0.110	-0.137	-0.108
		t (a)	-2.110	-2.059	-1.951
		p (a)	5.5E-02	7.0E-02	7.5E-02
		SE(a)	0.052	0.067	0.055
		Lower	-0.268	-0.353	-0.277
		Upper	0.047	0.079	0.061
	Model	R^2	0.222	0.241	0.216
		s(e)	0.184	0.209	0.192
		df(e)	13	9	12
Correlation		*r*	-0.471*	-0.491	-0.465*
		p(r)	3.8E-02	6.3E-02	4.7E-02
Descriptive Statistics		*dE-dM*	0.119	0.102	0.111
		SD (dE-dM)	0.271	0.314	0.280
		SE(dE-dM)	0.070	0.095	0.075
		V 95	-0.152	-0.173	-0.146
		SD (V 95)	0.201	0.227	0.208
		SE(V 95)	0.052	0.069	0.056
Observations		*Firm Count (n)*	1	1	1
		Years (T)	15	11	14
		Total (n x T)	15	11	14
Correlation R^2 Check		*r (dAC-dM, e)*	-2.5E-09	-2.1E-09	1.6E-10
		p(r)	-	-	-
		Years (T)	15	11	14

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.
The model applied is $V_t = a + b\ (dE - dM)_t + e_t$ where: V_t is the Value-at-Risk (V_t) at time t, $(dE - dM)_t$ is the Total Equity to Market Price Relative Delta $(dE_{t-1,1} - dM_{t-1,1})$ at time t, and e_t is the regression error term. Regression coefficients and related statistics are calculated using OLS regression.

Table V.5 (Continued)

PANEL B

Time Series Regression Analysis for HSBC Holdings PLC Total Assets to Market Price Relative Delta ($dA_{t-1,t}$ - $dM_{t-1,t}$) and Historical Value-at-Risk Actual (V_t)

Measure			Total Period 1994-2008	Sub-Periods 1994-2004	Sub-Periods 1994-2007
Regression	*Slope*	*b*	-0.290	-0.491	-0.354
		t (b)	-1.539	-1.900	-1.521
		p (b)	1.5E-01	9.0E-02	1.5E-01
		SE(b)	0.189	0.259	0.233
		Lower	-0.858	-1.332	-1.064
		Upper	0.278	0.349	0.357
	Intercept	*a*	-0.124*	-0.166*	-0.126*
		t (a)	-2.354	-2.707	-2.316
		p (a)	3.5E-02	2.4E-02	3.9E-02
		SE(a)	0.053	0.061	0.055
		Lower	-0.283	-0.364	-0.293
		Upper	0.035	0.033	0.040
	Model	R^2	0.154	0.286	0.162
		s(e)	0.192	0.202	0.198
		df(e)	13	9	12
Correlation		*r*	-0.393	-0.535*	-0.402
		p(r)	7.4E-02	4.5E-02	7.7E-02
Descriptive Statistics		*dA-dM*	0.095	0.016	0.057
		SD (dA-dM)	0.272	0.248	0.236
		SE(dA-dM)	0.070	0.075	0.063
		V 95	-0.152	-0.173	-0.146
		SD (V 95)	0.201	0.227	0.208
		SE(V 95)	0.052	0.069	0.056
Observations		*Firm Count (n)*	1	1	1
		Years (T)	15	11	14
		Total (n x T)	15	11	14
Correlation R^2 Check		*r (dAC-dM, e)*	1.1E-09	2.4E-09	6.0E-09
		p(r)	-	-	-
		Years (T)	15	11	14

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.
The model applied is $V_t = a + b\,(dA - dM)_t + e_t$ where: V_t is the Value-at-Risk (V_t) at time t, $(dA - dM)_t$ is the Total Assets to Market Price Relative Delta $(dA_{t-1,1} - dM_{t-1,1})$ at time t, and e_t is the regression error term. Regression coefficients and related statistics are calculated using OLS regression.

Table V.5 (Continued)

PANEL C

Time Series Regression Analysis for HSBC Holdings PLC Total Liabilities to Market Price Relative Delta ($dL_{t-1,t}$ - $dM_{t-1,t}$) and Historical Value-at-Risk Actual (V_t)

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	-0.282	-0.500	-0.349
		t (b)	-1.505	-1.917	-1.493
		p (b)	1.6E-01	8.7E-02	1.6E-01
		SE(b)	0.188	0.261	0.234
		Lower	-0.848	-1.349	-1.064
		Upper	0.283	0.348	0.365
	Intercept	*a*	-0.125*	-0.167*	-0.127*
		t (a)	-2.354	-2.734	-2.316
		p (a)	3.5E-02	2.3E-02	3.9E-02
		SE(a)	0.053	0.061	0.055
		Lower	-0.284	-0.365	-0.294
		Upper	0.035	0.031	0.040
	Model	R^2	0.148	0.290	0.157
		s(e)	0.193	0.202	0.199
		df(e)	13	9	12
Correlation		*r*	-0.385	-0.538*	-0.396
		p(r)	7.8E-02	4.4E-02	8.1E-02
Descriptive Statistics		*dL-dM*	0.096	0.013	0.056
		SD (dL-dM)	0.275	0.245	0.235
		SE(dL-dM)	0.071	0.074	0.063
		V 95	-0.152	-0.173	-0.146
		SD (V 95)	0.201	0.227	0.208
		SE(V 95)	0.052	0.069	0.056
Observations		*Firm Count (n)*	1	1	1
		Years (T)	15	11	14
		Total (n x T)	15	11	14
Correlation R^2 Check		*r (dAC-dM, e)*	-6.1E-09	-1.9E-09	-5.4E-09
		p(r)	-	-	-
		Years (T)	15	11	14

Panel notes:

**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.

The model applied is $V_t = a + b\,(dL - dM)_t + e_t$ where: V_t is the Value-at-Risk (V_t) at time t, $(dL - dM)_t$ is the Total Liabilities to Market Price Relative Delta $(dL_{t-1,1} - dM_{t-1,1})$ at time t, and e_t is the regression error term.

Regression coefficients and related statistics are calculated using OLS regression.

Table V.5 (Continued)

PANEL D

Time Series Regression Analysis for HSBC Holdings PLC Net Income to Market Price Relative Delta ($dI_{t-1,t}$ - $dM_{t-1,t}$) and Historical Value-at-Risk Actual (V_t)

Measure			Total Period 1994-2008	Sub-Periods 1994-2004	Sub-Periods 1994-2007
Regression	*Slope*	*b*	-0.011	-0.150	-0.074
		t (b)	-0.085	-0.662	-0.425
		p (b)	9.3E-01	5.2E-01	6.8E-01
		SE(b)	0.130	0.227	0.175
		Lower	-0.403	-0.887	-0.609
		Upper	0.381	0.587	0.460
	Intercept	*a*	-0.152*	-0.171*	-0.142*
		t (a)	-2.816	-2.417	-2.433
		p (a)	1.5E-02	3.9E-02	3.2E-02
		SE(a)	0.054	0.071	0.058
		Lower	-0.315	-0.400	-0.320
		Upper	0.011	0.059	0.036
	Model	R^2	0.001	0.046	0.015
		s(e)	0.209	0.234	0.215
		df(e)	13	9	12
Correlation		*r*	-0.023	-0.215	-0.122
		p(r)	4.7E-01	2.6E-01	3.4E-01
Descriptive Statistics		*dI-dM*	-0.012	0.017	0.060
		SD (dI-dM)	0.430	0.327	0.340
		SE(dI-dM)	0.111	0.098	0.091
		V 95	-0.152	-0.173	-0.146
		SD (V 95)	0.201	0.227	0.208
		SE(V 95)	0.052	0.069	0.056
Observations		*Firm Count (n)*	1	1	1
		Years (T)	15	11	14
		Total (n x *T)*	15	11	14
Correlation R^2 Check		*r (dAC-dM, e)*	1.1E-09	2.4E-09	6.0E-09
		p(r)	-	-	-
		Years (T)	15	11	14

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels.
The model applied is $V_t = a + b\,(dI - dM)_t + e_t$ where: V_t is the Value-at-Risk (V_t) at time t, $(dI - dM)_t$ is the Net Income to Market Price Relative Delta $(dI_{t-1,1} - dM_{t-1,1})$ at time t, and e_t is the regression error term. Regression coefficients and related statistics are calculated using OLS regression.

Analysis

For HSBC Holdings PLC, the Table V.5 time series regression slopes show that the accounting totals to market price relative delta variable does not exhibit statistically significant explanatory power to the Historical Value-at-Risk Actual variable.

These time series slopes suggest that the HSBC Holdings PLC relative delta variable did not react significantly to the Historical Value-at-Risk Actual variable before and after the 2005 accounting change.

The *Correlation R^2 Check* results in this table exhibit levels close to zero. This study considers these levels to signify a valid measure for the reported R^2. However, for this *Correlation R^2 Check* level it was not possible to decipher statistical levels of significance from the system used to produce this result.

V.5.2 Regressions for Barclays PLC Relative Delta and Historical Value-at-Risk Actual

The Barclays PLC regression analysis for the relative delta and Historical Value-at-Risk Actual is presented for the time range 1994 to 2008 in Table V.6. In the regressions, the Historical Value-at-Risk Actual variable is tested as the dependent variable, and the relative delta variable is tested as the independent variable.

Table V.6 Time Series Regression Analysis for Barclays PLC Relative Delta and Historical Value-at-Risk Actual

Time Series Regression

Table V.6 Panel A to Panel D show the results for the time series regressions that test the relative delta and Historical Value-at-Risk Actual by applying the regression specified in equation (3.56). In this table, Panel A presents results for the total equity to market price relative delta and Historical Value-at-Risk Actual regression; Panel B presents results for the total assets to market price relative delta and Historical Value-at-Risk Actual regression; Panel C presents results for the total liabilities to market price relative delta and Historical Value-at-Risk Actual regression; and, Panel D presents results for the net income to market price relative delta and Historical Value-at-Risk Actual regression.

Time Series Regression Table Description

The Table V.6 columns represent the following:

The Total Period column represents the time series regression results for the year range 1994 to 2008, with a single year represented from 1st January to 31st December, and a 31st December variable record date. The Sub-Periods column represents the time series regression results for the year range 1994 to 2004, and for 1994 to 2007, with a single year represented from 1st January to 31st December, and a 31st December variable record date.

The Measure column represents the time series regression results for the total and sub-time periods and is represented by the following data panels:

The *Regression* panel presents the coefficients and related statistics for the regression specified in equation (3.56), and follows the model:

$$V_t = a + b\,(dAC - dM)_t + e_t$$

Where: V_t is the Value-at-Risk (V_t) at time t, $(dAC - dM)_t$ is the Accounting Total to Market Price Relative Delta $(dAC_{t-1,t} - dM_{t-1,t})$ at time t, and e_t is the regression error term. The *Lower* and *Upper* are the corresponding coefficient levels predicted at a 99% confidence level.

The *Correlation* panel presents the correlation statistics for the relationship between the dependent and independent variables. The *Descriptive Statistics* panel presents for the variables tested, the average sample means calculated using equation (M.6); the standard deviation, *SD*, of sample means for the time series using equation (M.7); and, the standard error of means, *SE*, for the time series. *The Observations* panel presents: *Firms (n)* that represents the one firm in the time series regression; *Years (T)* represents the number of time series years; *Total (n x T)* represents the number of pooled time series regression observations.

Correlation R^2 Check panel presents: *r(dAC-dM, e)* that represents the correlation test results for the coefficient of determination R^2 estimated by equation (M.22); *p(r)* represents the probability significance level for the correlation coefficient *r(dAC-dM, e),* and is calculated by applying equation (M.15) ; *Years (T)* represents the number of time series years.

Table V.6 (Continued)

PANEL A

Time Series Regression Analysis for Barclays PLC Total Equity to Market Price Relative Delta ($dE_{t-1,t}$ - $dM_{t-1,t}$) and Historical Value-at-Risk Actual (V_t)

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	-0.594**	-0.396	-0.415*
		t (b)	-5.775	-1.757	-2.381
		p (b)	6.4E-05	1.1E-01	3.5E-02
		SE(b)	0.103	0.225	0.174
		Lower	-0.904	-1.127	-0.947
		Upper	-0.284	0.336	0.117
	Intercept	*a*	-0.118*	-0.133	-0.115*
		t (a)	-2.327	-2.158	-2.319
		p (a)	3.7E-02	5.9E-02	3.9E-02
		SE(a)	0.051	0.062	0.049
		Lower	-0.270	-0.334	-0.266
		Upper	0.035	0.067	0.036
	Model	R^2	0.720	0.255	0.321
		s(e)	0.188	0.205	0.184
		df(e)	13	9	12
Correlation		*r*	-0.848**	-0.505	-0.566*
		p(r)	3.2E-05	5.6E-02	1.7E-02
Descriptive Statistics		*dE-dM*	0.138	0.003	0.035
		SD (dE-dM)	0.488	0.288	0.293
		SE(dE-dM)	0.126	0.087	0.078
		V 95	-0.200	-0.135	-0.129
		SD (V 95)	0.342	0.225	0.214
		SE(V 95)	0.088	0.068	0.057
Observations		*Firm Count (n)*	1	1	1
		Years (T)	15	11	14
		Total (n x *T)*	15	11	14
Correlation R^2 Check		*r (dAC-dM, e)*	4.3E-09	-1.4E-09	-5.3E-09
		p(r)	-	-	-
		Years (T)	15	11	14

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.
The model applied is $V_t = a + b\ (dE - dM)_t + e_t$ where: V_t is the Value-at-Risk (V_t) at time t, $(dE - dM)_t$ is the Total Equity to Market Price Relative Delta ($dE_{t-1,1} - dM_{t-1,1}$) at time t, and e_t is the regression error term. Regression coefficients and related statistics are calculated using OLS regression.

Table V.6 (Continued)

PANEL B

Time Series Regression Analysis for Barclays PLC Total Assets to Market Price Relative Delta ($dA_{t-1,t}$ - $dM_{t-1,t}$) and Historical Value-at-Risk Actual (V_t)

Measure			Total Period 1994-2008	Sub-Periods 1994-2004	Sub-Periods 1994-2007
Regression	*Slope*	*b*	-0.545**	-0.494	-0.293
		t (b)	-4.731	-1.625	-1.461
		p (b)	3.9E-04	1.4E-01	1.7E-01
		SE(b)	0.115	0.304	0.201
		Lower	-0.892	-1.481	-0.906
		Upper	-0.198	0.494	0.320
	Intercept	*a*	-0.108	-0.142	-0.112
		t (a)	-1.841	-2.245	-1.988
		p (a)	8.9E-02	5.1E-02	7.0E-02
		SE(a)	0.059	0.063	0.056
		Lower	-0.285	-0.347	-0.284
		Upper	0.069	0.063	0.060
	Model	R^2	0.633	0.227	0.151
		s(e)	0.215	0.209	0.205
		df(e)	13	9	12
Correlation		*r*	-0.795**	-0.476	-0.389
		p(r)	2.0E-04	6.9E-02	8.5E-02
Descriptive Statistics		*dA-dM*	0.168	-0.014	0.060
		SD (dA-dM)	0.499	0.217	0.284
		SE(dA-dM)	0.129	0.066	0.076
		V 95	-0.200	-0.135	-0.129
		SD (V 95)	0.342	0.225	0.214
		SE(V 95)	0.088	0.068	0.057
Observations		*Firm Count (n)*	1	1	1
		Years (T)	15	11	14
		Total (n x T)	15	11	14
Correlation R^2 Check		*r (dAC-dM, e)*	-5.9E-09	-1.8E-08	1.1E-08
		p(r)	-	-	-
		Years (T)	15	11	14

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.
The model applied is $V_t = a + b\,(dA - dM)_t + e_t$ where: V_t is the Value-at-Risk (V_t) at time t, $(dA - dM)_t$ is the Total Assets to Market Price Relative Delta ($dA_{t-1,1} - dM_{t-1,1}$) at time t, and e_t is the regression error term. Regression coefficients and related statistics are calculated using OLS regression.

Table V.6 (Continued)

PANEL C

Time Series Regression Analysis for Barclays PLC Total Liabilities to Market Price Relative Delta ($dL_{t-1,t}$ - $dM_{t-1,t}$) and Historical Value-at-Risk Actual (V_t)

Measure			Total Period 1994-2008	Sub-Periods 1994-2004	Sub-Periods 1994-2007
Regression	*Slope*	*b*	-0.541**	-0.487	-0.287
		t (b)	-4.693	-1.599	-1.433
		p (b)	4.2E-04	1.4E-01	1.8E-01
		SE(b)	0.115	0.304	0.200
		Lower	-0.888	-1.476	-0.898
		Upper	-0.194	0.503	0.325
	Intercept	*a*	-0.108	-0.141	-0.112
		t (a)	-1.832	-2.234	-1.985
		p (a)	9.0E-02	5.2E-02	7.0E-02
		SE(a)	0.059	0.063	0.056
		Lower	-0.286	-0.347	-0.284
		Upper	0.070	0.064	0.060
	Model	R^2	0.629	0.221	0.146
		s(e)	0.216	0.210	0.206
		df(e)	13	9	12
Correlation		*r*	-0.793**	-0.470	-0.382
		p(r)	2.1E-04	7.2E-02	8.9E-02
Descriptive Statistics		*dL-dM*	0.169	-0.014	0.061
		SD (dL-dM)	0.501	0.218	0.285
		SE(dL-dM)	0.129	0.066	0.076
		V 95	-0.200	-0.135	-0.129
		SD (V 95)	0.342	0.225	0.214
		SE(V 95)	0.088	0.068	0.057
Observations		*Firm Count (n)*	1	1	1
		Years (T)	15	11	14
		Total (n x T)	15	11	14
Correlation R^2 Check		*r (dAC-dM, e)*	2.1E-09	2.2E-09	9.8E-09
		p(r)	-	-	-
		Years (T)	15	11	14

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.
The model applied is $V_t = a + b\,(dL - dM)_t + e_t$ where: V_t is the Value-at-Risk (V_t) at time t, $(dL - dM)_t$ is the Total Liabilities to Market Price Relative Delta $(dL_{t-1,1} - dM_{t-1,1})$ at time t, and e_t is the regression error term.
Regression coefficients and related statistics are calculated using OLS regression.

Table V.6 (Continued)

PANEL D

Time Series Regression Analysis for Barclays PLC Net Income to Market Price Relative Delta ($dI_{t-1,t}$ - $dM_{t-1,t}$) and Historical Value-at-Risk Actual (V_t)

Measure			Total Period 1994-2008	Sub-Periods 1994-2004	Sub-Periods 1994-2007
Regression	*Slope*	*b*	-0.159	-0.023	-0.024
		t (b)	-1.572	-0.279	-0.318
		p (b)	1.4E-01	7.9E-01	7.6E-01
		SE(b)	0.101	0.082	0.077
		Lower	-0.463	-0.289	-0.259
		Upper	0.145	0.243	0.210
	Intercept	*a*	-0.154	-0.130	-0.125
		t (a)	-1.728	-1.768	-2.040
		p (a)	1.1E-01	1.1E-01	6.4E-02
		SE(a)	0.089	0.073	0.061
		Lower	-0.422	-0.368	-0.312
		Upper	0.114	0.109	0.062
	Model	R^2	0.160	0.009	0.008
		s(e)	0.325	0.236	0.222
		df(e)	13	9	12
Correlation		*r*	-0.400	-0.093	-0.091
		p(r)	7.0E-02	3.9E-01	3.8E-01
Descriptive Statistics		*dI-dM*	0.291	0.211	0.193
		SD (dI-dM)	0.861	0.912	0.802
		SE(dI-dM)	0.222	0.275	0.214
		V 95	-0.200	-0.135	-0.129
		SD (V 95)	0.342	0.225	0.214
		SE(V 95)	0.088	0.068	0.057
Observations		*Firm Count (n)*	1	1	1
		Years (T)	15	11	14
		Total (n x T)	15	11	14
Correlation R^2 Check		*r (dAC-dM, e)*	2.8E-08	2.1E-08	-1.3E-08
		p(r)	-	-	-
		Years (T)	15	11	14

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels.
The model applied is $V_t = a + b\ (dI - dM)_t + e_t$ where: V_t is the Value-at-Risk (V_t) at time t, $(dI - dM)_t$ is the Net Income to Market Price Relative Delta $(dI_{t-1,1} - dM_{t-1,1})$ at time t, and e_t is the regression error term. Regression coefficients and related statistics are calculated using OLS regression.

Analysis

For Barclays PLC, the Table V.6 time series regression slopes show that the accounting totals to market price relative delta variable exhibits varying levels of statistically significant explanatory power to the Historical Value-at-Risk Actual variable.

The Table V.6 Panel A time series regression slope shows that before 2005, for the 1994 to 2004 time period, the total equity to market price relative delta variable does not show a statistically significant reaction to the Historical Value-at-Risk Actual variable. After 2005, the regression slope shows that for the 1994 to 2007 time period, a 1% change in the total equity to market price relative delta variable translates to nearly a 0.5% (-0.415) increase in the Historical Value-at-Risk Actual variable. The regression slope shows that for the 1994 to 2008 time period, a 1% change in the total equity to market price relative delta variable translates to nearly a 0.6% (-0.594) increase in the Historical Value-at-Risk Actual variable.

The Panel B time series regression slope shows that before 2005, for the 1994 to 2004 time period, the total assets to market price relative delta variable does not show a statistically significant reaction to the Historical Value-at-Risk Actual variable. After 2005, the regression slope shows that for the 1994 to 2008 time period, a 1% change in the total assets to market price relative delta variable translates to more than a 0.5% (-0.545) increase in the Historical Value-at-Risk Actual variable.

The Panel C time series regression slope shows that before 2005, for the 1994 to 2004 time period, the total liabilities to market price relative delta variable does not show a statistically significant reaction to the Historical Value-at-Risk Actual variable. After 2005, the regression slope shows that for the 1994 to 2008 time period, a 1% change in the total liabilities to market price relative delta variable translates to more than a 0.5% (-0.541) increase in the Historical Value-at-Risk Actual variable.

The Panel D time series regression slope shows that before and after 2005, the net income to market price relative delta variable does not show a statistically significant reaction to the Historical Value-at-Risk Actual variable.

These time series slopes suggest that the Barclays PLC relative delta variable reacted significantly to the Historical Value-at-Risk Actual variable after the 2005 accounting change. However, the net income to market price relative delta variable did not show a statistically significant reaction to the Historical Value-at-Risk Actual variable before and after 2005.

The *Correlation R^2 Check* results in this table exhibit levels close to zero. This study consider these levels to signify a valid measure for the reported R^2. However, for this *Correlation R^2 Check* level it was not possible to decipher statistical levels of significance from the system used to produce this result.

V.5.3 Regressions for The Royal Bank of Scotland Group PLC Relative Delta and Historical Value-at-Risk Actual

The Royal Bank of Scotland Group PLC regression analysis for the relative delta and Historical Value-at-Risk Actual is presented for the time range 1994 to 2008 in Table V.7. In the regressions, the Historical Value-at-Risk Actual variable is tested as the dependent variable, and the relative delta variable is tested as the independent variable.

Table V.7 Time Series Regression Analysis for The Royal Bank of Scotland Group PLC Relative Delta and Historical Value-at-Risk Actual

Time Series Regression

Table V.7 Panel A to Panel D show the results for the time series regressions that test the relative delta and Historical Value-at-Risk Actual by applying the regression specified in equation (3.56). In this table, Panel A presents results for the total equity to market price relative delta and Historical Value-at-Risk Actual regression; Panel B presents results for the total assets to market price relative delta and Historical Value-at-Risk Actual regression; Panel C presents results for the total liabilities to market price relative delta and Historical Value-at-Risk Actual regression; and, Panel D presents results for the net income to market price relative delta and Historical Value-at-Risk Actual regression.

Time Series Regression Table Description

The Table V.7 columns represent the following:

The Total Period column represents the time series regression results for the year range 1994 to 2008, with a single year represented from 1st January to 31st December, and a 31st December variable record date. The Sub-Periods column represents the time series regression results for the year range 1994 to 2004, and for 1994 to 2007, with a single year represented from 1st January to 31st December, and a 31st December variable record date.

The Measure column represents the time series regression results for the total and sub-time periods and is represented by the following data panels:

The *Regression* panel presents the coefficients and related statistics for the regression specified in equation (3.56), and follows the model:

$$V_{\mathrm{t}} = a + b\ (dAC - dM)_t + e_t$$

Where: V_t is the Value-at-Risk (V_{t}) at time t, $(dAC - dM)_t$ is the Accounting Total to Market Price Relative Delta ($dAC_{t-1,t} - dM_{t-1,t}$) at time t, and e_t is the regression error term. The *Lower* and *Upper* are the corresponding coefficient levels predicted at a 99% confidence level.

The *Correlation* panel presents the correlation statistics for the relationship between the dependent and independent variables. The *Descriptive Statistics* panel presents for the variables tested, the average sample means calculated using equation (M.6); the standard deviation, *SD*, of sample means for the time series using equation (M.7); and, the standard error of means, *SE*, for the time series. *The Observations* panel presents: *Firms (n)* that represents the one firm in the time series regression; *Years (T)* represents the number of time series years; *Total (n* x *T)* represents the number of pooled time series regression observations.

Correlation R^2 Check panel presents: *r(dAC-dM, e)* that represents the correlation test results for the coefficient of determination R^2 estimated by equation (M.22); *p(r)* represents the probability significance level for the correlation coefficient *r(dAC-dM, e),* and is calculated by applying equation (M.15) ; *Years (T)* represents the number of time series years.

Table V.7 (Continued)

PANEL A

Time Series Regression Analysis for The Royal Bank of Scotland Group PLC Total Equity to Market Price Relative Delta ($dE_{t-1,t}$ - $dM_{t-1,t}$) and Historical Value-at-Risk Actual (V_t)

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	-0.265*	-0.118*	-0.125*
		t (b)	-2.665	-2.887	-3.054
		p (b)	1.9E-02	1.8E-02	1.0E-02
		SE(b)	0.099	0.041	0.041
		Lower	-0.564	-0.251	-0.250
		Upper	0.034	0.015	2.9E-05
	Intercept	*a*	-0.101	-0.035	-0.054
		t (a)	-0.816	-0.666	-1.148
		p (a)	4.3E-01	5.2E-01	2.7E-01
		SE(a)	0.123	0.052	0.047
		Lower	-0.472	-0.205	-0.198
		Upper	0.271	0.135	0.090
	Model	R^2	0.353	0.481	0.437
		s(e)	0.443	0.167	0.169
		df(e)	13	9	12
Correlation		*r*	-0.594**	-0.693**	-0.661**
		p(r)	9.7E-03	9.0E-03	5.0E-03
Descriptive Statistics		*dE-dM*	0.464	0.363	0.345
		SD (dE-dM)	1.192	1.289	1.141
		SE(dE-dM)	0.308	0.389	0.305
		V 95	-0.224	-0.078	-0.097
		SD (V 95)	0.531	0.219	0.216
		SE(V 95)	0.137	0.066	0.058
Observations		*Firm Count (n)*	1	1	1
		Years (T)	15	11	14
		Total (n x T)	15	11	14
Correlation R^2 Check		*r (dAC-dM, e)*	-2.5E-09	4.7E-09	-4.7E-09
		p(r)	-	-	-
		Years (T)	15	11	14

Panel notes:

**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.

The model applied is $V_t = a + b\,(dE - dM)_t + e_t$ where: V_t is the Value-at-Risk (V_t) at time t, $(dE - dM)_t$ is the Total Equity to Market Price Relative Delta ($dE_{t-1,1} - dM_{t-1,1}$) at time t, and e_t is the regression error term. Regression coefficients and related statistics are calculated using OLS regression.

Table V.7 (Continued)

PANEL B

Time Series Regression Analysis for The Royal Bank of Scotland Group PLC Total Assets to Market Price Relative Delta ($dA_{t-1,t}$ - $dM_{t-1,t}$) and Historical Value-at-Risk Actual (V_t)

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	-0.694**	-0.365*	-0.345**
		t (b)	-7.134	-2.363	-3.431
		p (b)	7.7E-06	4.2E-02	5.0E-03
		SE(b)	0.097	0.154	0.101
		Lower	-0.986	-0.866	-0.653
		Upper	-0.401	0.137	-0.038
	Intercept	*a*	-0.005	-0.044	-0.036
		t (a)	-0.071	-0.775	-0.787
		p (a)	9.4E-01	4.6E-01	4.5E-01
		SE(a)	0.071	0.057	0.046
		Lower	-0.219	-0.228	-0.178
		Upper	0.209	0.140	0.105
	Model	R^2	0.797	0.383	0.495
		s(e)	0.248	0.182	0.160
		df(e)	13	9	12
Correlation		*r*	-0.892**	-0.619*	-0.704**
		p(r)	3.8E-06	2.1E-02	2.5E-03
Descriptive Statistics		*dA-dM*	0.315	0.093	0.177
		SD (dA-dM)	0.683	0.372	0.440
		SE(dA-dM)	0.176	0.112	0.118
		V 95	-0.224	-0.078	-0.097
		SD (V 95)	0.531	0.219	0.216
		SE(V 95)	0.137	0.066	0.058
Observations		*Firm Count (n)*	1	1	1
		Years (T)	15	11	14
		Total (n x T)	15	11	14
Correlation R^2 Check		*r (dAC-dM, e)*	-5.0E-09	-2.0E-09	-3.7E-09
		p(r)	-	-	-
		Years (T)	15	11	14

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.
The model applied is $V_t = a + b\ (dA - dM)_t + e_t$ where: V_t is the Value-at-Risk (V_t) at time t, $(dA - dM)_t$ is the Total Assets to Market Price Relative Delta ($dA_{t-1,1} - dM_{t-1,1}$) at time t, and e_t is the regression error term. Regression coefficients and related statistics are calculated using OLS regression.

Table V.7 (Continued)

PANEL C

Time Series Regression Analysis for The Royal Bank of Scotland Group PLC Total Liabilities to Market Price Relative Delta ($dL_{t\text{-}1,t}$ - $dM_{t\text{-}1,t}$) and Historical Value-at-Risk Actual (V_t)

Measure			Total Period 1994-2008	Sub-Periods 1994-2004	Sub-Periods 1994-2007
Regression	*Slope*	*b*	-0.691**	-0.363*	-0.343**
		t (b)	-7.132	-2.303	-3.358
		p (b)	7.7E-06	4.7E-02	5.7E-03
		SE(b)	0.097	0.158	0.102
		Lower	-0.983	-0.876	-0.654
		Upper	-0.399	0.149	-0.031
	Intercept	*a*	-0.005	-0.044	-0.037
		t (a)	-0.067	-0.775	-0.786
		p (a)	9.5E-01	4.6E-01	4.5E-01
		SE(a)	0.071	0.057	0.047
		Lower	-0.219	-0.230	-0.180
		Upper	0.209	0.141	0.106
	Model	R^2	0.796	0.371	0.484
		s(e)	0.249	0.183	0.161
		df(e)	13	9	12
Correlation		*r*	-0.892**	-0.609*	-0.696**
		p(r)	3.8E-06	2.3E-02	2.8E-03
Descriptive Statistics		*dL-dM*	0.316	0.092	0.177
		SD (dL-dM)	0.685	0.368	0.439
		SE(dL-dM)	0.177	0.111	0.117
		V 95	-0.224	-0.078	-0.097
		SD (V 95)	0.531	0.219	0.216
		SE(V 95)	0.137	0.066	0.058
Observations		*Firm Count (n)*	1	1	1
		Years (T)	15	11	14
		Total (n x *T)*	15	11	14
Correlation R^2 Check		*r (dAC-dM, e)*	1.5E-08	-1.4E-08	5.8E-09
		p(r)	-	-	-
		Years (T)	15	11	14

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.
The model applied is $V_t = a + b\,(dL - dM)_t + e_t$ where: V_t is the Value-at-Risk (V_t) at time t, $(dL - dM)_t$ is the Total Liabilities to Market Price Relative Delta ($dL_{t-1,1} - dM_{t-1,1}$) at time t, and e_t is the regression error term.
Regression coefficients and related statistics are calculated using OLS regression.

Table V.7 (Continued)

PANEL D

Time Series Regression Analysis for The Royal Bank of Scotland Group PLC Net Income to Market Price Relative Delta ($dI_{t-1,t}$ - $dM_{t-1,t}$) and Historical Value-at-Risk Actual (V_t)

Measure			Total Period 1994-2008	Sub-Periods 1994-2004	Sub-Periods 1994-2007
Regression	*Slope*	*b*	0.266**	0.033	0.021
		t (b)	5.169	0.430	0.284
		p (b)	1.8E-04	6.8E-01	7.8E-01
		SE(b)	0.051	0.078	0.075
		Lower	0.111	-0.220	-0.209
		Upper	0.421	0.286	0.252
	Intercept	*a*	-0.214*	-0.089	-0.105
		t (a)	-2.627	-1.206	-1.611
		p (a)	2.1E-02	2.6E-01	1.3E-01
		SE(a)	0.081	0.074	0.065
		Lower	-0.459	-0.330	-0.303
		Upper	0.031	0.151	0.094
	Model	R^2	0.673	0.020	0.007
		s(e)	0.315	0.229	0.224
		df(e)	13	9	12
Correlation		*r*	0.82**	0.142	0.082
		p(r)	9.0E-05	3.4E-01	3.9E-01
Descriptive Statistics		*dI-dM*	-0.036	0.342	0.333
		SD (dI-dM)	1.636	0.929	0.823
		SE(dI-dM)	0.422	0.280	0.220
		V 95	-0.224	-0.078	-0.097
		SD (V 95)	0.531	0.219	0.216
		SE(V 95)	0.137	0.066	0.058
Observations		*Firm Count (n)*	1	1	1
		Years (T)	15	11	14
		Total (n x T)	15	11	14
Correlation R^2 Check		*r (dAC-dM, e)*	-1.1E-08	-4.8E-10	-4.4E-09
		p(r)	-	-	-
		Years (T)	15	11	14

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.
The model applied is $V_t = a + b\,(dI - dM)_t + e_t$ where: V_t is the Value-at-Risk (V_t) at time t, $(dI - dM)_t$ is the Net Income to Market Price Relative Delta $(dI_{t-1,1} - dM_{t-1,1})$ at time t, and e_t is the regression error term. Regression coefficients and related statistics are calculated using OLS regression.

Analysis

For the The Royal Bank of Scotland Group PLC, the Table V.7 time series regression slopes show that the accounting totals to market price relative delta variable exhibits varying levels of statistically significant explanatory power to the Historical Value-at-Risk Actual variable.

The Table V.7 Panel A time series regression slope shows that before 2005, for the 1994 to 2004 time period, a 1% change in the total equity to market price relative delta variable translates to just above a 0.1% (-0.118) increase in the Historical Value-at-Risk Actual variable. After 2005, the regression slope shows that for the 1994 to 2007 time period, a 1% change in the total equity to market price relative delta variable translates to just above a 0.12% (-0.125) increase in the Historical Value-at-Risk Actual variable. The regression slope shows that for the 1994 to 2008 time period, a 1% change in the total equity to market price relative delta variable translates to nearly a 0.3% (-0.265) increase in the Historical Value-at-Risk Actual variable.

The Panel B time series regression slope shows that before 2005, for the 1994 to 2004 time period, a 1% change in the total assets to market price relative delta variable translates to just above a 0.35% (-0.365) increase in the Historical Value-at-Risk Actual variable. After 2005, the regression slope shows that for the 1994 to 2007 time period, a 1% change in the total assets to market price relative delta variable translates to just above a 0.34% (-0.345) increase in the Historical Value-at-Risk Actual variable. The regression slope shows that for the 1994 to 2008 time period, a 1% change in the total assets to market price relative delta variable translates to nearly a 0.7% (-0.694) increase in the Historical Value-at-Risk Actual variable.

The Panel C time series regression slope shows that before 2005, for the 1994 to 2004 time period, a 1% change in the total liabilities to market price relative delta variable translates to just above a 0.35% (-0.363) increase in the Historical Value-at-Risk Actual variable. After 2005, the regression slope shows that for the 1994 to 2007 time period, a 1% change in the total liabilities to market price relative delta variable translates to just above a 0.34% (-0.343) increase in the Historical Value-at-Risk Actual variable. The regression slope shows that for the 1994 to 2008 time period, a 1% change in the total liabilities to market price relative delta variable translates to nearly a 0.7% (-0.691) increase in the Historical Value-at-Risk Actual variable.

The Panel D time series regression slope shows that before 2005, for the 1994 to 2004 time period, the net income to market price relative delta variable does not show a statistically significant reaction to the Historical Value-at-Risk Actual variable. After 2005, the regression slope shows that for the 1994 to 2008 time period, a 1% change in the net income to market price relative delta variable translates to nearly a 0.27% (-0.266) increase in the Historical Value-at-Risk Actual variable.

These time series slopes suggest that The Royal Bank of Scotland Group PLC relative delta variable reacted significantly to the Historical Value-at-Risk Actual variable after the 2005 accounting change. These reactions exhibit an increase in the magnitude of the difference between the variables after 2005.

The *Correlation R^2 Check* results in this table exhibit levels close to zero. This study considers these levels to signify a valid measure for the reported R^2. However, for this *Correlation R^2 Check* level it was not possible to decipher statistical levels of significance from the system used to produce this result.

V.5.4 Regressions for Lloyds Banking Group PLC Relative Delta and Historical Value-at-Risk Actual

The Lloyds Banking Group PLC regression analysis for the relative delta and Historical Value-at-Risk Actual is presented for the time range 1994 to 2008 in Table V.8. In the regressions, the Historical Value-at-Risk Actual variable is tested as the dependent variable, and the relative delta variable is tested as the independent variable.

Table V.8 Time Series Regression Analysis for Lloyds Banking Group PLC Relative Delta and Historical Value-at-Risk Actual

Time Series Regression

Table V.8 Panel A to Panel D show the results for the time series regressions that test the relative delta and Historical Value-at-Risk Actual by applying the regression specified in equation (3.56). In this table, Panel A presents results for the total equity to market price relative delta and Historical Value-at-Risk Actual regression; Panel B presents results for the total assets to market price relative delta and Historical Value-at-Risk Actual regression; Panel C presents results for the total liabilities to market price relative delta and Historical Value-at-Risk Actual regression; and, Panel D presents results for the net income to market price relative delta and Historical Value-at-Risk Actual regression.

Time Series Regression Table Description

The Table V.8 columns represent the following:

The Total Period column represents the time series regression results for the year range 1994 to 2008, with a single year represented from 1st January to 31st December, and a 31st December variable record date. The Sub-Periods column represents the time series regression results for the year range 1994 to 2004, and for 1994 to 2007, with a single year represented from 1st January to 31st December, and a 31st December variable record date.

The Measure column represents the time series regression results for the total and sub-time periods and is represented by the following data panels:

The *Regression* panel presents the coefficients and related statistics for the regression specified in equation (3.56), and follows the model:

$$V_{\mathrm{t}} = a + b\,(dAC - dM)_t + e_t$$

Where: V_t is the Value-at-Risk (V_{t}) at time t, $(dAC - dM)_t$ is the Accounting Total to Market Price Relative Delta $(dAC_{t-1,t} - dM_{t-1,t})$ at time t, and e_t is the regression error term. The *Lower* and *Upper* are the corresponding coefficient levels predicted at a 99% confidence level.

The *Correlation* panel presents the correlation statistics for the relationship between the dependent and independent variables. The *Descriptive Statistics* panel presents for the variables tested, the average sample means calculated using equation (M.6); the standard deviation, *SD*, of sample means for the time series using equation (M.7); and, the standard error of means, *SE*, for the time series. *The Observations* panel presents: *Firms (n)* that represents the one firm in the time series regression; *Years (T)* represents the number of time series years; *Total (n* x *T)* represents the number of pooled time series regression observations.

Correlation R^2 *Check* panel presents: *r(dAC-dM, e)* that represents the correlation test results for the coefficient of determination R^2 estimated by equation (M.22); *p(r)* represents the probability significance level for the correlation coefficient *r(dAC-dM, e),* and is calculated by applying equation (M.15) ; *Years (T)* represents the number of time series years.

Table V.8 (Continued)

PANEL A

Time Series Regression Analysis for Lloyds Banking Group PLC Total Equity to Market Price Relative Delta ($dE_{t-1,t}$ - $dM_{t-1,t}$) and Historical Value-at-Risk Actual (V_t)

Measure			Total Period	Sub-Periods	
			1999-2008	1999-2004	1999-2007
Regression	*Slope*	*b*	-1.042**	-1.181	-1.174
		t (b)	-4.964	-1.218	-2.060
		p (b)	1.1E-03	2.9E-01	7.8E-02
		SE(b)	0.210	0.970	0.570
		Lower	-1.747	-5.647	-3.169
		Upper	-0.338	3.284	0.820
	Intercept	*a*	-0.118	-0.167	-0.104
		t (a)	-1.455	-0.893	-0.986
		p (a)	1.8E-01	4.2E-01	3.6E-01
		SE(a)	0.081	0.187	0.105
		Lower	-0.392	-1.028	-0.471
		Upper	0.155	0.694	0.264
	Model	R^2	0.755	0.270	0.378
		s(e)	0.209	0.250	0.222
		df(e)	8	4	7
Correlation		*r*	-0.869**	-0.520	-0.614*
		p(r)	5.5E-04	1.5E-01	3.9E-02
Descriptive Statistics		*dE-dM*	0.227	0.161	0.131
		SD (dE-dM)	0.331	0.115	0.138
		SE(dE-dM)	0.105	0.047	0.046
		V 95	-0.355	-0.358	-0.257
		SD (V 95)	0.397	0.262	0.263
		SE(V 95)	0.126	0.107	0.088
Observations		*Firm Count (n)*	1	1	1
		Years (T)	10	6	9
		Total (n x T)	10	6	9
Correlation R^2 Check		*r (dAC-dM, e)*	-1.000**	-1.000**	-1.000**
		p(r)	1.1E-62	4.6E-31	2.0E-51
		Years (T)	10	6	9

Panel notes:

**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.

The model applied is $V_t = a + b\ (dE - dM)_t + e_t$ where: V_t is the Value-at-Risk (V_t) at time t, $(dE - dM)_t$ is the Total Equity to Market Price Relative Delta $(dE_{t-1,1} - dM_{t-1,1})$ at time t, and e_t is the regression error term. Regression coefficients and related statistics are calculated using OLS regression.

Table V.8 (Continued)

PANEL B

Time Series Regression Analysis for Lloyds Banking Group PLC Total Assets to Market Price Relative Delta ($dA_{t-1,t}$ - $dM_{t-1,t}$) and Historical Value-at-Risk Actual (V_t)

Measure			Total Period	Sub-Periods	
			1999-2008	1999-2004	1999-2007
Regression	*Slope*	*b*	-0.675**	-0.213	-0.473
		t (b)	-3.840	-0.370	-1.002
		p (b)	4.9E-03	7.3E-01	3.5E-01
		SE(b)	0.176	0.575	0.472
		Lower	-1.264	-2.861	-2.126
		Upper	-0.085	2.435	1.179
	Intercept	*a*	-0.162	-0.318	-0.186
		t (a)	-1.724	-2.013	-1.660
		p (a)	1.2E-01	1.1E-01	1.4E-01
		SE(a)	0.094	0.158	0.112
		Lower	-0.476	-1.047	-0.580
		Upper	0.153	0.410	0.207
	Model	R^2	0.648	0.033	0.125
		s(e)	0.250	0.288	0.263
		df(e)	8	4	7
Correlation		*r*	-0.805**	-0.182	-0.354
		p(r)	2.5E-03	3.7E-01	1.7E-01
Descriptive Statistics		*dA-dM*	0.287	0.184	0.149
		SD (dA-dM)	0.474	0.224	0.197
		SE(dA-dM)	0.150	0.092	0.066
		V 95	-0.355	-0.358	-0.257
		SD (V 95)	0.397	0.262	0.263
		SE(V 95)	0.126	0.107	0.088
Observations		*Firm Count (n)*	1	1	1
		Years (T)	10	6	9
		Total (n x T)	10	6	9
Correlation R^2 Check		*r (dAC-dM, e)*	-1.000**	-1.000**	-1.000**
		p(r)	1.4E-59	2.7E-28	3.7E-51
		Years (T)	10	6	9

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.
The model applied is $V_t = a + b\,(dA - dM)_t + e_t$ where: V_t is the Value-at-Risk (V_t) at time t, $(dA - dM)_t$ is the Total Assets to Market Price Relative Delta ($dA_{t-1,1} - dM_{t-1,1}$) at time t, and e_t is the regression error term. Regression coefficients and related statistics are calculated using OLS regression.

Table V.8 (Continued)

PANEL C

Time Series Regression Analysis for Lloyds Banking Group PLC Total Liabilities to Market Price Relative Delta ($dL_{t\text{-}1,t}$ - $dM_{t\text{-}1,t}$) and Historical Value-at-Risk Actual (V_t)

Measure			Total Period 1999-2008	Sub-Periods 1999-2004	Sub-Periods 1999-2007
Regression	*Slope*	*b*	-0.665**	-0.200	-0.449
		t (b)	-3.801	-0.359	-0.972
		p (b)	5.2E-03	7.4E-01	3.6E-01
		SE(b)	0.175	0.558	0.462
		Lower	-1.251	-2.767	-2.067
		Upper	-0.078	2.367	1.168
	Intercept	*a*	-0.163	-0.321	-0.190
		t (a)	-1.728	-2.047	-1.692
		p (a)	1.2E-01	1.1E-01	1.3E-01
		SE(a)	0.094	0.157	0.112
		Lower	-0.479	-1.042	-0.582
		Upper	0.153	0.400	0.203
	Model	R^2	0.644	0.031	0.119
		s(e)	0.252	0.289	0.264
		df(e)	8	4	7
Correlation		*r*	-0.802**	-0.177	-0.345
		p(r)	2.6E-03	3.7E-01	1.8E-01
Descriptive Statistics		*dL-dM*	0.289	0.185	0.150
		SD (dL-dM)	0.480	0.231	0.202
		SE(dL-dM)	0.152	0.095	0.067
		V 95	-0.355	-0.358	-0.257
		SD (V 95)	0.397	0.262	0.263
		SE(V 95)	0.126	0.107	0.088
Observations		*Firm Count (n)*	1	1	1
		Years (T)	10	6	9
		Total (n x T)	10	6	9
Correlation R^2 Check		*r (dAC-dM, e)*	-1.000**	-1.000**	-1.000**
		p(r)	1.6E-60	2.7E-27	7.9E-51
		Years (T)	10	6	9

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.
The model applied is $V_t = a + b\,(dL - dM)_t + e_t$ where: V_t is the Value-at-Risk (V_t) at time t, $(dL - dM)_t$ is the Total Liabilities to Market Price Relative Delta ($dL_{t-1,1} - dM_{t-1,1}$) at time t, and e_t is the regression error term.
Regression coefficients and related statistics are calculated using OLS regression.

Table V.8 (Continued)

PANEL D

Time Series Regression Analysis for Lloyds Banking Group PLC Net Income to Market Price Relative Delta ($dI_{t\text{-}1,t}$ - $dM_{t\text{-}1,t}$) and Historical Value-at-Risk Actual (V_t)

Measure			Total Period	Sub-Periods	
			1999-2008	1999-2004	1999-2007
Regression	*Slope*	*b*	-0.285	-0.216	-0.244*
		t (b)	-1.682	-2.397	-2.574
		p (b)	1.3E-01	7.5E-02	3.7E-02
		SE(b)	0.170	0.090	0.095
		Lower	-0.855	-0.630	-0.577
		Upper	0.284	0.199	0.088
	Intercept	*a*	-0.281	-0.292*	-0.199*
		t (a)	-2.293	-3.585	-2.810
		p (a)	5.1E-02	2.3E-02	2.6E-02
		SE(a)	0.123	0.081	0.071
		Lower	-0.693	-0.667	-0.447
		Upper	0.130	0.083	0.049
	Model	R^2	0.261	0.589	0.486
		s(e)	0.362	0.188	0.202
		df(e)	8	4	7
Correlation		*r*	-0.511	-0.768*	-0.697*
		p(r)	6.6E-02	3.7E-02	1.8E-02
Descriptive Statistics		*dI-dM*	0.258	0.304	0.236
		SD (dI-dM)	0.712	0.934	0.751
		SE(dI-dM)	0.225	0.381	0.250
		V 95	-0.355	-0.358	-0.257
		SD (V 95)	0.397	0.262	0.263
		SE(V 95)	0.126	0.107	0.088
Observations		*Firm Count (n)*	1	1	1
		Years (T)	10	6	9
		Total (n x T)	10	6	9
Correlation R^2 Check		*r (dAC-dM, e)*	-1.0**	-1.0**	-1.0**
		p(r)	8.6E-61	6.7E-31	1.3E-53
		Years (T)	10	6	9

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.
The model applied is $V_t = a + b\ (dI - dM)_t + e_t$ where: V_t is the Value-at-Risk (V_t) at time t, $(dI - dM)_t$ is the Net Income to Market Price Relative Delta $(dI_{t-1,1} - dM_{t-1,1})$ at time t, and e_t is the regression error term.
Regression coefficients and related statistics are calculated using OLS regression.

Analysis

For Lloyds Banking Group PLC, the Table V.8 time series regression slopes show that the accounting totals to market price relative delta variable exhibits varying levels of statistically significant explanatory power to the Historical Value-at-Risk Actual variable.

The Table V.8 Panel A time series regression slope shows that before 2005, for the 1994 to 2004 time period, the total equity to market price relative delta variable does not show a statistically significant reaction to the Historical Value-at-Risk Actual variable. After 2005, the regression slope shows that for the 1994 to 2008 time period, a 1% change in the total equity to market price relative delta variable translates to above a 1% (-1.042) increase in the Historical Value-at-Risk Actual variable.

The Panel B time series regression slope shows that before 2005, for the 1994 to 2004 time period, the total assets to market price relative delta variable does not show a statistically significant reaction to the Historical Value-at-Risk Actual variable. After 2005, the regression slope shows that for the 1994 to 2008 time period, a 1% change in the total assets to market price relative delta variable translates to above a 0.6% (-0.675) increase in the Historical Value-at-Risk Actual variable.

The Panel C time series regression slope shows that before 2005, for the 1994 to 2004 time period, the total liabilities to market price relative delta variable does not show a statistically significant reaction to the Historical Value-at-Risk Actual variable. After 2005, the regression slope shows that for the 1994 to 2008 time period, a 1% change in the total liabilities to market price relative delta variable translates to above a 0.6% (-0.665) increase in the Historical Value-at-Risk Actual variable.

The Panel D time series regression slope shows that before 2005, for the 1994 to 2004 time period, the net income to market price relative delta variable does not show a statistically significant reaction to the Historical Value-at-Risk Actual variable. After 2005, the regression slope shows that for the 1994 to 2007 time period, a 1% change in the net income to market price relative delta variable translates to above a 0.2% (-0.244) increase in the Historical Value-at-Risk Actual variable.

These time series slopes suggest that the Lloyds Banking Group PLC relative delta variable reacted significantly to the Historical Value-at-Risk Actual variable after the 2005 accounting change. However, the relative delta variable did not react significantly to the Historical Value-at-Risk Actual variable before 2005.

The results for the *Correlation R^2 Check* in this table exhibit a correlation level of -1. This study considers this level to signify further analysis of the reported R^2. A *Correlation R^2 Check* parameter that exhibits such a high correlation measurement may indicate a possible limitation of the system used to produce this result.

V.5.5 Regressions for Standard Chartered PLC Relative Delta and Historical Value-at-Risk Actual

The Standard Chartered PLC regression analysis for the relative delta and Historical Value-at-Risk Actual is presented for the time range 1994 to 2008 in Table V.9. In the regressions, the Historical Value-at-Risk Actual variable is tested as the dependent variable, and the relative delta variable is tested as the independent variable.

Table V.9 Time Series Regression Analysis for Standard Chartered PLC Relative Delta and Historical Value-at-Risk Actual

Time Series Regression

Table V.9 Panel A to Panel D show the results for the time series regressions that test the relative delta and Historical Value-at-Risk Actual by applying the regression specified in equation (3.56). In this table, Panel A presents results for the total equity to market price relative delta and Historical Value-at-Risk Actual regression; Panel B presents results for the total assets to market price relative delta and Historical Value-at-Risk Actual regression; Panel C presents results for the total liabilities to market price relative delta and Historical Value-at-Risk Actual regression; and, Panel D presents results for the net income to market price relative delta and Historical Value-at-Risk Actual regression.

Time Series Regression Table Description

The Table V.9 columns represent the following:

The Total Period column represents the time series regression results for the year range 1994 to 2008, with a single year represented from 1st January to 31st December, and a 31st December variable record date. The Sub-Periods column represents the time series regression results for the year range 1994 to 2004, and for 1994 to 2007, with a single year represented from 1st January to 31st December, and a 31st December variable record date.

The Measure column represents the time series regression results for the total and sub-time periods and is represented by the following data panels:

The *Regression* panel presents the coefficients and related statistics for the regression specified in equation (3.56), and follows the model:

$$V_{\mathrm{t}} = a + b\ (dAC - dM)_t + e_t$$

Where: V_t is the Value-at-Risk (V_{t}) at time t, $(dAC - dM)_t$ is the Accounting Total to Market Price Relative Delta $(dAC_{t-1,t} - dM_{t-1,t})$ at time t, and e_t is the regression error term. The *Lower* and *Upper* are the corresponding coefficient levels predicted at a 99% confidence level.

The *Correlation* panel presents the correlation statistics for the relationship between the dependent and independent variables. The *Descriptive Statistics* panel presents for the variables tested, the average sample means calculated using equation (M.6); the standard deviation, *SD*, of sample means for the time series using equation (M.7); and, the standard error of means, *SE*, for the time series. *The Observations* panel presents: *Firms (n)* that represents the one firm in the time series regression; *Years (T)* represents the number of time series years; *Total (n x T)* represents the number of pooled time series regression observations.

Correlation R^2 Check panel presents: *r(dAC-dM, e)* that represents the correlation test results for the coefficient of determination R^2 estimated by equation (M.22); *p(r)* represents the probability significance level for the correlation coefficient *r(dAC-dM, e),* and is calculated by applying equation (M.15) ; *Years (T)* represents the number of time series years.

Table V.9 (Continued)

PANEL A

Time Series Regression Analysis for Standard Chartered PLC Total Equity to Market Price Relative Delta ($dE_{t-1,t}$ - $dM_{t-1,t}$) and Historical Value-at-Risk Actual (V_t)

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	-0.383	-0.145	-0.035
		t (b)	-2.083	-0.482	-0.126
		p (b)	5.8E-02	6.4E-01	9.0E-01
		SE(b)	0.184	0.301	0.277
		Lower	-0.937	-1.123	-0.881
		Upper	0.171	0.833	0.811
	Intercept	*a*	-0.141*	-0.185*	-0.141*
		t (a)	-2.179	-2.663	-2.306
		p (a)	4.8E-02	2.6E-02	4.0E-02
		SE(a)	0.065	0.069	0.061
		Lower	-0.335	-0.411	-0.327
		Upper	0.054	0.041	0.046
	Model	R^2	0.250	0.025	0.001
		s(e)	0.237	0.229	0.223
		df(e)	13	9	12
Correlation		*r*	-0.5*	-0.159	-0.036
		p(r)	2.9E-02	3.2E-01	4.5E-01
Descriptive Statistics		*dE-dM*	0.113	0.021	0.044
		SD (dE-dM)	0.344	0.241	0.224
		SE(dE-dM)	0.089	0.073	0.060
		V 95	-0.184	-0.188	-0.142
		SD (V 95)	0.263	0.220	0.215
		SE(V 95)	0.068	0.066	0.057
Observations		*Firm Count (n)*	1	1	1
		Years (T)	15	11	14
		Total (n x T)	15	11	14
Correlation R^2 Check		*r (dAC-dM, e)*	5.3E-09	1.6E-09	6.6E-09
		p(r)	-	-	-
		Years (T)	15	11	14

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.
The model applied is $V_t = a + b\,(dE - dM)_t + e_t$ where: V_t is the Value-at-Risk (V_t) at time t, $(dE - dM)_t$ is the Total Equity to Market Price Relative Delta ($dE_{t-1,1} - dM_{t-1,1}$) at time t, and e_t is the regression error term. Regression coefficients and related statistics are calculated using OLS regression.

Table V.9 (Continued)

PANEL B

Time Series Regression Analysis for Standard Chartered PLC Total Assets to Market Price Relative Delta ($dA_{t-1,t}$ - $dM_{t-1,t}$) and Historical Value-at-Risk Actual (V_t)

Measure			Total Period 1994-2008	Sub-Periods 1994-2004	Sub-Periods 1994-2007
Regression	*Slope*	*b*	-0.348*	-0.086	-0.024
		t (b)	-2.163	-0.300	-0.090
		p (b)	5.0E-02	7.7E-01	9.3E-01
		SE(b)	0.161	0.285	0.263
		Lower	-0.832	-1.012	-0.825
		Upper	0.136	0.841	0.778
	Intercept	*a*	-0.159*	-0.19*	-0.142*
		t (a)	-2.583	-2.712	-2.381
		p (a)	2.3E-02	2.4E-02	3.5E-02
		SE(a)	0.062	0.070	0.060
		Lower	-0.345	-0.418	-0.325
		Upper	0.026	0.038	0.040
	Model	R^2	0.265	0.010	0.001
		s(e)	0.234	0.231	0.223
		df(e)	13	9	12
Correlation		*r*	-0.514*	-0.100	-0.026
		p(r)	2.5E-02	3.9E-01	4.7E-01
Descriptive Statistics		*dA-dM*	0.072	-0.027	-0.010
		SD (dA-dM)	0.390	0.256	0.236
		SE(dA-dM)	0.101	0.077	0.063
		V 95	-0.184	-0.188	-0.142
		SD (V 95)	0.263	0.220	0.215
		SE(V 95)	0.068	0.066	0.057
Observations		*Firm Count (n)*	1	1	1
		Years (T)	15	11	14
		Total (n x T)	15	11	14
Correlation R^2 Check		*r (dAC-dM, e)*	3.6E-09	7.6E-09	6.0E-09
		p(r)	-	-	-
		Years (T)	15	11	14

Panel notes:

**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.

The model applied is $V_t = a + b\,(dA - dM)_t + e_t$ where: V_t is the Value-at-Risk (V_t) at time t, $(dA - dM)_t$ is the Total Assets to Market Price Relative Delta $(dA_{t-1,1} - dM_{t-1,1})$ at time t, and e_t is the regression error term. Regression coefficients and related statistics are calculated using OLS regression.

Table V.9 (Continued)

PANEL C

Time Series Regression Analysis for Standard Chartered PLC Total Liabilities to Market Price Relative Delta ($dL_{t-1,t}$ - $dM_{t-1,t}$) and Historical Value-at-Risk Actual (V_t)

Measure			Total Period 1994-2008	Sub-Periods 1994-2004	1994-2007
Regression	*Slope*	*b*	-0.343	-0.081	-0.019
		t (b)	-2.154	-0.287	-0.072
		p (b)	5.1E-02	7.8E-01	9.4E-01
		SE(b)	0.159	0.284	0.260
		Lower	-0.822	-1.005	-0.814
		Upper	0.137	0.842	0.776
	Intercept	*a*	-0.16*	-0.19*	-0.142*
		t (a)	-2.592	-2.709	-2.380
		p (a)	2.2E-02	2.4E-02	3.5E-02
		SE(a)	0.062	0.070	0.060
		Lower	-0.345	-0.419	-0.325
		Upper	0.026	0.038	0.040
	Model	R^2	0.263	0.009	4.3E-04
		s(e)	0.235	0.231	0.223
		df(e)	13	9	12
Correlation		*r*	-0.513*	-0.095	-0.021
		p(r)	2.5E-02	3.9E-01	4.7E-01
Descriptive Statistics		*dL-dM*	0.071	-0.030	-0.012
		SD (dL-dM)	0.394	0.257	0.238
		SE(dL-dM)	0.102	0.078	0.064
		V 95	-0.184	-0.188	-0.142
		SD (V 95)	0.263	0.220	0.215
		SE(V 95)	0.068	0.066	0.057
Observations		*Firm Count (n)*	1	1	1
		Years (T)	15	11	14
		Total (n x T)	15	11	14
Correlation R^2 Check		*r (dAC-dM, e)*	-4.6E-09	2.4E-09	6.4E-09
		p(r)	-	-	-
		Years (T)	15	11	14

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels; correlation coefficients significant at the 0.01 and 0.05 one-tailed levels.
The model applied is $V_t = a + b\,(dL - dM)_t + e_t$ where: V_t is the Value-at-Risk (V_t) at time t, $(dL - dM)_t$ is the Total Liabilities to Market Price Relative Delta ($dL_{t-1,1} - dM_{t-1,1}$) at time t, and e_t is the regression error term.
Regression coefficients and related statistics are calculated using OLS regression.

Table V.9 (Continued)

PANEL D

Time Series Regression Analysis for Standard Chartered PLC Net Income to Market Price Relative Delta ($dI_{t-1,t}$ - $dM_{t-1,t}$) and Historical Value-at-Risk Actual (V_t)

Measure			Total Period	Sub-Periods	
			1994-2008	1994-2004	1994-2007
Regression	*Slope*	*b*	-0.133	0.110	0.112
		t (b)	-0.942	0.682	0.752
		p (b)	3.6E-01	5.1E-01	4.7E-01
		SE(b)	0.141	0.161	0.149
		Lower	-0.558	-0.413	-0.342
		Upper	0.292	0.633	0.566
	Intercept	*a*	-0.17*	-0.189*	-0.145*
		t (a)	-2.433	-2.769	-2.478
		p (a)	3.0E-02	2.2E-02	2.9E-02
		SE(a)	0.070	0.068	0.059
		Lower	-0.381	-0.411	-0.324
		Upper	0.041	0.033	0.034
	Model	R^2	0.064	0.049	0.045
		s(e)	0.265	0.227	0.218
		df(e)	13	9	12
Correlation		*r*	-0.253	0.222	0.212
		p(r)	1.8E-01	2.6E-01	2.3E-01
Descriptive Statistics		*dI-dM*	0.106	0.012	0.026
		SD (dI-dM)	0.501	0.445	0.408
		SE(dI-dM)	0.129	0.134	0.109
		V 95	-0.184	-0.188	-0.142
		SD (V 95)	0.263	0.220	0.215
		SE(V 95)	0.068	0.066	0.057
Observations		*Firm Count (n)*	1	1	1
		Years (T)	15	11	14
		Total (n x T)	15	11	14
Correlation R^2 Check		*r (dAC-dM, e)*	-1.5E-08	-4.3E-09	-2.1E-09
		p(r)	-	-	-
		Years (T)	15	11	14

Panel notes:
**, * Regression coefficients significant at the 0.01 and 0.05 two-tailed levels.
The model applied is $V_t = a + b\,(dI - dM)_t + e_t$ where: V_t is the Value-at-Risk (V_t) at time t, $(dI - dM)_t$ is the Net Income to Market Price Relative Delta $(dI_{t-1,1} - dM_{t-1,1})$ at time t, and e_t is the regression error term. Regression coefficients and related statistics are calculated using OLS regression.

Analysis

For Standard Chartered PLC, the Table V.9 time series regression slopes show that the accounting totals to market price relative delta variable exhibits marginal levels of statistically significant explanatory power to the Historical Value-at-Risk Actual variable.

The Table V.9 Panel B time series regression slope shows that before 2005, for the 1994 to 2004 time period, the total assets to market price relative delta variable does not show a statistically significant reaction to the Historical Value-at-Risk Actual variable. After 2005, the regression slope shows that for the 1994 to 2008 time period, a 1% change in the total assets to market price relative delta variable translates to above a 0.3% (-0.348) increase in the Historical Value-at-Risk Actual variable.

These time series slopes suggest that the Standard Chartered PLC total assets to market price relative delta variable reacted significantly to the Historical Value-at-Risk Actual variable after the 2005 accounting change. Other than this, the time series slopes suggest that in general the accounting to market price relative delta variables do not react significantly to the Historical Value-at-Risk Actual variable before and after 2005.

The *Correlation R^2 Check* results in this table exhibit levels close to zero. This study considers these levels to signify a valid measure for the reported R^2. However, for this *Correlation R^2 Check* level it was not possible to decipher statistical levels of significance from the system used to produce this result.

APPENDIX W PRIMARY SAMPLE AND SECONDARY SAMPLE DATA

W.1 Primary Sample and Secondary Sample Data

This appendix presents in Table W.1 to Table W.5 the data collected for the banks registered with the LSE's UK banking sector. These banks represent the Primary sample group of firms tested in this research. Summary information for these banks is presented in Table 3.6, labeled 'Primary' in the 'Sample' column.

Table W.6 to Table W.16 presents the data collected for the banking related firms registered with the LSE's UK financial services sector. These firms represent the Secondary sample group of firms tested in this research. Summary information for these banks is presented in Table 3.6, labeled 'Secondary' in the 'Sample' column.

For each table presented the following superscript letters represent the corresponding details:

[a] The fiscal year-end financial statement reporting date.

[b] The year used to group the variable.

[c] Reported at the scale 1,000,000 GBP (1 Million GBP).

[d] Net income amounts presented from 1992 to 2001 are the full year figures, and from 2002 to 2008 are the second half-year figures. This in accordance with the convention applied in this study to test the net income variable.

[e] The end of day market price of the firm represented using the scale: 0.01GBP (Great British Pound), equivalent to 1GBX.

[f] Market Value to Book Value ratio calculated by dividing the variables Market Value by Total Shareholders' Equity.

[g] Market Value to Book Value ratio calculated by dividing the variables Common Shares Outstanding and Market Price by Total Shareholders' Equity.

Table W.1 Original and Restated Data for Accounting Variables and Market Variables for HSBC HOLDINGS PLC Surveyed on a Yearly Basis from 1992 to 2008

Date[a]	Year[b]	Accounting Variable[c]								Market Variable		
		Total Shareholders' Equity		Total Assets		Total Liabilities		Net Income[d]		Market Price[e]	Market Value	Market To Book Value
		Original	Restated	Original	Restated	Original	Restated	Original	Restated			
31 Dec 1992	1992	8,011	-	170,414	-	161,104	-	1,221	-	143.06	4,018.80	1.54
31 Dec 1993	1993	9,334	-	206,007	-	195,107	-	1,806	-	282.93	7,996.54	2.64
31 Dec 1994	1994	10,790	-	201,484	-	189,021	-	2,053	-	205.22	6,016.06	1.71
31 Dec 1995	1995	20,787	-	352,090	-	328,132	-	3,892	-	292.22	8,651.60	1.98
31 Dec 1996	1996	26,005	-	404,967	-	375,324	-	4,897	-	379.36	11,350.63	2.28
31 Dec 1997	1997	16,442	-	286,333	-	267,704	-	3,355	-	453.15	13,632.77	2.54
31 Dec 1998	1998	16,470	-	290,259	-	271,875	-	2,595	-	473.48	14,390.20	2.66[f]
31 Dec 1999	1999	20,725	-	352,940	-	329,948	-	3,355	-	752.05	72,983.81	3.52[g]
31 Dec 2000	2000	30,129	-	450,469	-	415,447	-	4,437	-	858.36	91,081.81	3.02
31 Dec 2001	2001	31,211	-	477,252	-	441,582	-	3,714	-	702.38	75,335.19	2.41
31 Dec 2002	2002	32,233	-	470,622	-	434,283	-	1,753	-	598.24	64,995.39	2.02
31 Dec 2003	2003	41,602	-	576,091	-	528,403	-	2,558	-	765.12	96,228.88	2.31
31 Dec 2004	2004	45,118	44,545	663,689	665,038	611,688	613,370	2,696	2,932	765.99	98,202.44	2.18
31 Dec 2005	2005	53,841	-	873,339	-	816,123	-	4,459	-	813.05	105,742.40	1.97
31 Dec 2006	2006	55,362	-	949,093	-	890,371	-	3,426	-	811.31	107,736.90	1.95
31 Dec 2007	2007	64,383	-	1,180,037	-	1,112,009	-	4,039	-	733.75	99,600.50	1.54
31 Dec 2008	2008	63,612	-	1,753,054	-	1,684,826	-	-1,035	-	576.89	80,136.81	1.24

Table note: The highlighted record identifies the IFRS accounting standards 2005 adoption year.

Table W.2 Original and Restated Data for Accounting Variables and Market Variables for BARCLAYS PLC Surveyed on a Yearly Basis from 1992 to 2008

Date[a]	Year[b]	Accounting Variable[c]								Market Variable		
		Total Shareholders' Equity		Total Assets		Total Liabilities		Net Income[d]		Market Price[e]	Market Value	Market To Book Value
		Original	Restated	Original	Restated	Original	Restated	Original	Restated			
31 Dec 1992	1992	5,279	-	149,118	-	143,156	-	-343	-	92.88	6,157.41	1.17
31 Dec 1993	1993	5,312	-	166,008	-	160,019	-	313	-	154.85	10,315.92	1.94
31 Dec 1994	1994	6,161	-	162,403	-	155,913	-	1,179	-	148.64	9,981.67	1.62
31 Dec 1995	1995	7,027	-	168,826	-	161,456	-	1,364	-	179.92	11,986.58	1.71
31 Dec 1996	1996	7,267	-	186,002	-	178,415	-	1,639	-	243.59	15,417.70	2.12
31 Dec 1997	1997	7,577	-	234,614	-	226,711	-	1,130	-	393.93	24,637.71	3.25
31 Dec 1998	1998	7,880	-	219,451	-	211,257	-	1,335	-	315.54	19,569.58	2.48[g]
31 Dec 1999	1999	8,478	-	254,788	-	245,958	-	1,759	-	433.86	26,623.05	3.14[g]
31 Dec 2000	2000	13,182	-	316,185	-	301,403	-	2,473	-	504.47	34,470.62	2.62
31 Dec 2001	2001	14,502	-	356,643	-	340,135	-	2,465	-	553.89	38,006.09	2.62
31 Dec 2002	2002	15,150	-	403,011	-	387,705	-	997	-	374.94	25,709.00	1.70
31 Dec 2003	2003	16,374	-	443,262	-	426,605	-	1,361	-	485.23	32,698.64	2.00
31 Dec 2004	2004	17,417	15,870	522,089	536,793	503,771	520,029	1,552	1,456	570.69	37,818.09	2.17
31 Dec 2005	2005	17,426	-	923,671	-	899,241	-	1,606	-	595.04	39,650.84	2.28
31 Dec 2006	2006	19,799	-	996,023	-	968,633	-	2,264	-	710.93	47,706.98	2.41
31 Dec 2007	2007	23,291	-	1,225,898	-	1,193,422	-	1,783	-	490.83	33,289.40	1.43
31 Dec 2008	2008	32,966	-	2,050,312	-	2,006,553	-	2,664	-	153.40	12,842.38	0.55

Table note: The highlighted record identifies the IFRS accounting standards 2005 adoption year.

Table W.3 Original and Restated Data for Accounting Variables and Market Variables for THE ROYAL BANK OF SCOTLAND GROUP PLC Surveyed on a Yearly Basis from 1992 to 2008

		Accounting Variable[c]								Market Variable		
Date[a]	Year[b]	Total Shareholders' Equity		Total Assets		Total Liabilities		Net Income[d]		Market Price[e]	Market Value	Market To Book Value
		Original	Restated	Original	Restated	Original	Restated	Original	Restated			
30 Sep 1992	1992	1,780	-	34,498	-	32,702	-	11	-	41.83	1,265.22	0.71
30 Sep 1993	1993	1,897	-	36,294	-	34,378	-	139	-	84.44	2,596.38	1.37
30 Sep 1994	1994	1,936	-	45,320	-	43,368	-	331	-	107.16	3,324.15	2.34
30 Sep 1995	1995	2,165	-	51,044	-	48,861	-	352	-	116.20	3,628.08	2.36
30 Sep 1996	1996	2,510	-	61,116	-	58,456	-	439	-	126.27	3,990.24	2.13
30 Sep 1997	1997	3,042	-	72,601	-	69,369	-	457	-	178.31	5,972.82	2.59
30 Sep 1998	1998	2,953	-	79,676	-	76,631	-	637	-	173.01	5,863.79	2.77
30 Sep 1999	1999	4,202	-	88,852	-	84,504	-	776	-	336.47	11,617.26	4.07
31 Dec 2000	2000	23,116	-	320,004	-	296,342	-	1,478	-	441.58	42,357.62	2.22
31 Dec 2001	2001	27,620	-	368,782	-	340,577	-	1,868	-	466.70	47,683.47	2.13
31 Dec 2002	2002	27,052	-	412,000	-	383,109	-	635	-	415.34	43,053.00	1.83
31 Dec 2003	2003	28,099	-	455,275	-	424,463	-	570	-	459.44	48,776.46	1.94
31 Dec 2004	2004	31,865	33,905	583,467	588,075	547,773	550,678	2,150	2,455	489.03	55,584.00	2.03
31 Dec 2005	2005	35,435	-	776,671	-	739,127	-	2,858	2,866	489.87	55,925.58	1.58
31 Dec 2006	2006	40,227	-	871,276	-	825,786	-	3,224	-	556.30	62,757.95	1.56
31 Dec 2007	2007	53,038	-	1,897,575	-	1,806,149	-	3,748	-	371.80	44,443.56	0.84
31 Dec 2008	2008	58,879	-	2,394,570	-	2,314,072	-	-23,335	-	49.40	19,491.70	0.37

Table note: The highlighted record identifies the IFRS accounting standards 2005 adoption year.

Table W.4 Original and Restated Data for Accounting Variables and Market Variables for LLOYDS BANKING GROUP PLC Surveyed on a Yearly Basis from 1992 to 2008

Date[a]	Year[b]	Accounting Variable[c]								Market Variable		
		Total Shareholders' Equity		Total Assets		Total Liabilities		Net Income[d]		Market Price[e]	Market Value	Market To Book Value
		Original	Restated	Original	Restated	Original	Restated	Original	Restated			
31 Dec 1992	1992	2,730	-	61,004	-	57,739	-	441	-	-	-	-
31 Dec 1993	1993	3,063	-	79,757	-	76,152	-	605	-	-	-	-
31 Dec 1994	1994	3,661	-	81,357	-	77,129	-	797	-	-	-	-
31 Dec 1995	1995	4,158	-	147,996	-	143,203	-	961	-	246.96	16,835.50	4.05
31 Dec 1996	1996	5,027	-	147,320	-	142,259	-	1,575	-	320.72	23,079.10	4.59
31 Dec 1997	1997	6,218	-	158,070	-	151,812	-	2,335	-	586.31	42,458.64	6.83
31 Dec 1998	1998	7,454	-	167,976	-	160,480	-	2,120	-	636.97	46,469.21	6.23[g]
31 Dec 1999	1999	8,658	-	176,056	-	167,365	-	2,514	-	577.00	42,403.87	4.9[g]
31 Dec 2000	2000	9,709	-	217,954	-	207,693	-	2,724	-	527.45	38,933.37	4.01
31 Dec 2001	2001	10,737	-	236,516	-	224,782	-	2,500	-	555.76	41,576.21	3.87
31 Dec 2002	2002	7,954	-	252,740	-	244,055	-	668	-	332.27	24,900.17	3.13
31 Dec 2003	2003	9,624	-	252,012	-	241,661	-	2,099	-	333.76	25,059.32	2.60
31 Dec 2004	2004	9,977	11,047	279,843	284,422	269,270	272,744	1,338	1,298	352.38	26,470.95	2.65
31 Dec 2005	2005	10,195	-	309,754	-	299,124	-	1,301	-	363.93	27,361.48	2.68
31 Dec 2006	2006	11,155	-	343,598	-	332,091	-	1,589	-	425.76	32,191.01	2.89
31 Dec 2007	2007	12,141	-	353,346	-	340,921	-	1,749	-	351.64	26,657.14	2.39
31 Dec 2008	2008	9,393	-	435,200	-	425,501	-	243	-	93.87	10,797.24	0.89

Table note: The highlighted record identifies the IFRS accounting standards 2005 adoption year.

Table W.5 Original and Restated Data for Accounting Variables and Market Variables for STANDARD CHARTERED PLC Surveyed on a Yearly Basis from 1992 to 2008

Date[a]	Year[b]	Accounting Variable[c]								Market Variable		
		Total Shareholders' Equity		Total Assets		Total Liabilities		Net Income[d]		Market Price[e]	Market Value	Market To Book Value
		Original	Restated	Original	Restated	Original	Restated	Original	Restated			
31 Dec 1992	1992	1,004	-	27,326	-	26,286	-	68	-	126.05	1,362.24	1.36
31 Dec 1993	1993	1,297	-	31,883	-	30,545	-	229	-	271.79	2,972.60	2.48
31 Dec 1994	1994	1,530	-	34,214	-	32,650	-	322	-	245.53	2,704.02	1.77
31 Dec 1995	1995	1,970	-	38,934	-	36,930	-	444	-	479.68	5,315.59	3.00
31 Dec 1996	1996	2,339	-	42,138	-	39,766	-	576	-	629.36	7,060.57	3.30
31 Dec 1997	1997	2,553	-	47,181	-	44,592	-	568	-	568.96	6,448.00	2.74
31 Dec 1998	1998	2,820	-	47,858	-	44,982	-	447	-	609.66	6,964.82	2.47[g]
31 Dec 1999	1999	3,366	-	54,132	-	50,697	-	328	-	841.18	10,187.67	3.03[g]
31 Dec 2000	2000	4,261	-	68,579	-	63,941	-	661	-	844.25	10,871.71	2.68
31 Dec 2001	2001	5,072	-	73,758	-	67,997	-	434	-	717.76	9,271.55	1.90
31 Dec 2002	2002	4,551	-	70,050	-	65,344	-	224	-	617.98	8,258.04	1.99
31 Dec 2003	2003	4,310	-	67,040	-	62,387	-	280	-	807.48	10,837.68	2.74
31 Dec 2004	2004	4,393	4,742	73,656	76,465	68,765	71,221	348	394	847.75	11,419.28	2.82
31 Dec 2005	2005	6,921	-	125,002	-	117,819	-	588	588	1,133.54	16,850.93	2.44
31 Dec 2006	2006	8,611	-	135,661	135,702	126,772	126,815	571	-	1,305.98	20,660.14	2.40
31 Dec 2007	2007	10,475	-	165,099	165,416	154,322	154,640	693	0	1,614.09	25,954.85	2.47
31 Dec 2008	2008	15,399	-	302,144	-	286,359	-	1,119	-	875.00	16,587.09	1.58

Table note: The highlighted record identifies the IFRS accounting standards 2005 adoption year.

Table W.6 Original and Restated Data for Accounting Variables and Market Variables for SCHRODERS PLC Surveyed on a Yearly Basis from 1992 to 2008

Date[a]	Year[b]	Accounting Variable[c]								Market Variable		
		Total Shareholders' Equity		Total Assets		Total Liabilities		Net Income[d]		Market Price[e]	Market Value	Market To Book Value
		Original	Restated	Original	Restated	Original	Restated	Original	Restated			
31 Dec 1992	1992	462	-	6,209	-	5,738	-	64	-	219.34	670.53	1.85
31 Dec 1993	1993	675	-	7,803	-	7,118	-	140	-	449.52	1,374.21	2.61
31 Dec 1994	1994	731	-	11,339	-	10,595	-	132	-	481.39	1,471.65	2.59
31 Dec 1995	1995	849	-	11,652	-	10,789	-	139	-	674.27	2,061.31	3.14
31 Dec 1996	1996	941	-	10,329	-	9,373	-	179	-	746.73	2,282.82	3.14
31 Dec 1997	1997	1,046	-	10,608	-	9,548	-	171	-	942.90	2,882.52	3.58
31 Dec 1998	1998	1,171	-	13,519	-	12,335	-	168	-	811.05	2,479.46	2.12[g]
31 Dec 1999	1999	1,370	-	13,327	-	11,954	-	245	-	921.21	2,816.23	2.06[g]
31 Dec 2000	2000	1,161	-	5,922	-	4,760	-	221	-	1,321.00	2,985.46	3.38
31 Dec 2001	2001	1,113	-	5,544	-	4,431	-	-21	-	845.00	1,909.89	2.27
31 Dec 2002	2002	1,044	-	4,535	-	3,491	-	13	-	511.00	1,154.97	1.44
31 Dec 2003	2003	1,029	-	2,583	-	1,553	-	27	-	632.00	1,428.46	1.82
31 Dec 2004	2004	1,103	1,119	2,668	2,676	1,554	1,546	88	99	751.00	1,697.43	2.02
31 Dec 2005	2005	1,343	-	3,287	-	1,943	-	101	-	950.00	2,147.21	2.11
31 Dec 2006	2006	1,443	-	5,067	-	3,623	-	123	-	1,116.00	2,522.41	2.27
31 Dec 2007	2007	1,696	-	6,834	-	5,138	-	160	-	1,302.00	2,942.81	2.26
31 Dec 2008	2008	1,632	-	7,551	-	5,919	-	-24	-	858.00	1,939.27	1.49

Table note: The highlighted record identifies the IFRS accounting standards 2005 adoption year.

Table W.7 Original and Restated Data for Accounting Variables and Market Variables for PROVIDENT FINANCIAL PLC Surveyed on a Yearly Basis from 1992 to 2008

Date[a]	Year[b]	Accounting Variable[c]								Market Variable		
		Total Shareholders' Equity		Total Assets		Total Liabilities		Net Income[d]		Market Price[e]	Market Value	Market To Book Value
		Original	Restated	Original	Restated	Original	Restated	Original	Restated			
31 Dec 1992	1992	154	-	542	-	387	-	31	-	174.31	355.77	2.31
31 Dec 1993	1993	176	-	601	-	425	-	42	-	293.53	606.66	3.44
31 Dec 1994	1994	200	-	746	-	546	-	54	-	353.66	731.34	3.65
31 Dec 1995	1995	232	-	826	-	594	-	68	-	529.52	1,105.65	4.76
31 Dec 1996	1996	270	-	851	-	582	-	79	-	649.77	1,365.57	5.07
31 Dec 1997	1997	279	-	905	-	626	-	94	-	1,030.58	2,125.60	7.62
31 Dec 1998	1998	233	-	961	-	728	-	105	-	1,143.41	2,320.86	9.97[g]
31 Dec 1999	1999	247	-	1,038	-	791	-	112	-	904.39	1,803.90	7.32[g]
31 Dec 2000	2000	252	-	1,217	-	965	-	118	-	1,277.78	2,455.24	9.74
31 Dec 2001	2001	284	-	1,418	-	1,134	-	124	-	833.33	1,585.69	5.59
31 Dec 2002	2002	392	-	1,825	-	1,433	-	76	-	767.44	1,458.31	3.72
31 Dec 2003	2003	449	-	1,966	-	1,517	-	85	-	840.44	1,654.51	3.68
31 Dec 2004	2004	526	415	2,090	1,996	1,565	1,581	92	85	868.22	1,714.28	3.26
31 Dec 2005	2005	317	-	1,915	-	1,597	-	-59	-	707.36	1,398.77	4.41
31 Dec 2006	2006	354	-	1,870	1,913	1,516	1,559	78	-	906.33	1,796.37	5.07
31 Dec 2007	2007	296	-	1,087	1,075	791	779	110	112	833.50	1,093.39	3.09
31 Dec 2008	2008	278	-	1,227	-	949	-	55	-	860.00	1,130.13	3.82

Table note: The highlighted record identifies the IFRS accounting standards 2005 adoption year.

Table W.8 Original and Restated Data for Accounting Variables and Market Variables for CLOSE BROTHERS GROUP PLC Surveyed on a Yearly Basis from 1992 to 2008

Date[a]	Year[b]	Accounting Variable[c]								Market Variable		
		Total Shareholders' Equity		Total Assets		Total Liabilities		Net Income[d]		Market Price[e]	Market Value	Market To Book Value
		Original	Restated	Original	Restated	Original	Restated	Original	Restated			
31 Jul 1992	1992	66.42	-	416.53	-	347.48	-	8.47	-	103.07	78.20	1.18
31 Jul 1993	1993	81.45	-	574.84	-	489.18	-	11.15	-	185.04	165.73	2.03
31 Jul 1994	1994	98.22	-	714.60	-	611.92	-	19.86	-	233.63	214.87	2.19
31 Jul 1995	1995	112.07	-	923.82	-	809.40	-	21.09	-	301.36	292.33	2.61
31 Jul 1996	1996	178.55	-	1,072.63	-	892.04	-	28.67	-	330.00	397.75	2.23
31 Jul 1997	1997	195.50	-	1,371.36	-	1,173.54	-	36.13	-	422.50	515.12	2.63
31 Jul 1998	1998	206.35	-	1,645.03	-	1,436.63	-	46.24	-	847.50	1,034.80	5.01
31 Jul 1999	1999	266.16	-	1,701.72	-	1,433.45	-	50.86	-	847.50	1,089.88	4.09
31 Jul 2000	2000	367.84	-	2,637.88	-	2,262.06	-	95.24	-	1,045.00	1,410.75	3.84
31 Jul 2001	2001	407.89	-	2,755.18	-	2,342.23	-	59.10	-	755.00	1,027.82	2.52
31 Jul 2002	2002	471.92	-	3,043.29	-	2,565.28	-	22.58	-	452.50	649.94	1.38
31 Jul 2003	2003	486.53	-	3,560.95	-	3,068.30	-	26.83	-	712.50	1,026.09	2.11
31 Jul 2004	2004	509.26	-	3,866.07	-	3,352.13	-	29.74	-	667.00	962.24	1.89
31 Jul 2005	2005	540.32	572.51	4,517.56	4,726.34	3,971.27	4,147.96	27.39	27.67	757.50	1,095.61	2.03
31 Jul 2006	2006	654.99	-	4,787.53	-	4,125.17	-	55.79	-	864.50	1,265.12	1.93
31 Jul 2007	2007	745.37	-	5,347.17	-	4,594.51	-	64.10	-	814.50	1,200.02	1.61
31 Jul 2008	2008	715.40	-	5,723.70	-	5,003.30	-	43.30	-	601.00	887.56	1.24[g]

Table note: The highlighted record identifies the IFRS accounting standards 2005 adoption year.

Table W.9 Original and Restated Data for Accounting Variables and Market Variables for ABERDEEN ASSET MANAGEMENT PLC Surveyed on a Yearly Basis from 1992 to 2008

Date[a]	Year[b]	Accounting Variable[c]								Market Variable		
		Total Shareholders' Equity		Total Assets		Total Liabilities		Net Income[d]		Market Price[e]	Market Value	Market To Book Value
		Original	Restated	Original	Restated	Original	Restated	Original	Restated			
30 Sep 1992	1992	20.28	-	37.51	-	17.22	-	1.28	-	19.95	26.10	1.29
30 Sep 1993	1993	21.29	-	38.24	-	16.95	-	2.07	-	38.29	50.10	2.35
30 Sep 1994	1994	24.74	-	38.56	-	13.83	-	3.39	-	48.58	63.57	2.57
30 Sep 1995	1995	26.78	-	113.58	-	86.79	-	2.72	-	64.03	84.49	3.16
30 Sep 1996	1996	29.67	-	152.18	-	122.47	-	4.37	-	54.05	73.40	2.47
30 Sep 1997	1997	79.72	-	211.85	-	132.14	-	2.31	-	66.92	91.08	1.15
30 Sep 1998	1998	76.16	-	200.72	-	124.56	-	6.02	-	59.84	135.91	1.79
30 Sep 1999	1999	80.90	-	235.92	-	155.03	-	10.49	-	99.74	234.20	2.91
30 Sep 2000	2000	98.82	-	273.54	-	174.72	-	24.13	-	367.75	884.31	8.99
30 Sep 2001	2001	217.42	-	643.29	-	425.66	-	13.70	-	205.91	554.26	2.98
30 Sep 2002	2002	207.15	-	810.08	-	602.47	-	1.02	-	49.87	135.98	0.73
30 Sep 2003	2003	178.60	-	707.03	-	527.68	-	-45.89	-	45.37	124.72	0.74
30 Sep 2004	2004	132.92	-	690.57	-	557.37	-	-68.95	-	55.98	205.49	1.55
30 Sep 2005	2005	419.85	430.30	3,282.82	3,326.70	2,862.97	2,896.40	1.73	12.48	114.00	689.72	1.74
30 Sep 2006	2006	450.10	-	2,214.29	-	1,764.19	-	26.18	25.84	163.75	1,025.21	2.32
30 Sep 2007	2007	422.10	-	2,254.20	-	1,634.29	-	37.98	-	183.00	1,150.77	2.78
30 Sep 2008	2008	545.36	-	2,346.92	-	1,603.62	-	10.53	-	126.00	903.40	2.18

Table note: The highlighted record identifies the IFRS accounting standards 2005 adoption year.

Table W.10 Original and Restated Data for Accounting Variables and Market Variables for PARAGON GROUP OF COMPANIES PLC Surveyed on a Yearly Basis from 1992 to 2008

Date[a]	Year[b]	Accounting Variable[c]								Market Variable		
		Total Shareholders' Equity		Total Assets		Total Liabilities		Net Income[d]		Market Price[e]	Market Value	Market To Book Value
		Original	Restated	Original	Restated	Original	Restated	Original	Restated			
30 Sep 1992	1992	11.20	-	1,409.90	-	1,398.70	-	-146.80	-	45.87	3.10	0.28[g]
30 Sep 1993	1993	-36.10	-	2,698.30	-	2,734.40	-	-44.59	-	141.43	9.56	-0.07
30 Sep 1994	1994	-24.80	-	1,831.20	-	1,856.00	-	3.91	-	248.45	16.79	-0.14
30 Sep 1995	1995	39.60	-	1,555.20	-	1,515.60	-	15.10	-	151.37	86.94	2.20
30 Sep 1996	1996	47.30	-	1,299.40	-	1,252.10	-	18.10	-	145.25	83.43	1.70
30 Sep 1997	1997	61.30	-	1,232.10	-	1,170.80	-	21.60	-	275.21	158.08	2.51
30 Sep 1998	1998	84.00	-	1,602.70	-	1,518.70	-	23.90	-	238.32	172.33	1.99
30 Sep 1999	1999	110.70	-	1,670.60	-	1,559.90	-	30.30	-	334.76	243.87	2.15
30 Sep 2000	2000	132.90	-	1,866.50	-	1,733.60	-	28.50	-	240.71	175.68	1.28
30 Sep 2001	2001	161.30	-	2,397.80	-	2,236.50	-	32.30	-	353.89	258.85	1.56
30 Sep 2002	2002	191.50	-	2,784.80	-	2,593.30	-	20.20	-	274.98	203.63	1.01
30 Sep 2003	2003	224.10	-	3,439.00	-	3,196.10	-	22.00	-	532.43	397.80	1.57
30 Sep 2004	2004	268.40	-	4,948.00	-	4,665.60	-	29.20	-	543.59	408.83	1.45
30 Sep 2005	2005	308.00	312.80	5,998.20	7,086.80	5,680.30	6,774.00	32.20	29.90	846.47	631.74	1.99
30 Sep 2006	2006	279.00	-	9,083.10	-	8,804.10	-	36.30	-	1,074.42	783.24	2.46
30 Sep 2007	2007	313.30	-	12,081.10	-	11,767.80	-	32.10	-	478.63	344.68	1.08
30 Sep 2008	2008	621.50	-	11,499.40	-	10,877.90	-	18.70	-	65.00	194.02	0.62

Table note: The highlighted record identifies the IFRS accounting standards 2005 adoption year.

Table W.11 Original and Restated Data for Accounting Variables and Market Variables for RATHBONE BROTHERS PLC Surveyed on a Yearly Basis from 1992 to 2008

Date[a]	Year[b]	Accounting Variable[c]								Market Variable		
		Total Shareholders' Equity		Total Assets		Total Liabilities		Net Income[d]		Market Price[e]	Market Value	Market To Book Value
		Original	Restated	Original	Restated	Original	Restated	Original	Restated			
31 Dec 1992	1992	9.20	-	52.04	-	42.84	-	2.76	-	246.00	38.57	4.19
31 Dec 1993	1993	11.79	-	80.47	-	68.67	-	3.46	-	316.00	58.69	4.98
31 Dec 1994	1994	14.20	-	63.72	-	49.51	-	3.95	-	245.00	47.89	3.37
31 Dec 1995	1995	17.40	-	72.92	-	55.46	-	4.87	-	329.00	77.63	4.46
31 Dec 1996	1996	21.81	-	117.57	-	95.77	-	6.31	-	307.50	84.41	3.87
31 Dec 1997	1997	25.20	-	142.79	-	117.59	-	7.05	-	400.00	114.72	4.55
31 Dec 1998	1998	40.41	-	200.32	-	159.90	-	12.22	-	540.00	170.73	4.22[g]
31 Dec 1999	1999	51.44	-	253.14	-	201.70	-	15.53	-	920.00	318.68	6.2[g]
31 Dec 2000	2000	70.68	-	405.63	-	334.95	-	16.87	-	956.00	342.26	4.84
31 Dec 2001	2001	75.43	-	521.40	-	445.97	-	11.68	-	892.50	323.80	4.29
31 Dec 2002	2002	100.43	-	542.36	-	441.93	-	2.09	-	555.00	218.54	2.18
31 Dec 2003	2003	105.90	-	513.92	-	408.02	-	5.11	-	740.50	301.15	2.84
31 Dec 2004	2004	110.59	117.44	586.62	600.98	476.03	483.54	6.69	10.48	852.50	348.41	3.15
31 Dec 2005	2005	130.42	-	687.67	-	557.25	-	14.26	-	992.00	409.36	3.14
31 Dec 2006	2006	159.15	-	907.30	-	748.15	-	16.05	-	1,198.00	506.48	3.18
31 Dec 2007	2007	184.75	-	1,223.10	-	1,038.35	-	18.54	-	1,050.00	448.24	2.82
31 Dec 2008	2008	184.63	-	1,307.96	-	1,123.33	-	1.50	-	833.50	356.81	1.93

Table note: The highlighted record identifies the IFRS accounting standards 2005 adoption year.

Table W.12 Original and Restated Data for Accounting Variables and Market Variables for ELECTRA PRIVATE EQUITY PLC Surveyed on a Yearly Basis from 1992 to 2008

Date[a]	Year[b]	Accounting Variable[c]								Market Variable		
		Total Shareholders' Equity		Total Assets		Total Liabilities		Net Income[d]		Market Price[e]	Market Value	Market To Book Value
		Original	Restated	Original	Restated	Original	Restated	Original	Restated			
30 Sep 1992	1992	470.79	-	566.10	-	94.74	-	11.99	-	169.00	292.11	0.61
30 Sep 1993	1993	580.61	-	713.20	-	131.16	-	13.05	-	281.00	485.70	0.82
30 Sep 1994	1994	643.12	-	790.79	-	145.16	-	12.98	-	318.50	551.22	0.84
30 Sep 1995	1995	747.79	-	897.37	-	149.59	-	10.84	-	368.00	636.98	0.84
30 Sep 1996	1996	886.21	-	1,051.41	-	165.20	-	18.49	-	412.50	714.04	0.79
30 Sep 1997	1997	1,082.80	-	1,244.68	-	161.87	-	24.55	-	483.00	836.07	0.75
30 Sep 1998	1998	1,145.32	-	1,377.20	-	231.88	-	27.75	-	512.00	886.25	0.76
30 Sep 1999	1999	987.46	-	1,284.74	-	297.28	-	-5.73	-	836.00	868.24	0.88
30 Sep 2000	2000	874.04	-	1,137.32	-	263.27	-	-19.46	-	1,034.00	832.99	0.95
30 Sep 2001	2001	541.11	-	787.92	-	246.81	-	-17.53	-	651.00	424.66	0.78
30 Sep 2002	2002	498.33	-	737.50	-	239.17	-	-1.29	-	462.50	301.68	0.61
30 Sep 2003	2003	495.50	-	722.25	-	226.75	-	0.29	-	633.50	413.24	0.83
30 Sep 2004	2004	426.72	-	616.52	-	189.79	-	-0.34	-	793.50	370.93	0.87
30 Sep 2005	2005	512.18	520.88	711.35	-	199.17	190.47	27.52	27.05	1,113.00	484.24	0.95
30 Sep 2006	2006	598.29	-	791.59	-	193.30	-	7.34	-	1,371.00	530.89	0.89
30 Sep 2007	2007	745.51	-	965.89	-	220.38	-	7.19	-	1,680.00	625.85	1.05
30 Sep 2008	2008	640.95	-	837.55	-	196.60	-	-2.94	-	1,235.00	439.61	0.59

Table note: The highlighted record identifies the IFRS accounting standards 2005 adoption year.

Table W.13 Original and Restated Data for Accounting Variables and Market Variables for BANKERS INVESTMENT TRUST PLC Surveyed on a Yearly Basis from 1992 to 2008

Date[a]	Year[b]	Accounting Variable[c]								Market Variable		
		Total Shareholders' Equity		Total Assets		Total Liabilities		Net Income[d]		Market Price[e]	Market Value	Market To Book Value
		Original	Restated	Original	Restated	Original	Restated	Original	Restated			
31 Oct 1992	1992	208.32	-	243.42	-	35.09	-	5.64	-	118.00	182.76	0.88
31 Oct 1993	1993	285.61	-	327.84	-	42.23	-	6.56	-	185.00	286.53	1.01
31 Oct 1994	1994	279.60	-	329.37	-	49.78	-	6.61	-	185.00	286.97	1.03
31 Oct 1995	1995	311.13	-	365.29	-	54.16	-	7.72	-	206.50	320.32	1.03
31 Oct 1996	1996	349.25	-	405.41	-	56.16	-	8.97	-	217.00	336.61	0.97
31 Oct 1997	1997	406.91	-	454.10	-	47.20	-	9.52	-	243.50	377.72	0.93
31 Oct 1998	1998	422.42	-	479.93	-	57.50	-	10.23	-	234.25	363.37	0.86
31 Oct 1999	1999	487.46	-	537.43	-	49.97	-	9.58	-	273.50	421.79	0.87
31 Oct 2000	2000	506.91	-	558.08	-	51.17	-	10.59	-	309.50	435.68	0.86
31 Oct 2001	2001	377.76	-	423.39	-	45.63	-	8.86	-	280.50	353.90	0.94
31 Oct 2002	2002	314.59	-	366.13	-	51.54	-	4.47	-	233.75	294.92	0.94
31 Oct 2003	2003	357.15	-	409.20	-	52.05	-	4.57	-	265.50	334.98	0.94
31 Oct 2004	2004	375.56	-	410.85	-	35.29	-	5.38	-	262.00	323.65	0.86
31 Oct 2005	2005	430.67	435.62	482.05	481.82	51.37	46.19	5.83	-	313.25	371.39	0.86
31 Oct 2006	2006	515.36	-	541.61	-	26.25	-	5.99	-	385.50	448.96	0.87
31 Oct 2007	2007	571.02	-	598.96	-	27.94	-	7.43	-	439.00	501.23	0.97
31 Oct 2008	2008	385.66	-	412.73	-	27.07	-	8.09	-	305.00	345.14	0.60

Table note: The highlighted record identifies the IFRS accounting standards 2005 adoption year.

Table W.14 Original and Restated Data for Accounting Variables and Market Variables for WITAN INVESTMENT TRUST PLC Surveyed on a Yearly Basis from 1992 to 2008

Date[a]	Year[b]	Accounting Variable[c]								Market Variable		
		Total Shareholders' Equity		Total Assets		Total Liabilities		Net Income[d]		Market Price[e]	Market Value	Market To Book Value
		Original	Restated	Original	Restated	Original	Restated	Original	Restated			
31 Dec 1992	1992	775.98	-	839.35	-	63.38	-	19.53	-	185.00	632.88	0.82
31 Dec 1993	1993	1,022.27	-	1,145.16	-	122.90	-	22.45	-	245.00	919.49	0.90
31 Dec 1994	1994	942.63	-	1,079.72	-	137.09	-	23.26	-	230.00	863.20	0.92
31 Dec 1995	1995	1,093.96	-	1,217.76	-	123.80	-	25.36	-	265.00	994.56	0.91
31 Dec 1996	1996	1,182.71	-	1,294.23	-	111.52	-	26.68	-	266.50	1,027.42	0.87
31 Dec 1997	1997	1,406.37	-	1,531.29	-	124.92	-	30.38	-	319.50	1,199.10	0.85
31 Dec 1998	1998	1,593.62	-	1,725.60	-	131.98	-	30.23	-	367.00	1,377.36	0.86[g]
31 Dec 1999	1999	2,085.47	-	2,149.76	-	64.29	-	28.19	-	477.50	1,773.93	0.85[g]
31 Dec 2000	2000	1,836.68	-	1,998.75	-	162.07	-	27.06	-	478.00	1,681.05	0.92
31 Dec 2001	2001	1,512.22	-	1,676.00	-	163.77	-	29.55	-	391.00	1,375.07	0.91
31 Dec 2002	2002	1,080.26	-	1,242.70	-	162.44	-	13.04	-	261.50	916.13	0.85
31 Dec 2003	2003	1,232.94	-	1,395.94	-	163.01	-	13.58	-	303.00	1,040.87	0.85
31 Dec 2004	2004	1,309.48	1,325.19	1,486.97	1,481.86	177.49	156.67	11.96	11.93	331.50	1,123.60	0.86
31 Dec 2005	2005	1,387.47	-	1,536.54	-	149.07	-	11.38	-	414.00	1,221.25	0.88
31 Dec 2006	2006	1,351.09	-	1,503.53	-	152.44	-	11.08	-	454.50	1,185.21	0.88
31 Dec 2007	2007	1,221.86	-	1,371.49	-	149.63	-	10.45	-	478.50	1,069.09	0.79
31 Dec 2008	2008	881.80	-	1,024.23	-	142.42	-	9.48	-	351.00	752.94	0.62

Table note: The highlighted record identifies the IFRS accounting standards 2005 adoption year.

Table W.15 Original and Restated Data for Accounting Variables and Market Variables for RIT CAPITAL PARTNERS PLC Surveyed on a Yearly Basis from 1992 to 2008

Date[a]	Year[b]	Accounting Variable[c]								Market Variable		
		Total Shareholders' Equity		Total Assets		Total Liabilities		Net Income[d]		Market Price[e]	Market Value	Market To Book Value
		Original	Restated	Original	Restated	Original	Restated	Original	Restated			
31 Mar 1993	1992	349.79	-	485.58	-	135.63	-	1.44	-	117.00	209.60	0.59
31 Mar 1994	1993	427.08	-	531.61	-	104.53	-	5.46	-	171.00	308.44	0.72
31 Mar 1995	1994	419.94	-	585.96	-	166.02	-	-2.36	-	174.00	314.41	0.75
31 Mar 1996	1995	543.67	-	759.67	-	216.00	-	2.72	-	223.00	402.96	0.74
31 Mar 1997	1996	573.96	-	743.93	-	169.97	-	6.13	-	242.50	439.17	0.77[g]
31 Mar 1998	1997	726.68	-	924.31	-	197.63	-	1.39	-	327.00	592.50	0.82
31 Mar 1999	1998	751.07	-	888.77	-	137.71	-	4.67	-	341.00	620.48	0.76
31 Mar 2000	1999	811.39	-	875.83	-	64.44	-	13.81	-	439.00	699.87	0.86
31 Mar 2001	2000	753.19	-	803.42	-	50.23	-	16.86	-	436.50	684.64	0.91
31 Mar 2002	2001	758.28	-	814.11	-	55.83	-	0.57	-	424.50	665.82	0.88[g]
31 Mar 2003	2002	674.71	-	713.84	-	39.14	-	2.04	-	371.50	582.69	0.86
31 Mar 2004	2003	977.47	-	1,103.80	-	126.29	-	-9.46	-	577.50	905.80	0.93
31 Mar 2005	2004	1,109.21	1,113.12	1,239.60	1,230.03	130.25	116.77	-1.49	-2.11	694.00	1,083.88	0.98
31 Mar 2006	2005	1,534.70	-	1,846.19	-	311.50	-	-12.51	-	1,020.00	1,593.01	1.04
31 Mar 2007	2006	1,635.60	-	2,008.60	-	373.00	-	-11.00	-	1,000.00	1,561.78	0.95
31 Mar 2008	2007	1,690.00	-	2,141.40	-	451.40	-	73.90	-	1,147.00	1,775.82	1.09
31 Mar 2009	2008	1,350.50	-	1,767.00	-	416.50	-	34.40	-	831.00	1,283.61	0.76

Table note: The highlighted record identifies the IFRS accounting standards 2005 adoption year.

Table W.16 Original and Restated Data for Accounting Variables and Market Variables for ALLIANCE TRUST PLC Surveyed on a Yearly Basis from 1992 to 2008

Date[a]	Year[b]	Accounting Variable[c]								Market Variable		
		Total Shareholders' Equity		Total Assets		Total Liabilities		Net Income[d]		Market Price[e]	Market Value	Market To Book Value
		Original	Restated	Original	Restated	Original	Restated	Original	Restated			
31 Jan 1993	1992	898.96	-	920.72	-	21.76	-	23.03	-	158.90	800.86	0.89
31 Jan 1994	1993	1,077.29	-	1,104.27	-	26.98	-	23.83	-	203.90	1,027.66	0.96
31 Jan 1995	1994	948.13	-	1,003.52	-	49.71	-	26.83	-	169.80	855.79	0.90
31 Jan 1996	1995	1,226.00	-	1,285.98	-	53.20	-	30.99	-	213.00	1,073.52	0.88
31 Jan 1997	1996	1,357.14	-	1,421.97	-	57.87	-	30.16	-	229.00	1,154.16	0.85
31 Jan 1998	1997	1,562.97	-	1,633.65	-	63.58	-	32.90	-	260.50	1,312.92	0.84
31 Jan 1999	1998	1,728.24	-	1,797.44	-	61.87	-	33.48	-	293.60	1,479.74	0.86
31 Jan 2000	1999	1,886.71	-	1,969.87	-	73.58	-	34.71	-	305.25	1,538.46	0.82
31 Jan 2001	2000	1,973.93	-	2,060.07	-	76.40	-	34.11	-	335.75	1,692.18	0.86
31 Jan 2002	2001	1,672.32	-	1,768.27	-	86.28	-	16.16	-	292.40	1,473.70	0.88
31 Jan 2003	2002	1,204.26	-	1,306.24	-	92.41	-	15.12	-	212.75	1,072.26	0.89
31 Jan 2004	2003	1,474.62	-	1,583.20	-	99.03	-	16.95	-	260.50	1,312.92	0.89
31 Jan 2005	2004	1,623.29	1,634.69	1,742.28	1,737.75	109.15	93.23	16.33	-	274.10	1,381.46	0.85
31 Jan 2006	2005	2,037.92	-	2,207.19	-	155.20	-	16.38	-	349.00	1,758.96	0.86
31 Jan 2007	2006	2,833.87	-	3,000.85	-	160.69	-	21.18	-	365.50	2,455.83	0.86
31 Jan 2008	2007	2,704.79	-	3,109.51	-	397.34	-	23.94	-	338.00	2,271.06	0.80
31 Jan 2009	2008	2,122.98	-	2,414.36	-	284.65	-	18.52	-	268.00	1,800.72	0.66

Table note: The highlighted record identifies the IFRS accounting standards 2005 adoption year.

APPENDIX X CONTROL GROUP DATA

X.1 Control Group Data

This appendix presents in Table X.1 to Table X.12 the data collected for banking related firms registered with the LSE's UK financial services sector. These firms represent the Control group in this research. Summary information for these firms is presented in Table 3.7, labeled 'Control' in the 'Group' column.

For each table presented the following superscript letters represent the corresponding details:

[a] The fiscal year-end financial statement reporting date.

[b] The year used to group the variable.

[c] Reported at the scale 1,000,000 GBP (1 Million GBP).

[d] Net income amounts presented from 1992 to 2001 are the full year figures, and from 2002 to 2008 are the second half-year figures. This in accordance with the convention applied in this study to test the net income variable.

[e] The end of day market price of the firm represented using the scale: 0.01GBP (Great British Pound), equivalent to 1GBX.

[f] Market Value to Book Value ratio is calculated is dividing the variables Market Value by Total Shareholders' Equity.

[g] Market Value to Book Value ratio is calculated is dividing the variables Common Shares Outstanding and Market Price by Total Shareholders' Equity.

Table X.1 Original and Restated Data for Accounting Variables and Market Variables for PACIFIC HORIZON INVESTMENT TRUST PLC Surveyed on a Yearly Basis from 1992 to 2008

Date[a]	Year[b]	Accounting Variable[c]								Market Variable		
		Total Shareholders' Equity		Total Assets		Total Liabilities		Net Income[d]		Market Price[e]	Market Value	Market To Book Value
		Original	Restated	Original	Restated	Original	Restated	Original	Restated			
31 Jul 1992	1992	10.74	-	11.44	-	0.70	-	0.10	-	24.00	9.81	0.91
31 Jul 1993	1993	17.07	-	17.27	-	0.20	-	0.04	-	38.00	15.54	0.91
31 Jul 1994	1994	20.30	-	20.44	-	0.14	-	0.11	-	45.50	18.60	0.92
31 Jul 1995	1995	19.56	-	19.83	-	0.26	-	0.20	-	44.50	18.20	0.93
31 Jul 1996	1996	40.27	-	40.74	-	0.47	-	0.35	-	48.00	37.84	0.94
31 Jul 1997	1997	46.89	-	47.39	-	0.50	-	0.40	-	51.00	40.21	0.86
31 Jul 1998	1998	22.59	-	24.02	-	1.43	-	0.89	-	23.25	18.33	0.81
31 Jul 1999	1999	34.95	-	38.44	-	3.49	-	0.23	-	37.00	29.17	0.83
31 Jul 2000	2000	43.64	-	54.18	-	10.54	-	0.18	-	46.75	36.86	0.84
31 Jul 2001	2001	37.71	-	38.33	-	0.62	-	0.51	-	38.50	30.35	0.80
31 Jul 2002	2002	38.73	-	39.39	-	0.66	-	0.27	-	45.50	34.80	0.90
31 Jul 2003	2003	40.80	-	41.43	-	0.63	-	0.30	-	48.25	36.90	0.90
31 Jul 2004	2004	47.31	-	48.27	-	0.96	-	0.53	-	56.75	43.41	0.92
31 Jul 2005	2005	66.80	67.37	68.30	68.03	1.50	0.65	0.71	-	85.50	65.40	0.98
31 Jul 2006	2006	81.39	-	89.78	-	8.39	-	0.73	-	101.25	77.44	0.95
31 Jul 2007	2007	130.08	-	130.85	-	0.77	-	0.68	-	171.75	133.86	1.03
31 Jul 2008	2008	105.17	-	105.79	-	0.62	-	1.04	-	128.00	100.21	0.95[g]

Table note: The highlighted record identifies for the samples the IFRS accounting standards 2005 adoption year.

Table X.2 Original and Restated Data for Accounting Variables and Market Variables for BAILLIE GIFFORD SHIN NIPPON PLC Surveyed on a Yearly Basis from 1992 to 2008

Date[a]	Year[b]	Accounting Variable[c]								Market Variable		
		Total Shareholders' Equity		Total Assets		Total Liabilities		Net Income[d]		Market Price[e]	Market Value	Market To Book Value
		Original	Restated	Original	Restated	Original	Restated	Original	Restated			
31 Jan 1993	1992	19.76	-	19.84	-	0.08	-	-0.13	-	92.00	14.75	0.75
31 Jan 1994	1993	28.82	-	29.08	-	0.26	-	-0.13	-	195.00	31.26	1.08
31 Jan 1995	1994	42.61	-	42.75	-	0.14	-	-0.25	-	137.00	39.33	0.92
31 Jan 1996	1995	43.03	-	50.94	-	7.91	-	-0.22	-	137.50	39.66	0.92
31 Jan 1997	1996	30.86	-	38.90	-	8.04	-	-0.40	-	84.50	26.88	0.87
31 Jan 1998	1997	23.88	-	31.76	-	7.88	-	-0.29	-	63.25	20.12	0.84
31 Jan 1999	1998	25.47	-	34.38	-	8.90	-	0.09	-	60.00	19.09	0.75
31 Jan 2000	1999	92.39	-	112.33	-	19.94	-	-0.73	-	246.00	78.25	0.85
31 Jan 2001	2000	50.00	-	61.82	-	11.82	-	-0.80	-	130.00	40.88	0.82
31 Jan 2002	2001	38.18	-	48.58	-	10.40	-	-0.28	-	100.50	31.05	0.81
31 Jan 2003	2002	28.29	-	35.68	-	7.39	-	-0.24	-	79.50	24.57	0.87
31 Jan 2004	2003	44.11	-	52.01	-	7.90	-	-0.19	-	126.75	39.17	0.89
31 Jan 2005	2004	54.24	-	68.90	-	14.67	-	-0.26	-	165.75	50.72	0.94
31 Jan 2006	2005	87.08	-	102.10	-	15.02	-	-0.33	-	304.00	93.02	1.07
31 Jan 2007	2006	65.18	-	77.77	-	12.59	-	-0.15	-	205.00	62.73	0.96
31 Jan 2008	2007	45.16	-	56.79	-	11.63	-	-0.02	-	129.25	40.20	0.62
31 Jan 2009	2008	38.26	-	49.34	-	11.08	-	0.23	-	95.75	29.78	0.66

Table note: The highlighted record identifies for the samples the IFRS accounting standards 2005 adoption year.

Table X.3 Original and Restated Data for Accounting Variables and Market Variables for DUNEDIN SMALLER COMPANIES INVESTMENT TRUST Surveyed on a Yearly Basis from 1992 to 2008

Date[a]	Year[b]	Accounting Variable[c]								Market Variable		
		Total Shareholders' Equity		Total Assets		Total Liabilities		Net Income[d]		Market Price[e]	Market Value	Market To Book Value
		Original	Restated	Original	Restated	Original	Restated	Original	Restated			
31 Oct 1992	1992	37.52	-	38.98	-	1.46	-	1.82	-	43.80	36.79	0.99
31 Oct 1993	1993	51.39	-	53.07	-	1.68	-	1.47	-	58.00	48.72	0.96
31 Oct 1994	1994	52.93	-	59.61	-	6.67	-	1.51	-	61.20	51.41	0.97
31 Oct 1995	1995	58.85	-	65.18	-	6.33	-	1.31	-	65.20	54.77	0.93
31 Oct 1996	1996	67.61	-	74.16	-	6.55	-	1.60	-	69.20	58.13	0.86
31 Oct 1997	1997	70.38	-	87.71	-	17.33	-	1.98	-	69.30	58.21	0.83
31 Oct 1998	1998	60.14	-	77.23	-	17.10	-	2.46	-	58.40	49.06	0.82
31 Oct 1999	1999	85.51	-	103.17	-	17.66	-	2.58	-	76.70	64.43	0.75
31 Oct 2000	2000	112.71	-	130.92	-	18.21	-	2.51	-	104.00	86.84	0.77
31 Oct 2001	2001	80.23	-	102.94	-	22.71	-	2.24	-	78.20	65.30	0.82
31 Oct 2002	2002	57.22	-	74.41	-	17.18	-	0.82	-	52.80	44.09	0.77
31 Oct 2003	2003	74.75	-	98.77	-	24.02	-	0.99	-	68.30	56.51	0.76
31 Oct 2004	2004	83.63	-	101.63	-	18.00	-	1.25	-	80.60	65.58	0.79
31 Oct 2005	2005	98.77	100.52	116.66	116.62	17.89	16.10	1.45	-	102.60	83.49	0.85
31 Oct 2006	2006	131.40	-	147.46	-	16.06	-	1.70	-	144.50	117.58	0.89
31 Oct 2007	2007	82.36	-	92.94	-	10.57	-	1.34	-	142.50	70.29	0.85
31 Oct 2008	2008	43.17	-	51.38	-	8.21	-	1.43	-	73.75	35.34	0.43

Table note: The highlighted record identifies for the samples the IFRS accounting standards 2005 adoption year.

Table X.4 Original and Restated Data for Accounting Variables and Market Variables for MURRAY INTERNATIONAL TRUST PLC Surveyed on a Yearly Basis from 1992 to 2008

Date[a]	Year[b]	Accounting Variable[c]								Market Variable		
		Total Shareholders' Equity		Total Assets		Total Liabilities		Net Income[d]		Market Price[e]	Market Value	Market To Book Value
		Original	Restated	Original	Restated	Original	Restated	Original	Restated			
31 Dec 1992	1992	353.29	-	478.16	-	124.87	-	12.90	-	278.00	324.46	0.92
31 Dec 1993	1993	460.58	-	596.93	-	136.35	-	13.14	-	392.00	464.11	1.03
31 Dec 1994	1994	397.32	-	533.17	-	135.85	-	15.96	-	332.00	393.07	1.01
31 Dec 1995	1995	477.04	-	606.35	-	129.31	-	16.20	-	381.50	451.97	0.96
31 Dec 1996	1996	512.34	-	596.91	-	84.57	-	17.13	-	406.50	482.11	0.95
31 Dec 1997	1997	580.69	-	672.07	-	91.39	-	17.92	-	445.00	528.18	0.92
31 Dec 1998	1998	626.86	-	730.09	-	103.23	-	18.38	-	436.00	517.83	0.83[g]
31 Dec 1999	1999	653.62	-	821.09	-	167.47	-	16.70	-	489.00	540.48	0.83[g]
31 Dec 2000	2000	601.16	-	739.20	-	138.03	-	14.31	-	500.00	518.08	0.87
31 Dec 2001	2001	419.48	-	539.91	-	120.43	-	12.26	-	403.00	356.30	0.86
31 Dec 2002	2002	308.75	-	414.71	-	105.96	-	4.70	-	298.00	257.38	0.84
31 Dec 2003	2003	371.39	-	481.13	-	109.74	-	4.33	-	388.00	335.28	0.90
31 Dec 2004	2004	408.82	413.32	522.08	521.43	113.26	108.11	6.10	-	436.50	377.54	0.94
31 Dec 2005	2005	523.63	-	614.19	-	90.56	-	6.58	-	562.00	486.08	0.93
31 Dec 2006	2006	579.27	-	663.20	-	83.93	-	7.14	-	618.00	534.92	0.94
31 Dec 2007	2007	646.24	-	728.64	-	82.40	-	8.05	-	662.00	573.19	1.00
31 Dec 2008	2008	568.83	-	739.72	-	170.89	-	9.69	-	589.00	527.11	0.83

Table note: The highlighted record identifies for the samples the IFRS accounting standards 2005 adoption year.

Table X.5 Original and Restated Data for Accounting Variables and Market Variables for THROGMORTON TRUST PLC Surveyed on a Yearly Basis from 1992 to 2008

Date[a]	Year[b]	Accounting Variable[c]								Market Variable		
		Total Shareholders' Equity		Total Assets		Total Liabilities		Net Income[d]		Market Price[e]	Market Value	Market To Book Value
		Original	Restated	Original	Restated	Original	Restated	Original	Restated			
30 Nov 1992	1992	149.30	-	280.68	-	130.92	-	3.67	-	46.50	131.20	0.78
30 Nov 1993	1993	221.03	-	314.58	-	93.11	-	10.81	-	73.00	221.77	0.91
30 Nov 1994	1994	215.53	-	280.86	-	64.82	-	7.19	-	74.50	226.33	0.94
30 Nov 1995	1995	232.66	-	296.14	-	62.98	-	5.45	-	80.00	243.04	0.95
30 Nov 1996	1996	275.13	-	332.18	-	57.05	-	6.36	-	77.75	236.20	0.86
30 Nov 1997	1997	290.35	-	350.86	-	60.51	-	6.88	-	84.50	256.69	0.89
30 Nov 1998	1998	252.99	-	312.56	-	59.57	-	7.44	-	67.75	205.81	0.82
30 Nov 1999	1999	328.01	-	388.90	-	60.89	-	7.45	-	89.25	254.15	0.77
30 Nov 2000	2000	283.72	-	337.32	-	53.61	-	4.47	-	94.25	233.99	0.82
30 Nov 2001	2001	245.21	-	295.80	-	50.60	-	3.36	-	81.00	192.54	0.79
30 Nov 2002	2002	183.83	-	233.55	-	49.73	-	1.84	-	59.00	139.98	0.76
30 Nov 2003	2003	243.44	-	285.14	-	41.71	-	2.17	-	84.00	194.88	0.80
30 Nov 2004	2004	311.03	-	349.15	-	38.12	-	2.42	-	110.25	253.31	0.81
30 Nov 2005	2005	316.26	313.38	357.04	351.88	40.78	38.49	2.19	-	142.00	259.30	0.82
30 Nov 2006	2006	326.21	-	362.89	-	36.68	-	2.26	-	164.25	268.68	0.82
30 Nov 2007	2007	272.51	-	311.80	-	39.29	-	1.54	-	152.00	212.89	0.78
30 Nov 2008	2008	77.03	-	102.18	-	25.15	-	3.36	-	62.75	51.68	0.19

Table note: The highlighted record identifies for the samples the IFRS accounting standards 2005 adoption year.

Table X.6 Original and Restated Data for Accounting Variables and Market Variables for BRITISH ASSETS TRUST PLC Surveyed on a Yearly Basis from 1992 to 2008

Date[a]	Year[b]	Accounting Variable[c]								Market Variable		
		Total Shareholders' Equity		Total Assets		Total Liabilities		Net Income[d]		Market Price[e]	Market Value	Market To Book Value
		Original	Restated	Original	Restated	Original	Restated	Original	Restated			
30 Sep 1992	1992	350.28	-	649.68	-	207.66	-	15.24	-	79.50	305.28	0.88
30 Sep 1993	1993	424.25	-	781.28	-	236.05	-	16.12	-	105.50	405.12	0.97
30 Sep 1994	1994	396.99	-	748.59	-	234.28	-	16.12	-	94.00	360.96	0.92
30 Sep 1995	1995	445.21	-	841.79	-	263.24	-	15.49	-	92.50	298.37	0.84
30 Sep 1996	1996	469.07	-	704.91	-	235.84	-	18.53	-	97.50	314.50	0.68
30 Sep 1997	1997	548.97	-	617.29	-	68.32	-	17.28	-	119.50	458.88	0.84
30 Sep 1998	1998	520.17	-	617.47	-	97.30	-	18.77	-	113.75	366.91	0.71
30 Sep 1999	1999	578.06	-	681.46	-	103.40	-	19.12	-	135.25	430.84	0.75
30 Sep 2000	2000	642.23	-	761.72	-	119.49	-	18.21	-	158.50	486.63	0.89
30 Sep 2001	2001	492.42	-	648.88	-	156.46	-	21.66	-	118.50	359.59	0.73
30 Sep 2002	2002	334.31	-	486.67	-	152.36	-	7.63	-	90.25	318.91	0.95
30 Sep 2003	2003	370.82	-	501.91	-	131.08	-	7.91	-	98.75	348.94	0.94
30 Sep 2004	2004	386.18	-	517.03	-	130.85	-	7.14	-	101.00	341.19	0.88
30 Sep 2005	2005	452.84	460.86	587.75	586.98	134.91	126.12	8.04	-	126.50	408.99	0.90
30 Sep 2006	2006	470.39	-	595.65	-	125.26	-	12.08	-	132.50	408.78	0.87
30 Sep 2007	2007	485.77	-	612.01	-	126.24	-	8.98	-	140.75	423.67	0.87
30 Sep 2008	2008	333.52	-	424.06	-	90.55	-	9.99	-	100.75	294.81	0.61

Table note: The highlighted record identifies for the samples the IFRS accounting standards 2005 adoption year.

Table X.7 Original and Restated Data for Accounting Variables and Market Variables for THE EDINBURGH INVESTMENT TRUST PLC Surveyed on a Yearly Basis from 1992 to 2008

Date[a]	Year[b]	Accounting Variable[c]								Market Variable		
		Total Shareholders' Equity		Total Assets		Total Liabilities		Net Income[d]		Market Price[e]	Market Value	Market To Book Value
		Original	Restated	Original	Restated	Original	Restated	Original	Restated			
31 Mar 1993	1992	885.62	-	1,122.65	-	237.03	-	27.16	-	264.00	756.45	0.86
31 Mar 1994	1993	1,006.85	-	1,239.09	-	232.24	-	29.90	-	306.50	900.56	0.90
31 Mar 1995	1994	941.60	-	1,180.77	-	239.17	-	30.46	-	292.50	859.42	0.91
31 Mar 1996	1995	1,126.63	-	1,286.43	-	159.81	-	33.88	-	330.50	971.07	0.86
31 Mar 1997	1996	1,235.96	-	1,368.26	-	132.30	-	36.91	-	364.50	1,070.97	0.87[g]
31 Mar 1998	1997	1,653.00	-	1,900.26	-	247.26	-	42.53	-	500.50	1,470.55	0.89
31 Mar 1999	1998	1,644.26	-	1,869.42	-	225.16	-	34.42	-	464.50	1,364.77	0.83
31 Mar 2000	1999	1,636.94	-	1,870.53	-	233.59	-	25.98	-	534.50	1,410.22	0.86
31 Mar 2001	2000	1,373.28	-	1,603.42	-	230.14	-	30.96	-	475.50	1,202.37	0.88
31 Mar 2002	2001	1,201.58	-	1,443.12	-	241.54	-	14.40	-	422.50	1,043.56	0.87[g]
31 Mar 2003	2002	681.32	-	901.80	-	220.48	-	12.51	-	231.00	560.86	0.82
31 Mar 2004	2003	883.64	-	1,107.21	-	223.56	-	14.36	-	300.50	729.60	0.83
31 Mar 2005	2004	981.77	1,003.13	1,214.32	-	232.55	211.19	15.62	-	329.75	789.58	0.81
31 Mar 2006	2005	1,214.60	-	1,443.57	-	228.97	-	18.51	-	429.50	1,004.80	0.83
31 Mar 2007	2006	1,205.23	-	1,416.05	-	210.82	-	19.51	-	481.00	1,036.54	0.86
31 Mar 2008	2007	945.04	-	1,153.42	-	208.39	-	21.98	-	403.25	799.62	0.66
31 Mar 2009	2008	641.40	-	845.17	-	203.77	-	17.63	-	292.50	570.72	0.60

Table note: The highlighted record identifies for the samples the IFRS accounting standards 2005 adoption year.

Table X.8 Original and Restated Data for Accounting Variables and Market Variables for SCOTTISH INVESTMENT TRUST PLC Surveyed on a Yearly Basis from 1992 to 2008

Date[a]	Year[b]	Accounting Variable[c]								Market Variable		
		Total Shareholders' Equity		Total Assets		Total Liabilities		Net Income[d]		Market Price[e]	Market Value	Market To Book Value
		Original	Restated	Original	Restated	Original	Restated	Original	Restated			
31 Oct 1992	1992	556.17	-	654.95	-	98.78	-	12.26	-	176.00	447.53	0.81
31 Oct 1993	1993	716.27	-	845.22	-	128.95	-	13.94	-	225.00	572.49	0.80
31 Oct 1994	1994	675.37	-	804.72	-	129.35	-	14.01	-	216.00	551.31	0.82
31 Oct 1995	1995	801.15	-	962.86	-	161.71	-	16.37	-	242.50	687.35	0.86
31 Oct 1996	1996	916.08	-	1,071.78	-	155.70	-	17.47	-	274.50	778.05	0.85
31 Oct 1997	1997	1,024.18	-	1,115.13	-	90.95	-	17.82	-	306.00	867.34	0.85
31 Oct 1998	1998	1,099.19	-	1,198.51	-	99.33	-	18.18	-	344.00	975.04	0.89
31 Oct 1999	1999	1,287.09	-	1,379.94	-	92.85	-	18.51	-	393.50	1,085.87	0.84
31 Oct 2000	2000	1,356.86	-	1,597.79	-	240.93	-	20.67	-	457.00	1,150.74	0.85
31 Oct 2001	2001	908.07	-	1,146.07	-	238.01	-	21.71	-	359.00	810.65	0.89
31 Oct 2002	2002	671.44	-	912.41	-	240.97	-	9.51	-	259.00	552.46	0.82
31 Oct 2003	2003	719.52	-	955.04	-	235.53	-	10.27	-	281.00	590.95	0.82
31 Oct 2004	2004	733.47	-	891.84	-	158.37	-	9.64	-	298.75	624.12	0.85
31 Oct 2005	2005	889.00	894.41	1,050.90	1,049.15	161.90	0.00	9.44	-	377.00	787.59	0.89
31 Oct 2006	2006	730.59	-	840.79	-	110.20	-	7.55	-	451.00	645.60	0.88
31 Oct 2007	2007	802.35	-	911.71	-	109.36	-	7.83	-	529.00	710.28	0.89
31 Oct 2008	2008	525.68	-	634.71	-	109.03	-	5.86	-	372.00	482.74	0.60

Table note: The highlighted record identifies for the samples the IFRS accounting standards 2005 adoption year.

Table X.9 Original and Restated Data for Accounting Variables and Market Variables for MONKS INVESTMENT TRUST PLC Surveyed on a Yearly Basis from 1992 to 2008

Date[a]	Year[b]	Accounting Variable[c]								Market Variable		
		Total Shareholders' Equity		Total Assets		Total Liabilities		Net Income[d]		Market Price[e]	Market Value	Market To Book Value
		Original	Restated	Original	Restated	Original	Restated	Original	Restated			
30 Apr 1993	1992	366.41	-	457.81	-	91.41	-	6.13	-	81.60	316.58	0.86
30 Apr 1994	1993	459.01	-	507.02	-	48.01	-	5.90	-	107.00	415.12	0.90
30 Apr 1995	1994	442.39	-	594.38	-	151.98	-	8.38	-	104.20	404.25	0.91
30 Apr 1996	1995	556.53	-	611.12	-	54.60	-	10.12	-	120.60	467.88	0.84
30 Apr 1997	1996	599.23	-	650.22	-	50.98	-	9.58	-	129.20	501.24	0.70
30 Apr 1998	1997	719.68	-	790.84	-	71.16	-	9.49	-	157.90	612.59	0.85
30 Apr 1999	1998	776.07	-	885.25	-	109.19	-	10.14	-	171.00	656.98	0.85
30 Apr 2000	1999	818.08	-	953.89	-	135.81	-	5.07	-	201.90	684.64	0.84
30 Apr 2001	2000	756.49	-	876.69	-	120.20	-	5.89	-	219.20	668.82	0.88
30 Apr 2002	2001	676.39	-	798.49	-	122.10	-	2.38	-	195.25	595.75	0.88
30 Apr 2003	2002	493.69	-	612.22	-	118.53	-	1.86	-	143.00	420.93	0.85
30 Apr 2004	2003	612.77	-	696.76	-	83.99	-	2.12	-	173.00	509.21	0.83
30 Apr 2005	2004	649.15	651.88	738.90	738.14	89.75	86.26	3.60	-	184.50	537.55	0.83
30 Apr 2006	2005	935.20	-	1,125.61	-	190.41	-	4.71	-	290.00	833.34	0.89
30 Apr 2007	2006	963.44	-	1,115.80	-	152.36	-	7.75	-	300.25	842.66	0.88
30 Apr 2008	2007	1,030.85	-	1,116.32	-	85.46	-	8.08	-	348.00	919.35	0.95
30 Apr 2009	2008	680.76	-	773.02	-	92.27	-	7.38	-	236.50	623.52	0.60

Table note: The highlighted record identifies for the samples the IFRS accounting standards 2005 adoption year.

Table X.10 Original and Restated Data for Accounting Variables and Market Variables for THE MERCANTILE INVESTMENT TRUST PLC Surveyed on a Yearly Basis from 1992 to 2008

Date[a]	Year[b]	Accounting Variable[c]								Market Variable		
		Total Shareholders' Equity		Total Assets		Total Liabilities		Net Income[d]		Market Price[e]	Market Value	Market To Book Value
		Original	Restated	Original	Restated	Original	Restated	Original	Restated			
31 Jan 1993	1992	424.91	-	443.87	-	18.96	-	6.53	-	256.00	369.94	0.88
31 Jan 1994	1993	538.92	-	550.05	-	11.13	-	9.21	-	341.00	492.77	0.92
31 Jan 1995	1994	437.95	-	460.35	-	22.40	-	9.97	-	265.00	382.95	0.88
31 Jan 1996	1995	515.78	-	583.86	-	68.09	-	13.60	-	292.00	421.96	0.82
31 Jan 1997	1996	618.46	-	696.89	-	78.43	-	15.87	-	362.00	523.12	0.85
31 Jan 1998	1997	642.91	-	737.38	-	94.47	-	15.94	-	369.50	533.96	0.84
31 Jan 1999	1998	585.82	-	719.50	-	133.69	-	16.54	-	321.50	464.60	0.79
31 Jan 2000	1999	964.43	-	1,120.23	-	155.80	-	19.18	-	560.50	795.48	0.82
31 Jan 2001	2000	1,026.52	-	1,213.08	-	186.57	-	24.12	-	635.50	863.16	0.84
31 Jan 2002	2001	875.68	-	1,098.58	-	222.90	-	11.44	-	567.00	770.14	0.88
31 Jan 2003	2002	590.30	-	814.51	-	224.21	-	9.97	-	408.50	554.85	0.94
31 Jan 2004	2003	955.51	-	1,200.00	-	244.49	-	10.42	-	620.00	842.13	0.88
31 Jan 2005	2004	1,135.03	1,144.53	1,358.13	-	223.10	213.60	10.34	32.61	713.50	969.13	0.85
31 Jan 2006	2005	1,444.99	-	1,644.48	-	199.49	-	12.53	-	965.00	1,278.57	0.88
31 Jan 2007	2006	1,743.85	-	1,939.35	-	195.50	-	16.28	-	1,258.00	1,573.24	0.90
31 Jan 2008	2007	1,208.15	-	1,441.46	-	233.31	-	18.69	-	1,020.00	1,063.89	0.61
31 Jan 2009	2008	697.30	-	890.07	-	192.77	-	18.53	-	592.50	606.26	0.50

Table note: The highlighted record identifies for the samples the IFRS accounting standards 2005 adoption year.

Table X.11 Original and Restated Data for Accounting Variables and Market Variables for THE FOREIGN & COLONIAL INVESTMENT TRUST PLC Surveyed on a Yearly Basis from 1992 to 2008

Date[a]	Year[b]	Accounting Variable[c]								Market Variable		
		Total Shareholders' Equity		Total Assets		Total Liabilities		Net Income[d]		Market Price[e]	Market Value	Market To Book Value
		Original	Restated	Original	Restated	Original	Restated	Original	Restated			
31 Dec 1992	1992	1,187.57	-	1,380.74	-	184.92	-	19.21	-	105.00	1,103.38	0.93
31 Dec 1993	1993	1,558.64	-	1,784.28	-	201.05	-	24.73	-	147.00	1,544.73	0.99
31 Dec 1994	1994	1,418.21	-	1,694.38	-	250.81	-	22.75	-	136.00	1,429.42	1.01
31 Dec 1995	1995	1,687.37	-	1,873.89	-	154.79	-	26.80	-	162.00	1,702.62	1.01
31 Dec 1996	1996	1,772.87	-	1,974.61	-	201.78	-	30.57	-	150.25	1,579.13	0.89
31 Dec 1997	1997	2,140.61	-	2,278.68	-	138.07	-	30.06	-	175.75	1,847.13	0.86
31 Dec 1998	1998	2,392.88	-	2,619.34	-	226.46	-	34.18	-	188.25	1,978.51	0.83[g]
31 Dec 1999	1999	3,022.31	-	3,259.22	-	236.91	-	30.38	-	247.50	2,525.31	0.84[g]
31 Dec 2000	2000	2,929.41	-	3,165.77	-	236.36	-	37.54	-	267.50	2,639.04	0.90
31 Dec 2001	2001	2,354.86	-	2,595.99	-	241.13	-	38.29	-	221.50	2,102.04	0.89
31 Dec 2002	2002	1,697.45	-	1,940.62	-	243.18	-	14.35	-	163.00	1,546.88	0.91
31 Dec 2003	2003	2,041.75	-	2,261.78	-	220.03	-	14.27	-	188.50	1,788.87	0.88
31 Dec 2004	2004	2,112.46	2,131.30	2,349.85	2,347.68	237.38	216.38	17.27	-	194.50	1,775.81	0.84
31 Dec 2005	2005	2,414.00	-	2,536.20	-	122.20	-	18.95	-	258.50	2,138.45	0.89
31 Dec 2006	2006	2,408.14	-	2,616.05	-	207.91	-	17.12	-	284.50	2,133.68	0.89
31 Dec 2007	2007	2,490.95	-	2,708.07	-	217.12	-	18.42	-	318.75	2,184.45	0.91
31 Dec 2008	2008	1,782.45	-	2,007.80	-	225.35	-	20.25	-	228.50	1,551.56	0.62

Table note: The highlighted record identifies for the samples the IFRS accounting standards 2005 adoption year.

Table X.12 Original and Restated Data for Accounting Variables and Market Variables for SCOTTISH MORTGAGE INVESTMENT TRUST PLC Surveyed on a Yearly Basis from 1992 to 2008

Date[a]	Year[b]	Accounting Variable[c]								Market Variable		
		Total Shareholders' Equity		Total Assets		Total Liabilities		Net Income[d]		Market Price[e]	Market Value	Market To Book Value
		Original	Restated	Original	Restated	Original	Restated	Original	Restated			
31 Mar 1993	1992	794.53	-	1,042.82	-	248.29	-	13.90	-	184.50	665.53	0.84
31 Mar 1994	1993	928.65	-	1,070.01	-	141.35	-	14.85	-	219.00	789.98	0.85
31 Mar 1995	1994	871.34	-	1,094.93	-	223.59	-	18.80	-	217.00	782.76	0.90
31 Mar 1996	1995	1,113.14	-	1,335.84	-	222.70	-	21.39	-	268.75	969.43	0.87
31 Mar 1997	1996	1,216.07	-	1,485.96	-	269.89	-	24.60	-	290.50	1,047.89	0.86[g]
31 Mar 1998	1997	1,574.10	-	1,897.04	-	322.94	-	21.69	-	384.00	1,385.16	0.88
31 Mar 1999	1998	1,645.90	-	1,881.37	-	235.47	-	20.26	-	375.50	1,354.50	0.82
31 Mar 2000	1999	1,927.58	-	2,225.06	-	297.48	-	14.62	-	493.50	1,671.58	0.87
31 Mar 2001	2000	1,464.29	-	1,677.93	-	213.64	-	25.21	-	377.00	1,239.27	0.85
31 Mar 2002	2001	1,302.99	-	1,528.19	-	225.21	-	10.81	-	369.00	1,140.89	0.88[g]
31 Mar 2003	2002	844.32	-	1,077.02	-	232.70	-	11.01	-	234.50	698.82	0.82
31 Mar 2004	2003	1,127.78	-	1,375.29	-	247.51	-	12.79	-	305.00	906.78	0.80
31 Mar 2005	2004	1,229.44	1,242.62	1,470.28	1,468.54	240.84	225.92	10.72	-	333.00	984.36	0.80
31 Mar 2006	2005	1,753.35	-	1,989.15	-	235.80	-	11.80	-	521.50	1,502.31	0.86
31 Mar 2007	2006	1,769.87	-	2,076.11	-	306.24	-	13.11	-	542.00	1,525.52	0.86
31 Mar 2008	2007	1,836.44	-	2,292.53	-	456.09	-	11.78	-	600.00	1,643.94	0.93
31 Mar 2009	2008	1,080.34	-	1,406.83	-	326.50	-	9.77	-	353.00	961.89	0.52

Table note: The highlighted record identifies for the samples the IFRS accounting standards 2005 adoption year.

APPENDIX Y CAPITAL EVENTS THAT ADJUST MARKET PRICE

This appendix provides events that are applied by Thomson Reuters to adjust potentially levels of the market price variable used in this study. The events presented are adapted from information sourced from Thomson Reuters in the month of November 2011 and screen prints from the Thomson Reuters Datastream database interface.

Y.1 Capital Events that Adjust Market Price

The events identified in this study to effect levels of the market price variable are:

Bonus/Scrip Issue in same stock
Bonus/Scrip Issue into different stock
Rights Issue or in same stock
Rights Issue into different stock
Stock Dividend
Stock Split/Subdivision
Consolidation/Reverse Split
Open/Public offer
Capital write-up
Capital write-down
Capital Repayment
Exchange Into
Multiple Issues
Demerger
Merger

Call Payments
Registrations
Redemptions
Capital Reorganisation
Conversions
Issues Pending
Distributions
Miscellaneous

The following sections provide descriptions for some of these stated events. The definitions presented are adapted from information sourced from Thomson Reuters in the month of November 2011.

Y.1.1 Bonus/Scrip Issue in Same Stock

The "free" issue of new shares to existing shareholders, on a new for old basis. Shareholders are sent definitive certificates indicating their new number of shares on the ex-dividend date of the bonus issue. The issue is free in so much as the shareholder does not pay for the shares. However, because of the increased number of shares in the market, the price of the firm's single share is adjusted downward accordingly.

Y.1.2 Bonus/Scrip Issue Into Different Stock

The "free" issue of new *different class* of shares to existing shareholders, on a new for old basis. This is the same as the event *Bonus/Scrip Issue in same stock*, the difference being that the shareholders are provided a different class of shares. This event does not adjust a firm's share price.

Y.1.3 Stock Dividend

A stock dividend is where profits are turned into share capital and then issued to shareholders as a dividend. Thomson Reuters does not adjust the market price for stock dividends explicitly. However, they are adjusted at the exchange level. Therefore, when recorded by Thomson Reuters a firm's share price has been adjusted. The price of a firm's shares generally adjust downwards for this stock dividend event.

Y.1.4 Stock Split/Sub Division

This event is specified as the splitting of the nominal value of a stock to increase the number of shares in issue without issuing new shares. This event has the effect of lowering the share's market price. After this event, shareholders are issued with new share certificates, indicating the new nominal value of the stock and the new number of shares held on the effective date of the subdivision.

Y.1.5 Consolidation/Reverse Split

Increasing the nominal value of a share to reduce the number of shares in issue. In this event, several shares of a lower nominal value are consolidated into one share of a higher nominal value. This event has the effect of increasing the share's market price to adjust for the decrease in the number of shares. Shareholders are issued with new share certificates on the effective date of the consolidation.

Y.1.6 Rights Issue Into Same Class

The issue of “new” shares to existing shareholders in order to raise additional capital for the firm. The shares are issued on a “new” for “old” basis at a favorable market price. This event does not explicitly adjust the market price of shares.

Y.1.7 Capital Write-Up

The increase of the nominal value of the stock without reducing the number of shares in issue. Capital write-ups are financed by the firm’s reserves and can only be implemented after a court sanction. There is no change in the number of shares or to the share price. The firm would do this to take money out of its capital reserves by increasing the nominal value of its shares.

Y.1.8 Capital Write-Down

The decrease of the nominal value of a stock without increasing the number of shares in issue. Capital write-downs are used to pull money back into the firm’s reserves and can only be implemented by a court sanction. This event does not cause a change to the number of shares or to the share price.

Y.1.9 Capital Repayment

An event where a firm makes a payment to reduce an amount of capital liability. Shareholders retain the same number of shares as before an issue became effective and there will be a decrease in the price of the shares.

Y.1.10 Exchange Into

Thomson Reuters determines that there is no formal definition for the *Exchange into* event. However, it is stated that based on the terms (type of issue) there is an adjustment for the *Exchange into* capital issues. Generally, this would reduce the market price per share.

Y.1.11 Multiple Issues

Thomson Reuters determines that there is no formal definition for the *Multiple issues* event. However, it is stated that based on the terms (type of issue) there is an adjustment for the *multiple* capital issues. Generally, this would reduce the market price per share.

Y.1.12 Demerger

The splitting of one firm into two or more firms by spinning off one or more of the firm's subsidiaries. Shareholders receive documents informing them of the demerger and the share certificates in the new firm are received on the effective date of the issue. The share price of the original firm is "split" based on the share price of the new firm. The original firms share price is reflected by factors that include the terms of the demerger and the size of the new firm.

Y.1.13 Merger

When two or more firms combine activities to form a new firm, they are said to merge. The directors of the firms involved meet, discuss and agree the merger. The shareholders of each firm involved are sent documents detailing the terms and conditions the directors propose. Shareholders have no vote on the proposal. A merger can take place between two listed firms or between a listed firm and a non-listed firm. The merged firm's share price is reflected by factors that include the terms of the merger and the size of the new firm.

APPENDIX Z CALCULATED AND OMITTED DATA

Z.1 Calculated and Omitted Data

This appendix presents in Table Z.1 variable items that are calculated or omitted from analysis. Some items are calculated due to calculation conventions applied in this study. Some items are omitted due to minor data irregularities and missing data. In addition, this table discloses items that are collected after *1*st *January 1991*. This date relates to the starting time range group year 1992 (see Section 3.7.7). This study considers items that are calculated, omitted, or collected after the *start date* does not significantly affect the findings presented in this research.

Table Z.1 Calculated and Part Omitted Data Items

The Data Changed column specifies if the item presented in the Data Item column is calculated or omitted for a specified date or date range(s) presented in the Notable Dates column. The Description column provides further details for the data item's omission or calculation.

Data Changed	Data Item	Notable Dates	Description
Calculated	Market-to-Book Ratio	31st December 1998 and 31st December 1999	For HSBC HOLDINGS PLC the 31st December 1998 and the 31st December 1999 market-to-book ratio values are calculated using the ratio of the Total Number of Shares Outstanding multiplied by the Adjusted Share Price divided by the Total Shareholders' Equity. The remaining market-to-book values are calculated using the ratio of the Market Value divided by the Total Shareholders' Equity.
Calculated	Book-to-Market Ratio	General	The Book-to-Market ratio is calculated as the reciprocal of the Market-to-Book value. The Market-to-Book value is stated to maintain consistency with the data providers published data.
Calculated	Value-at-Risk Calculation	30th December 1994	For PROVIDENT FINANCIAL PLC from 30th December 1994 the Value-at-Risk values were calculated using the Excel PERCENTILE function.
Calculated	Value-at-Risk Calculation	General	The market price returns for all time horizons for the sample and control Value-at-Risk calculations were performed on an absolute day basis, for example, for a 500-day time horizon, the return was calculated on a 500 day basis and not a 501 day basis. However, the return for the 1-day time horizon Value-at-Risk was calculated on a 2 day basis.
Calculated	Value-at-Risk Calculation	General	The *returns* and percentage changes for all time horizons for the GDP and selected indices Value-at-Risk calculations were performed on an absolute day basis, i.e. for a 250-day time horizon, the *returns* and percentage changes were calculated on a 250-day basis and not a 251 day basis

Table Z.1 (Continued)

Data Changed	Data Item	Notable Dates	Description
Part omitted	Adjusted Close Price	31st December 1992, 31st December 1993	For LLOYDS BANKING GROUP PLC the 31st December 1992, 31st December 1993 and 31st December 1994 the Adjusted Close Prices are unavailable and are replaced by 0.00.
Part omitted	Adjusted Close Price	19th October 1993 and 31st October 1994	For BANKERS' INVESTMENT TRUST PLC (THE), ticker symbol BNKR has the same market close price for 19th October 1993 and 31st October 1994. In order to avoid divide by zero errors the market close price for 19th October 1993 has been kept at 185.00 GBX and the market close price for 31st October 1994 has been set from 185.00 GBX to 185.01GBX.
Part omitted	Adjusted Close Price	31st July 1998 and 30th July 1999	For CLOSE BROTHERS GROUP PLC, ticker symbol CBG has the same market close price for 31st July 1998 and 30th July 1999. In order to avoid divide by zero errors the market close price for 31st July 1998 has been kept at 847.50 GBX and the market close price for 30th July 1999 has been set from 847.50 GBX to 847.51 GBX.
Part omitted	Market Value	31st December 1992, 31st December 1993	For LLOYDS BANKING GROUP PLC the 31st December 1992, 31st December 1993 and 31st December 1994 the Market Values are unavailable and is replaced by 0.00.
Part omitted	Market-to-Book Ratio	31st December 1992, 31st December 1993	For LLOYDS BANKING GROUP PLC the 31st December 1992, 31st December 1993 and 31st December 1994 the Market-to-Book ratios are unavailable and are replaced are 0.00.
Part omitted	Value-at-Risk	30th December 1994 and 29th December 1995	For LLOYDS BANKING GROUP PLC the 30th December 1994 and 29th December 1995 Value-at-Risk for the actual 250-day time horizon that should be calculated with 300 days of historical returns is not calculated due to the Adjusted Close Price data being unavailable within the 300

Table Z.1 (Continued)

Data Changed	Data Item	Notable Dates	Description
			historical day range.
Part omitted	Value-at-Risk	29th July 1994 (1995 year)	For CLOSE BROTHERS GROUP PLC the 29th July 1994 Value-at-Risk for the actual 250-day time horizon calculated with 300 days of historical returns is not included in the 1995 sample due to the Value-at-Risk calculation being outside of the 300 historical day range.
Part omitted	Value-at-Risk	29th July 1994 (1995 year)	For PACIFIC HORIZON INVESTMENT TRUST PLC the 29th July 1994 Value-at-Risk for the 250-day time horizon calculated with 300 days of historical returns is not included in the 1995 sample due to the Value-at-Risk calculation being outside of the 300 historical day range.
Starts	RTS Stock Index	Starts from 9th January 1995	The Russia RTS INDEX - PRICE INDEX, Datastream identity RSRTSIN(PI), starts from 9th January 1995.
Starts	Bovespa FTSE Stock Index	Starts from 11th January 1994	The Brazil Bovespa FTSE BRAZIL -PRICE INDEX, Datastream identity WIBRAZL(PI), starts from 11th January 1994.
Starts	S&P/ASX 200 Stock Index	Starts from 29th May 1992	The Australia S&P/ASX 200 - PRICE INDEX, Datastream identity ASX200I(PI), starts from 29th May 1992.
Starts	MSCI Stock Index	Starts from 31st December 1992	The South Africa MSCI SOUTH AFRICA - PRICE INDEX, Datastream identity MSSARFL(PI), starts from 31st December 1992.
Starts	EUR and GBP Currency Pair	Starts from 4th January 1999	The exchange rate for the European Euro (EUR) to the Great British Pound (GBP), starts from 4th January 1999. This is the first day that the European Euro was issued.

Table Z.1 (Continued)

Data Changed	Data Item	Notable Dates	Description
Part omitted	GILT 2.5 year	See description	Data unavailable for the 2.5 Year GILT benchmark rate from 1st January 1991 to 27th March 1991, and from 21st December 1992 to 29th July 1993, and from 2nd December 1996 to 30th July 1998, and from 27th May 2003 to 5th June 2003, and from 25th February 2005 to 6th April 2006, and from 27th December 2007 to 2nd July 2008.
Part omitted	GILT 3 year	See description	Data unavailable for the 3 Year GILT benchmark rate from 21st December 1992 to 28th January 1993, and from 2nd December 1996 to 29th January 1998, and from 25th February 2005 to 20th September 2005.
Part omitted	GILT 3.5 year	See description	Data unavailable for the 3.5 Year from 2nd December 1996 to 31st July 1997, and from 25th February 2005 to 8th April 2005.
Part omitted	GILT 4 year	2nd December 1996 to 30th January 1997	Data unavailable for the 4 Year GILT benchmark rate from 2nd December 1996 to 30th January 1997.
Part omitted	GILT 17 year	4th October 1991 to 10th February 2008	Data unavailable for the 17 Year GILT benchmark rate from 4th October 1991 to 10th February 1992.
Part omitted	GILT 17.5 year	5th April 1991 to 10th February 2008	Data unavailable for the 17 Year GILT benchmark rate from 5th April 1991 to 10th February 1992.
Part omitted	GILT 18 year	1st January 1992 to 10th February 2008	Data unavailable for the 18 Year GILT benchmark rate from 1st January 1992 to 10th February 2008.
Part omitted	GILT 18.5 year	1st January 1992 to 10th February 2008	Data unavailable for the 18.5 Year GILT benchmark rate from 1st January 1992 to 10th February 2008.

Table Z.1 (Continued)

Data Changed	Data Item	Notable Dates	Description
Part omitted	GILT 19 year	1st January 1992 to 29th April 1992	Data unavailable for the 19 Year GILT benchmark rate from 1st January 1992 to 29th April 1992.
Part omitted	GILT 19.5 year	1st January 1992 to 29th April 1992	Data unavailable for the 19.5 Year GILT benchmark rate from 1st January 1992 to 29th April 1992.
Part omitted	GILT 20 year	See description	Data unavailable for the 20 Year GILT benchmark rate from 1st January 1992 to 29th April 1992, and from 5th December 1995 to 27th February.
Part omitted	GILT 20.5 year	See description	Data unavailable for the 20.5 Year GILT benchmark rate from 1st January 1992 to 29th April 1992, and from 5th June 1995 to 27th February 1996.
Part omitted	GILT 21 year	See description	Data unavailable for the 21 Year GILT benchmark rate from 1st January 1992 to 29th April 1992, and from 5th December 1994 to 27th February 1996.
Part omitted	GILT 21.5 year	See description	Data unavailable for the 21.5 Year GILT benchmark rate from 1st January 1992 to 29th April 1992, and from 3rd June 1994 to 27th February 1996.
Part omitted	GILT 22 year	See description	Data unavailable for the 22 Year GILT benchmark rate from 1st January 1992 to 29th April 1992, and from 3rd December 2003 to 27th February 1996, and from 5th September 1997 to 28th January 1998.
Part omitted	GILT 22.5 year	See description	Data unavailable for the 22.5 Year from 1st January 1992 to 29th April 1992, and from 4th June 1993 to 27th February 1996, and from 6th March 1997 to 28th January 1998.
Part omitted	GILT 23 year	See description	Data unavailable for the 23 Year GILT benchmark rate from 1st January 1992 to 29th April 1992, and from 4th December 2003 to 27th February

Table Z.1 (Continued)

Data Changed	Data Item	Notable Dates	Description
			1996, and from 5th September 1996 to 28th January 1998.
Part omitted	GILT 23.5 year	See description	Data unavailable for the 23.5 Year GILT benchmark rate from 1st January 1992 to 29th April 1992, and from 5th June 1992 to 27th February 1996, and 6th March 1996 to 28th January 1998.
Part omitted	GILT 24 year	See description	Data unavailable for the 24 Year GILT benchmark rate from 1st January 1992 to 29th January 1998, and from 24th September 1999 to 23rd May 2000.
Part omitted	GILT 24.5 year	See description	Data unavailable for the 24.5 Year GILT benchmark rate from 1st January 1992 to 29th January 1998, and from 8th July 1999 to 23rd May 2000.
Part omitted	GILT 25 year	See description	Data unavailable for the 25 Year GILT benchmark rate from 1st January 1992 to 29th January 1998, and from 30th October 1998 to 6th January 1999, and from 19th February 1999 to 23rd May 2000.