

**BEHAVIOURAL ASPECTS OF  
TRANSFER PRICING IN U.K.  
DECENTRALISED COMPANIES**

by

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# DEDICATION

*To the memory of the ever living victims of the October 1988 freedom riots in Algeria who were mercilessly transferred out of this world at the invaluable price of their young lives.*

# ABSTRACT

The central theme of this dissertation is the organisational and behavioural dimension of the transfer pricing problem as part of the management control process in the large decentralised company.

The study examines the origin and developments of the problem through an extensive review of both the theoretical literature and a large number of previous empirical investigations. It is concluded from this literature review that the divergence between the theoretical prescriptions and practice stems from a conceptual and methodological deficiency as the problem has been repeatedly studied out of its context of decentralised managerial responsibility.

Hence, the present study attempts to provide explanations as to why companies have particular transfer pricing policies by locating the problem in its context, that is the decentralised company. The organisational and behavioural approach adopted relates the transfer pricing system to the company's strategy, structure and culture through a multi-disciplinary analysis. The study draws on the literature on *contingency theory*, *economics of the firm* and *agency theory* to analyse the intricate relationships between the transfer pricing system, the company's structure and strategy and managerial behaviour. Great emphasis is placed on the managerial implications of transfer pricing through a questionnaire and interview survey of a sample of large divisionalised companies in the U.K.

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<b>TABLE OF CONTENTS</b>	<b>PAGE</b>
<b>DEDICATION</b>	i
<b>ABSTRACT</b>	ii
<b>ACKNOWLEDGEMENTS</b>	iii
<b>LIST OF TABLES</b>	xii
<b>LIST OF FIGURES</b>	xv
<b>LIST OF ABBREVIATIONS</b>	xvi
 <b>CHAPTERS:</b>	
 <b>CHAPTER 1: INTRODUCTION.</b>	 <b>1</b>
<b>1.1 THE TRANSFER PRICING PROBLEM.</b>	<b>1</b>
1.1.1 The traditional definition.	1
1.1.2 Decentralisation and the divisionalised company.	1
1.1.3 Divisional interdependence, internalised trade and the need for transfer prices.	3
<b>1.2 THE BRITISH BUSINESS ENVIRONMENT.</b>	<b>4</b>
1.2.1 Industrial concentration, diversification and the dominance of the large firm.	4
1.2.2 Decentralisation and the M-form company in the U.K.	5
1.2.3 Transfer pricing in the British company.	5
1.2.3.1 History of transfer pricing.	5
1.2.3.2 Summary of previous empirical studies of British transfer pricing practice.	6
1.2.3.3 Accounting and legal rules influencing British transfer pricing practice.	7
<b>1.3 RESEARCH PROBLEM AND JUSTIFICATION.</b>	<b>8</b>
1.3.1 Research problem.	8
1.3.2 The necessity of research on transfer pricing in the British company.	9
1.3.3 The reasons for an organisational and behavioural approach.	9
<b>1.4 RESEARCH METHODOLOGY .</b>	<b>11</b>
1.4.1 Synopsis of the literature review.	11

1.4.2	The suggested framework for a behavioural study of transfer pricing.	12
1.4.2.1	A proposed definition.	12
1.4.2.2	A proposed framework of analysis.	12
1.4.3	Research hypotheses.	14
1.4.4	Research design.	14
1.4.5	Research assumptions and limitations.	15
1.4.5.1	Assumptions.	15
1.4.5.2	Limitations.	16
<b>1.5</b>	<b>PLAN OF THE THESIS</b>	<b>16</b>
<b>CHAPTER 2:</b>	<b>TRANSFER PRICING IN THEORY: A CRITICAL ASSESSMENT OF THE CLASSICAL APPROACH.</b>	<b>18</b>
<b>2.1</b>	<b>OVERVIEW OF THE LITERATURE REVIEW</b>	<b>18</b>
<b>2.2</b>	<b>THE ECONOMIC THEORY APPROACH.</b>	<b>20</b>
2.2.1	The classical approach: Hirshleifer's model.	20
2.2.2	Further developments.	23
2.2.3	Discussion.	31
2.2.3.1	Perfectly competitive intermediate market and the market price.	31
2.2.3.2	The marginal cost approach with imperfectly competitive external markets.	36
2.2.4	Conclusion.	41
<b>2.3</b>	<b>THE MATHEMATICAL PROGRAMMING APPROACH.</b>	<b>43</b>
2.3.1	Linear programming models.	43
2.3.2	Decomposition programming models.	48
2.3.3	Goal programming models or satisficing approach.	53
2.3.4	Discussion.	55
2.3.5	Conclusion.	59
<b>2.4</b>	<b>THE ACCOUNTING TREATMENT</b>	<b>60</b>
2.4.1	Profit centres and transfer pricing: the "raison d'être".	61
2.4.2	Cost allocation and transfer pricing: the nuance of the difference between the two.	63

2.4.3	The "cure-all" approach.	65
2.4.4	The comprehensive approach.	66
2.4.5	Summary and conclusion.	69
<b>CHAPTER 3:</b>	<b>TRANSFER PRICING IN THEORY: THE ORGANISATIONAL APPROACH.</b>	<b>71</b>
3.1.	Cyert and March's behavioural theory of the firm.	74
3.2.	Watson and Baumler's behavioural approach.	76
3.3.	Granick's comparative study.	77
3.4.	Bailey and Boe's model.	78
3.5.	Earnest's hypothetical case.	78
3.6.	Lambert's study.	79
3.7.	Ackelsberg and Yukl's experiment.	80
3.8.	Swieringa and Waterhouse's four models.	80
3.9.	Eccles' normative framework.	83
3.10.	Spicer's organisational model.	88
3.11.	Conclusion.	91
<b>CHAPTER 4:</b>	<b>TRANSFER PRICING IN PRACTICE: COMPARATIVE ANALYSIS OF PREVIOUS EMPIRICAL STUDIES AND RELATED TOPICS IN NINE COUNTRIES.</b>	<b>92</b>
<b>4.1</b>	<b>DOMESTIC TRANSFER PRICING.</b>	<b>96</b>
4.1.1	American surveys.	96
4.1.2	British surveys.	108
4.1.3	Domestic transfer pricing in other countries.	118
4.2.	Multinational transfer pricing.	126
4.3.	Hybrid and comparative studies.	138
4.4.	Summary and conclusion.	146

<b>CHAPTER 5: THE PRESENT STUDY</b>	<b>149</b>
<b>5.1 SCOPE AND SURVEY OBJECTIVES</b>	<b>149</b>
<b>5.2 SURVEY DESIGN</b>	<b>151</b>
5.2.1 The companies studied.	151
5.2.2 Data collection methodology.	151
5.2.3 Questionnaire design and structure.	152
5.2.4 Questionnaire package.	154
<b>5.3 THE PILOT STUDIES</b>	<b>154</b>
5.3.1 Samples and response.	154
5.3.2 Preliminary results.	155
<b>5.4 QUESTIONNAIRE REFINEMENT.</b>	<b>155</b>
<b>5.5 THE FULL SCALE STUDY</b>	<b>156</b>
5.5.1 The sample.	156
5.5.2 The response.	156
<b>5.6 FIELD AND TELEPHONE INTERVIEWS.</b>	<b>156</b>
<b>5.7 QUESTIONNAIRE CODING AND STATISTICAL METHODS USED FOR INFERENCE IN THE STUDY.</b>	<b>158</b>
5.7.1 Questionnaire coding.	158
5.7.2 Statistical methods used.	158
<b>5.8 SUMMARY OF RESULTS</b>	<b>160</b>
5.8.1 Sample characteristics and response.	160
5.8.2 Position of person filling the questionnaire.	162
5.8.3 Legal status of the participating companies.	163
5.8.4 Industrial classification of the participating companies.	163
5.8.5 Profile of the participating companies.	164
5.8.5.1 Company size.	164
5.8.5.2 TIMES 1000 Ranking.	165
5.8.6 Diversification strategy and divisionalisation structure of the participating companies.	166
5.8.6.1 Diversification strategy .	166
5.8.6.2 Divisionalisation structure.	169

5.8.7	Corporate priority of objectives.	173
5.8.8	Decision-making responsibility.	176
5.8.9	Inter-divisional transfers and pricing policies.	179
5.8.10	Performance evaluation and reward.	180
5.8.11	Conflict causes and solutions.	180
5.8.12	General observation.	181
<b>CHAPTER 6: TRANSFER PRICING IN THE BRITISH CONTEXT.</b>		<b>182</b>
<b>6.1</b>	<b>MAGNITUDE OF INTER-DIVISIONAL TRANSFERS.</b>	<b>182</b>
6.1.1	Significance of transfers to company.	182
6.1.2	Significance of transfers to divisions.	183
6.1.3	Company size and magnitude of internal transfers.	184
6.1.4	Industrial category and internal trade.	186
6.1.5	Relationship between diversity and internal trade.	189
6.1.6	Relationship between divisionalisation structure and magnitude of internal trade.	190
<b>6.2</b>	<b>TRANSFER PRICING POLICIES</b>	<b>193</b>
6.2.1	Objectives of the transfer pricing system.	193
6.2.2	Companies' transfer pricing practices.	196
6.2.3	Negotiated transfer prices.	198
6.2.4	Transfer price variation.	199
6.2.5	Prevalence of particular transfer pricing policies.	200
6.2.5.1	Frequency of using dominant transfer pricing base.	200
6.2.5.2	Criteria for the prevalence of particular transfer pricing policies.	201
<b>6.3</b>	<b>LOCUS OF TRANSFER PRICING DECISION-MAKING.</b>	<b>204</b>
6.3.1	External sourcing decision.	204
6.3.1.1	Central approval and transfer pricing base.	204
6.3.1.2	Central approval and negotiated prices.	206
6.3.1.3	Central approval and the magnitude of the typical internal trade.	207
6.3.2	The transfer pricing decision.	209

<b>6.4 TRANSFER PRICING CHANGE AND CONSEQUENCES.</b>	<b>212</b>
6.4.1 Frequency of review and adjustment of transfer prices.	212
6.4.2 Factors influencing the review and adjustment of transfer prices.	213
6.4.3 Aftermath of transfer pricing change.	216
6.4.4 Divisional role in transfer pricing policy change.	221
<b>6.5 CONFLICT OVER TRANSFER PRICING</b>	<b>222</b>
6.5.1 Causes of conflict.	222
6.5.2 Impact of transfer pricing change on level of conflict.	226
6.5.3 Conflict resolution procedures.	228
<b>6.6 OVERVIEW OF THE RESULTS .</b>	<b>230</b>
<b>CHAPTER 7: PERFORMANCE MEASUREMENT, EVALUATION AND REWARD, AGENCY RELATIONSHIPS AND INTER-DIVISIONAL TRANSFERS IN THE DECENTRALISED BRITISH COMPANY.</b>	<b>232</b>
<b>7.1 PERFORMANCE MEASUREMENT POLICIES .</b>	<b>234</b>
7.1.1 Formality and multiplicity of performance measures.	235
7.1.2 Profit performance measures and the short-term perspective.	235
7.1.3 Residual income or the exclusion of the cost of capital.	238
7.1.4 Division vs. manager and the uniformity of the performance measure.	239
<b>7.2 BUDGET-RELATED PERFORMANCE AND EX-POST MONITORING .</b>	<b>241</b>
7.2.1 Profit objectives, divisional accountability, participation and budget-goals.	241
7.2.2 Managerial response attitudes to financial measures of performance.	242
<b>7.3 MANAGERIAL COMPENSATION SCHEMES</b>	<b>250</b>
7.3.1 Formality and variability of incentives and sanctions.	251
7.3.2 Financial vs. non-financial schemes.	252
<b>7.4 THE AGENCY RELATIONSHIP OF THE TRANSFER PRICING PROBLEM.</b>	<b>253</b>
7.4.1 The agency model and its applicability to the transfer pricing context.	253

7.4.2	Aspects of the agency problem in the sample companies.	255
7.4.2.1	Task interdependence, risk attitude, moral hazard and agency costs.	255
7.4.2.2	Information asymmetry and impactedness and multi-agent collusion.	258
7.4.3	Causes of the agency problem in the transfer pricing context of the sample companies.	259
7.4.3.1	Centralisation of the transfer pricing and the sourcing decisions.	259
7.4.3.2	Negotiation of transfer price transactions.	260
7.4.3.3	Budget related short-term profit performance and the surrogacy of the PMERS.	261
<b>7.5</b>	<b>POSSIBLE SOLUTIONS TO THE TRANSFER PRICING AGENCY.</b>	<b>263</b>
7.5.1	Managerial compensation as a panacea.	263
7.5.1.1	Incentives for equilibrium.	263
7.5.1.2	Divisional profits vs. divisional output.	264
7.5.1.3	Division vs. company results.	264
7.5.1.4	Relative performance and uniformity.	264
7.5.2	Tailoring the PMERS to company characteristics.	265
7.5.2.1	Dynamic vs. static agency contracts.	265
7.5.2.2	Centralised TPS and cocooned outcomes.	265
7.5.2.3	Entrepreneurship and accountability.	266
<b>7.6</b>	<b>Conclusion.</b>	<b>267</b>
<b>CHAPTER 8:</b>	<b>CASE STUDIES: TRANSFER PRICING PRACTICE IN FIVE LARGE BRITISH COMPANIES.</b>	<b>268</b>
<b>8.1</b>	<b>Case study one: Bauxite Plc.</b>	<b>268</b>
<b>8.2</b>	<b>Case study two: Health Plc.</b>	<b>279</b>
<b>8.3</b>	<b>Case study three: The Electronic Duo.</b>	<b>288</b>
<b>8.4</b>	<b>Case study four: Smoke Ltd .</b>	<b>297</b>
<b>8.5</b>	<b>Overview of the case studies.</b>	<b>303</b>

<b>CHAPTER 9: EVALUATION OF THE HYPOTHESES AND CONCLUSIONS FOR FUTURE RESEARCH.</b>	<b>306</b>
<b>9.1 Evaluation of the research hypotheses</b>	<b>306</b>
<b>9.2 Overview of the results in terms of spicer's theoretical framework</b>	<b>312</b>
<b>9.3 COMPARISON OF THE RESULTS WITH PREVIOUS EMPIRICAL STUDIES</b>	<b>314</b>
9.3.1 Comparison with previous British studies.	<b>315</b>
9.3.2 Comparison with American studies.	<b>316</b>
9.3.3 Comparison with other studies.	<b>317</b>
<b>9.4 CONCLUSIONS AND SUGGESTIONS FOR FUTURE RESEARCH</b>	<b>318</b>
9.4.1 Conclusions.	<b>318</b>
9.4.2 Suggestions for future research.	<b>319</b>
<b>APPENDICES</b>	<b>323</b>
<b>BIBLIOGRAPHY</b>	<b>361</b>

## LIST OF TABLES

TABLE	CONTENT	PAGE
Table 2.1	Literature reviewing (R) or proposing (P) particular transfer pricing policies in the 1950s.	333 <b>Appendix D</b>
Table 2.2	Literature reviewing (R) or proposing (P) particular transfer pricing policies in the 1960s.	334 <b>Appendix D</b>
Table 2.3	Literature reviewing (R) or proposing (P) particular transfer pricing policies in the 1970s.	3335 <b>Appendix D</b>
Table 2.4	Literature reviewing (R) or proposing (P) particular transfer pricing policies in the 1980s.	336 <b>Appendix D</b>
Table 2.5	Solomons' transfer pricing recommendations.	68
Table 3.1	Behavioural research on transfer pricing.	73
Table 4.1	Previous empirical studies on transfer pricing since 1956.	337 <b>Appendix E</b>
Table 4.2	Number of studies by year and country since 1956.	341 <b>Appendix E</b>
Table 4.3	PhD based research.	93
Table 4.4	American questionnaire-based surveys.	94
Table 4.5	British questionnaire-based surveys.	95
Table 4.6	Canadian questionnaire-based surveys.	95
Table 4.7	Other questionnaire-based surveys.	95
Table 4.8	American domestic transfer pricing practice.	97
Table 4.9	British domestic transfer pricing practice.	109
Table 4.10	Domestic transfer pricing practice in six other countries.	119
Table 4.11	Multinational transfer pricing practice.	127
Table 5.1	Personal visits to companies.	157
Table 5.2	Industrial grouping of all companies.	161
Table 5.3	Companies responding but not participating.	162
Table 5.4	Corporate position of person completing the questionnaire.	163
Table 5.5	Industrial classification of the participating companies.	164
Table 5.6	Company size: turnover and capital employed (1988).	165
Table 5.7	Company size: number of employees (1988).	165
Table 5.8	Times 1000 (1988/1989) ranking.	166
Table 5.9	Diversification pattern of the responding companies.	167
Table 5.10	Diversity by industry grouping.	168
Table 5.11	Divisionalisation structure of companies.	169

Table 5.12	Diversification pattern vs. divisionalisation base.	170
Table 5.13	Base of divisionalisation by industry.	172
Table 5.14	Current high priority management.	174
Table 5.15	Sample correlation coefficients among management objectives.	175
Table 5.16	Decision-making responsibility of divisional managers.	177
Table 5.17	Sample correlation coefficients among degrees of managerial discretion on decisions.	178
Table 6.1	Magnitude of inter-divisional transfers (as a percentage of total company volume sales).	183
Table 6.2	Significance of internal trade to divisions.	183
Table 6.3	Internal trade vs. size (turnover).	184
Table 6.4	Internal trade vs. size (capital employed).	185
Table 6.5	Volume of internal trade by industry.	186
Table 6.6	Internal transfers by industry grouping.	187
Table 6.7	Highest volumes of transfers.	188
Table 6.8	Internal transfers by degree of diversity.	189
Table 6.9	Divisionalisation base vs. internal trade (as % of total company volume sales).	191
Table 6.10	Internal trade vs. single and multiple bases of divisionalisation.	192
Table 6.11	Objectives of the transfer pricing system.	194
Table 6.12	Sample correlation coefficients among transfer pricing objectives.	195
Table 6.13	Transfer pricing methods.	196
Table 6.14	Negotiated transfer prices.	198
Table 6.15	Reasons for same or varied pricing for same transfer to different internal buyers.	199
Table 6.16	Transfer price variation vs. pricing base.	200
Table 6.17	Transfer pricing base vs. usage frequency.	201
Table 6.18	Criteria for the dominance of a particular transfer pricing policy.	202
Table 6.19	Sample correlation coefficients among criteria for the dominance of a particular transfer pricing policy.	203
Table 6.20	Pricing base vs. approval for external sourcing.	205
Table 6.21	Central approval for external sourcing in companies with negotiated transfer prices.	206
Table 6.22	Significance of internal trade to company vs. approval for external sourcing.	207

Table 6.23	Significance of internal trade to transferor division vs. approval for external sourcing.	208
Table 6.24	Significance of internal trade to transferee division vs. approval for external sourcing.	208
Table 6.25	Pricing decision vs. pricing base.	209
Table 6.26	Transfer pricing decision vs. approval for external sourcing.	210
Table 6.27	Frequency of transfer pricing review.	212
Table 6.28	Factors influencing the review/adjustment of transfer prices.	214
Table 6.29	Sample correlation coefficients among factors influencing the review and adjustment of transfer prices.	215
Table 6.30	Results of reviewing or adjusting transfer pricing policies.	216
Table 6.31	Sample correlation coefficients among results of transfer pricing change.	217
Table 6.32	Summary of reasons for results of changing/improving previous transfer pricing systems.	220
Table 6.33	Causes of conflict over transfer pricing.	223
Table 6.34	Sample correlation coefficients among causes of conflict over transfer pricing.	224
Table 6.35	Conflict resolution procedures.	228
Table 7.1	Performance evaluation measures.	234
Table 7.2	Companies not concerned with question QD5.	244
Table 7.3	Managers' reactions to financial performance measures.	245
Table 7.4	Companies that reported bias and slack building (DMRC4).	247
Table 7.5	Satisfactory performance - rewards.	251
Table 7.6	Unsatisfactory performance -sanctions.	251

## LIST OF FIGURES

FIGURE	CONTENT	PAGE
Figure 3.1	Causes and effects of transfer pricing (Eccles, 1985)	84
Figure 3.2	Transfer pricing in the M.A.P. (Eccles, 1985)	86
Figure 3.3	Major factors affecting control of intra-firm transfers (Spicer, 1988).	89
Figure 4.1	World-wide trend of empirical studies by year since 1956	342
Figure 4.2	World-wide trend of empirical studies by decade.	342
Figure 8.1	Management Organisation of Bauxite P.l.c.	271
Figure 8.2	Organisation chart of Health p.l.c.	280
Figure 8.3	Product flow in Health p.l.c.	282
Figure 8.4	Organisation chart of Circuit Group p.l.c.	290
Figure 8.5	Organisation chart of Silicon Group p.l.c.	291
Figure 8.6	Simplified organisation chart of Smoke p.l.c.	298

## LIST OF ABBREVIATIONS

<b>AIS</b>	Accounting Information System.
<b>ASC</b>	Accounting Standards Committee (U.K.).
<b>BIC</b>	Business International Corporation (U.S.A.).
<b>BIM</b>	British Institute of Management.
<b>CIMA</b>	Chartered Institute of Management Accountants (U.K.).
<b>EDP</b>	Electronic Data Processing.
<b>EPS</b>	Earnings Per Share.
<b>FASB</b>	Financial Accounting Standards Board (U.S.A.).
<b>FERF</b>	Financial Executives Research Foundation (U.S.A.).
<b>ICAEW</b>	Institute of Chartered Accountants in England and Wales.
<b>IRC</b>	Internal Revenue Code (U.S.A.).
<b>KBE</b>	Key British Enterprise.
<b>MBS</b>	Manchester Business School
<b>MCS</b>	Management Control System
<b>MNCs</b>	Multinational Companies
<b>NAA</b>	National Association of Accountants (U.S.A.)
<b>NICB</b>	National Industrial Conference Board (U.S.A.)
<b>OECD</b>	Organisation for Economic and Cultural Development
<b>PMERS</b>	Performance Measurement, Evaluation and Reward System.
<b>PRP</b>	Profit Related Pay.
<b>ROI</b>	Return on Investment
<b>ROS</b>	Return on Sales.
<b>SIC</b>	Standard Industrial Classification (U.K.)
<b>SSAP</b>	Statement of Standard Accounting Practice (U.K.)
<b>TPS</b>	Transfer Pricing System.

# CHAPTER 1: INTRODUCTION

## 1.1 THE TRANSFER PRICING PROBLEM

### 1.1.1 THE TRADITIONAL DEFINITION

Transfer prices are usually defined as the monetary values assigned to goods and services transferred between the units of the same company (Goetz, 1967; Wells, 1968; Fantl, 1974; Wojdak, 1968; Mailandt, 1975; Flavell, 1977; Dagher, 1977; Lambert, 1979, Venu, 1983; Cats-Baril et al., 1988 and most accounting dictionaries and management accounting textbooks).

This definition is limited in scope as it reflects only the accountant's view of transfer pricing as a mere cost-revenue exercise and fails to place the problem in its context which is the decentralised responsibility-centre structure. This structure is the dominant feature of the modern large industrial corporation.

### 1.1.2 DECENTRALISATION AND THE DIVISIONALISED COMPANY

The growth of organisations into large (and diversified) companies has led to the adoption of the decentralised organisational structure whereby authority for decision-making is delegated from corporate management to lower level managers. The prime objective of decentralisation is to reduce risk and uncertainty and increase managerial efficiency by decomposing large problems into smaller ones, solvable by semi-autonomous managers motivated to make the best possible decisions. In a large company diversified into different markets, the tasks of managing the daily transactions from the centre become impractical due to the upward information overload received from the various business segments. By shifting the locus of operating decision-making power further down the hierarchy, top management (or the centre) seeks to place the decision close to facts or the realities of the market place, i.e. where and when the information is generated and thus reduce inefficiency by preserving timeliness and encouraging entrepreneurship. It is argued that *“demand for decentralisation must involve either incomplete information by the center or imperfect monitoring ability”*

(Demski and Kreps, 1982, pp. 129). Moreover, once the burden of the day-to-day activities is shifted downwards, top management has more time to devote to strategic issues or long-range decisions. Stated otherwise, there is a separation of major policy-making from operational management that has led to the establishment of managerial hierarchies. On the other hand, however, the delegation of decision-making authority entails responsibility for the efficient use of the resources over which the manager has authority. Hence the question concerns the degree of decentralisation, how to structure managerial responsibilities and what system of accountability to devise and impose in order to maximise efficiency.

Decentralised companies are essentially structured on hierarchical divisional bases where each division is a responsibility centre. Depending on the nature of the activities of each division - as outlined by company structure and strategy - the responsibility incumbent on the divisional manager varies from cost performance (cost centre) to profit performance (profit and investment centres). Divisionalisation has been narrowly defined by Solomons (1965) and Verlage (1975) as decentralisation plus delegation of profit responsibility. This definition is based on the presumption that profit maximisation - or the economic motive as measured by the accounting system - is the sole business objective. This is, however, not always the case in the modern large business corporation as success or failure depends on a web of economic, sociological and psychological factors.

The multi-divisional form of organisation (or M-form) came to existence in the late nineteenth century in the USA (Chandler, 1962 and 1977 and Williamson, 1975, 1985 and 1986); was adopted by some Japanese firms in the early twenties (Pascale and Athos, 1982); and later spread to Western Europe (Chandler and Daems, 1980). By the early 1970s it has become the predominant type of organisation in the UK (Channon, 1973, 1978 and 1982 and Steer and Cable, 1978). This was recently confirmed by the results of two studies by Pratten (1986) and Hill and Pickering (1986).

### **1.1.3 DIVISIONAL INTERDEPENDENCE, INTERNALISED TRADE AND THE NEED FOR TRANSFER PRICES**

It is often the case that M-form companies have interdependences between their divisions in the form of product/service transfers as a result of a policy of vertical integration wherein production is accomplished in a sequential processing of a raw material through to the final outputs or finished products. Companies develop the need to integrate (backward into raw materials, laterally into components, and forward into distribution) certain stages of production and distribution - mainly as a response to market imperfections - and thus create 'inside markets' by internalising (or substituting) what was hitherto external market transactions. By vertically integrating, companies seek to gain economies of scale by reducing transaction costs, increase market share, and gain and sustain competitive advantage. Interdependence also takes place in non-vertically integrated companies because of protectionist policies dictated by technological and volume sensitivity. Hence, the focus of analysis is shifted from the market to the business corporation or the corporate economy.

The existence of internal trade in the divisionalised company necessitates some sort of co-ordination and may be regulation. This has to be done in a way that preserves and enhances the objectives sought from decentralising management, i.e., divisional autonomy and responsibility and maximising corporate efficiency. In other words, an equilibrium has to be achieved between the need to decentralise and the need to co-ordinate. For this purpose the transfer pricing mechanism was invented.

Some of the early M-form companies like General Motors and Dupont in the USA and Matsushita in Japan developed, as part of their managerial accounting system, a market-based system for pricing inter-divisional transfers (Johnson, 1978; Pascale and Athos, 1982; Kaplan, 1984; Ansoff, 1984; Eccles, 1985 and Johnson and Kaplan, 1987). The market-based transfer pricing policy was part of the company's management control process, providing some measure of divisional performance (e.g. rate of return on investment), and the incentive and profit-sharing plans. However, despite the original and innovative treatment of inter-divisional transfers by these firms, serious academic

consideration of and interest in the problem began only in the fifties, i.e. after the Second World War due to the growth and the spread of managerial hierarchies and, in particular, the vertically integrated M-form. Since then a flow of analytical and some empirical literature has revealed different approaches and propositions. However, most of this literature is based on the traditional definition of transfer pricing (Section 1.1.1 above). This explains the lack of empirical investigation of how transfer pricing procedures and policies affect and are affected by managerial policies and behaviour. This pattern applies to research on transfer pricing in Britain where all the characteristics of the modern corporation are predominant.

## **1.2 THE BRITISH BUSINESS ENVIRONMENT**

### **1.2.1 INDUSTRIAL CONCENTRATION, DIVERSIFICATION AND THE DOMINANCE OF THE LARGE FIRM**

An established feature of the British industrial environment is the high degree of concentration characterised by the market dominance of the few large companies. This high level of concentration was mostly motivated by economies of scale and is the result of a continuous wave of mergers and acquisitions (Hannah, 1976; Prais, 1976; Hannah and Kay, 1977 and Utton, 1982). This trend is clearly evidenced with the take-over boom of the eighties (Grant and Sargent, 1987), sometimes across national frontiers. In sum, *“the great increase in the relative growth of the largest enterprises in the UK in the last twenty years has produced a manufacturing sector which is one of the most highly concentrated - if not the most highly concentrated in the world”* (Utton, 1982, p. 22).

Beside the high degree of concentration, British large companies in both the manufacturing and service sectors are widely diversified (Channon, 1982; Luffman and Reed, 1984; and Goold and Campbell, 1987). Diversification is defined as *“the way in which business activities are related to one another”* (Rumelt, 1974, p. 23). The study by Channon (1982) shows that by 1980 only 9% of the 200 largest companies operated as single sphere businesses whereas most of these companies are progressively becoming conglomerates or unrelated business concerns. This pattern of dominance by large firms can only be expected to have significant economic, social and political consequences.

Although the vast majority of companies in the UK are small and unincorporated, the large manufacturing firms produce most of the national output and are predominant in providing employment. By the beginning of the 1970s the share of the 100 largest firms in the manufacturing industry was over 40% of net output (Hannah, 1976; Prais, 1976; Utton, 1982 and Jones and Cockerill, 1984) and accounted for nearly one quarter of the total labour force (Abraham, 1974). The development of direct contact between large firms and the Government via specialist government divisions and political consultancies is observed to be increasing (Grant and Sargent, 1987) and reflects the influence of the large firm on the national economy.

### **1.2.2 DECENTRALISATION AND THE M-FORM COMPANY IN THE U.K.**

The evolution of organisational and managerial styles in British companies is succinctly summarised by Channon (1973 and 1978), Hannah (1980) and Gourvish (1988). The growth of firms in the U.K. has engendered two main characteristics of the modern industrial corporation: a) the divorce of ownership and control and b) the multi-divisional structure or M-form. Most businesses became shareholder-owned and hired professional managers on a contractual basis to look after their interests. Simultaneously, most large companies adopted a decentralised profit-centre structure. These managerial and structural changes were largely a relatively late emulation of the American experience and have become imbedded features of British companies since the end of the Second World War.

### **1.2.3 TRANSFER PRICING IN THE BRITISH COMPANY**

#### **1.2.3.1 HISTORY OF TRANSFER PRICING**

Some evidence is provided by Stone (1973), Mephram (1983 and 1988) and Fleischman and Parker (1990) on the existence of transfer prices in Britain in the last two centuries in the textile and iron industries. Although scanty, research tends to imply that the idea of responsibility accounting was a concern long before the advent of the large decentralised firm. However, it can only be assumed that the transfer pricing systems identified by Stone and Mephram were some form of cost allocation as there was no proper

profit responsibility then due to the prevailing ownership and organisational styles. Most businesses were family owned (i.e. there was no divorce between ownership and management as it is today) and as such there was no real delegation of responsibility to employees that would entail profit accountability. Therefore, what was described as transfer prices could only be 'nominal transfer prices' with no managerial implications, but only used as inputs to profit centres to determine viability of separate processes. It follows that in reality transfer pricing can only be traced in the U.K. to after the Second World War when companies started copying American organisational and management styles. Evidence on companies' practices first came to light in 1967 with the publication of Livesey's study. This will be later reviewed in Chapter 4.

#### **1.2.3.2 SUMMARY OF PREVIOUS EMPIRICAL STUDIES OF BRITISH TRANSFER PRICING PRACTICE**

Thirteen studies on British domestic and multinational practices are examined in Chapter 4. Between 1967 and 1984 over a thousand usable questionnaires were completed by companies. This suggests the importance attached to the problem by academics. Companies use a variety of pricing methods based either on market or cost. All but two studies reported that a certain level of negotiation is allowed in setting the transfer price. The negotiation is most often based on the available market price. Moreover, a common feature of most companies is the central control exercised over key operating decisions such as buying/selling externally and setting and reviewing transfer prices. In reality, there is not as much concern with divisional autonomy and motivation as with corporate control and preservation of corporate interests. This implies that a great deal of companies are structurally, but not managerially decentralised.

A common feature of the previous surveys is their focus on the practices without trying to place them in the organisational and behavioural contexts of the companies studied. Developing this aspect is one prime concern of the present research project.

### 1.2.3.3 ACCOUNTING AND LEGAL RULES INFLUENCING BRITISH TRANSFER PRICING PRACTICE

The annual surveys of companies' published accounts by the Institute of Chartered Accountants in England and Wales (ICAEW) show that very few companies provide disclosure on inter-segment revenue as there is no compulsion to do so. Prior to the Companies Act 1967, companies were not even obliged to disclose their turnover figures.

The elimination of inter-divisional sales in consolidating accounts is implicit in the Companies Acts of 1948, 1967, 1981 and 1985 (Renshall and Aldis, 1985), the first Statement of Standard Accounting Practice (SSAP1: Accounting for Associated Companies) and SSAP14 (Group Accounts), (Wilkins, 1979). Section 228 of the 1985 Companies Act emphasises the notion of the '*True and Fair View*' in companies' financial statements. This implies the application of the fundamental accounting concepts in valuing income and capital. Of particular relevance is the concept of prudence (revenue and profits not anticipated but recognised when realised) as defined by SSAP2 (Disclosure of Accounting Policies), hence the exclusion of unrealised profits generated by internal transactions.

There is in effect, at this stage, no specific (domestic) transfer pricing legislation in the U.K.. This is true notwithstanding 1) the above hints; 2) the anti-avoidance provision contained in section 485 of the Income and Corporation Taxes Act (ICTA, 1970) against artificial intra-company pricing (Farrar, 1985); 3) the Oil Taxation Act of 1975 for determining arm's length prices; 4) the Inland Revenue notes on multinational transfer pricing (1980, Appendix A<sup>1</sup>) and 5) the guide-lines published by CIMA (1981).

At least two reasons may explain the omission of regulation on transfer pricing. First, the subject is very sensitive and, it can be argued, has to be shrouded with the utmost secrecy in a competitive market economy. The experience with the present survey revealed how reluctant companies are to participate in non-statutory surveys. Second, the subject has not yet gained enough momentum to require a rigorous code of practice

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<sup>1</sup> at the end of the thesis on page 323

as in the USA, Canada, Australia and West Germany. In fact the legislation in these countries is fairly recent (for instance, Lurie, 1979; Wilkins, 1979 and Radler and Jacobs, 1984). In Britain, the Accounting Standards Committee (ASC) has now published a long-awaited exposure draft (ED45) on segment reporting in line with IAS14 (International Accounting Standard). The exposure draft - soon to become an SSAP - proposed the disclosure of inter-segment pricing, so long as such disclosure is not detrimental to the company (Management Accounting, 1989). The quest for prescriptive transfer pricing regulations is part of the voiced interest in management accounting standards in general (Dev, 1984). This quest may now be pressed further in the transfer pricing area as an indirect result of the recent support by the Government for profit related pay (PRP) in the form of income tax relief on registered PRP schemes (Inland Revenue, 1987). A pre-requisite for a PRP scheme is the definition of the employment unit it covers. The employment unit could either be the group company, a firm or a sub-unit, and therefore, it is necessary to consider its financial independence (IDS report N°. 506). The Inland Revenue rules on PRP do not specify the extraordinary items that affect the employment unit's profits and need to be considered when calculating these profits. The absence of regulation on segment reporting and transfer pricing may explain the lack of enthusiasm for PRP by large companies (IDS reports N<sup>os</sup>. 508 and 538). This issue will be discussed further in Chapter Seven where the incentive and compensation schemes of the participating companies will be studied in the light of agency theory.

### **1.3 RESEARCH PROBLEM AND JUSTIFICATION**

#### **1.3.1 RESEARCH PROBLEM**

The prime objective of this research is to try to find out why companies use particular transfer pricing procedures and policies, through an investigation of how such procedures and policies affect managerial behaviour. This is a clear departure from the traditional descriptive approach of companies' practices (as it will be later detailed in Chapter 4) in favour of an organisational and behavioural approach. The study is confined to the

U.K. domestic market. Cross-border transfer pricing is not covered by the survey as it only adds unnecessarily to the complexity of the problem. It rather requires a separate cross-cultural investigation.

As the topic of transfer pricing is one of the most controversial issues on which there is an abundant literature, the reasons for adding to this literature require elaboration. The present study makes a worthwhile contribution as 1) the issue is of such fundamental and increasing importance, i.e., here is a necessity for deeper probing, and 2) by focusing on the organisational and behavioural dimensions of the topic, I adopt a distinctive approach somewhat neglected in many previous investigations. Two recent contributions by Eccles (1985) and Spicer (1988) are of particular relevance to the present study.

### **1.3.2 THE NECESSITY OF RESEARCH ON TRANSFER PRICING IN THE BRITISH COMPANY**

The information presented throughout Section 1.2 above implies there is a major need for further in-depth investigations of transfer pricing which reflect the changing circumstances surrounding the issue. This necessity is particularly emphasised as formal legislation on transfer pricing practice is possible in the future (Management Accounting, CIMA, 1989).

### **1.3.3 THE REASONS FOR AN ORGANISATIONAL AND BEHAVIOURAL APPROACH**

Learning is a continuous process, and the very nature of accounting theory as a social science requires constant observation and investigation of the environmental factors with which it interacts. The traditional definition of accounting practice as the process of recording, classifying and communicating economic events in financial terms reflects only the craft side of the discipline and fails to recognise its organisational and social setting. In other words, accounting has long been considered as the financial expression of the daily activity of organisations but if accounting theorists became too preoccupied with how the craft is practised they will pay too little attention to the interaction of accounting theory with all the other disciplines that analyse organisational functioning (Flint and Shaw, 1981). Thus, the prime concern has long been with

accounting the art, not accounting the social science. For instance, the extensive, but frequently narrow, coverage that transfer pricing has received in an array of books and journal articles is but one example of the neglect of the organisational and social importance of the discipline although there are signs of change with the recent works of Eccles (1985) and Spicer (1988).

The treatment of the pricing of internal trade has focused on finding the best or the all-purpose transfer price procedure. This has produced more questions than it has answered. The ambiguity stems from looking at transfer pricing - which is an integral part of the management control process - as a mere cost-revenue exercise, or as a special cost-allocation problem with the emphasis on profit responsibility. Even this responsibility is often isolated from the real context of decentralised management of which transfer pricing is a by-product. Despite the abundance of published material on transfer pricing, there is the need for research that combines the technical side of the problem and its organisational and behavioural dimensions and implications.

A response from researchers of this complexity is dictated by the fabric of the modern industrial corporation whose main features include 1) the large size in terms of market value, turnover and labour force and thence, real social and economic significance attaching to its resource utilisation, 2) the multi-divisional decentralised structure, 3) product and market diversification, 4) the divorce of ownership and control, and 5) as a result of the foregoing, decision-making processes of such consequence and complexity that key behavioural issues - in that individuals and groups have different perceptions and aspirations and degrees of responsibility - must not be ignored.

If the company is diversified, this means that there are a number of manufacturing environments and this requires a variety of control policies. Therefore, in a decentralised organisation where delegated decision-making power entails responsibility and, consequently, penalisation or rewards, the study of any control mechanism like transfer prices must take two vital factors into account: 1) the internal organisational characteristics, and 2) the people and groups affecting and being affected by the decision-making process and the outcomes thereof. Such an approach requires the

integration with the accountant's technical solutions; explanations from other disciplines like marketing, behavioural science (including contingency theory and agency theory) and the economics of the firm. This is not an easy task but a feasible one. Hence, the present study is not merely concerned with transfer prices but with transfer pricing systems or processes viewed in the organisational contexts. As a starting point it needs the formulation of a definitional framework to guide the investigation. But first, to put this in a context requires a critical exploration of the existing literature.

## **1.4 RESEARCH METHODOLOGY**

### **1.4.1 SYNOPSIS OF THE LITERATURE REVIEW**

The next three chapters synthesize the transfer pricing literature from a variety of perspectives. The multi-disciplinary nature of the problem has provoked a stream of academic proposals based on economic theory, mathematics, accounting and behavioural science, as well as a considerable number of laboratory experiments and empirical investigations. The focus of this literature review is to draw on all these significant sources in a simple study and hence, do justice to the complexity and importance of transfer pricing.

From this critical assessment of the different proposals and surveys it will be shown that transfer pricing cannot be properly understood unless studied in a broad organisational context which takes into account the particularities and peculiarities of companies. This includes both the internal and external settings that affect and are affected by the internal transaction. By internal settings is meant the organisational structure, the technology, the culture, the managerial systems and the people of the company. The external settings refer in broad terms to the economic, political and social environments. Enough evidence is provided at the beginning of the current chapter and in Chapter 4 on the serious interest of governments and accounting bodies outside the U.K. in segment reporting and transfer pricing often in the form of strict legislation and accounting regulations. The possibility of the British authorities following suit only underlines the need for the type of broad investigation presented in this thesis.

The latest publications available (Grabski, 1985; Ezzamel and Hart, 1987; Spicer, 1988; Dejong et Al., 1989 and Chalos and Haka, 1990) clearly press for empirical investigation in such research as theoretical speculations alone cannot be relied upon for an adequate understanding of real world phenomena. The careful observation of practice is critical for testing hypothetical judgements, highlighting shortcomings and guiding corrective actions. Moreover, so long as British companies are only required to publish consolidated accounts - which give little idea of the interdependence between and within divisions - the only source of information on transfer pricing will be direct approaches to the companies themselves to provide researchers with the appropriate data.

#### **1.4.2 THE SUGGESTED FRAMEWORK FOR A BEHAVIOURAL STUDY OF TRANSFER PRICING**

##### **1.4.2.1 A PROPOSED DEFINITION**

*Transfer prices are the monetary values attached to internalised market transactions between units of an organisational set-up which are separated by management responsibility.*

##### **1.4.2.2 A PROPOSED FRAMEWORK OF ANALYSIS**

A transfer implies a movement in time and space of something quantifiable, and pricing indicates the placement of a monetary value or a price. Transfer pricing is therefore a process which involves an object (**WHAT**), a subject or agent (**WHO**), a place (**WHERE**), a time (**WHEN**), a reason (**WHY**) and a procedure (**HOW**):

- 1 - the **WHAT** factor concerns the thing transferred, be it goods (raw materials and products) or services, and its importance to the company, the transferor and the transferee,
- 2 - the **WHO** factor concerns the people involved in, responsible for and affected by the transaction,
- 3 - the **WHERE** factor concerns the origin and the destination of the transfer (or the transferor and the transferee),

- 4 - the WHEN factor concerns the point in time of the transaction. This is important for cost and revenue allocation across time periods and performance evaluation and reward, as performance reports and feedback to divisional managers should be timely,
- 5 - the WHY factor concerns the underlying reasons for the transaction to take place internally, especially when there is an external market for the transferred commodity,
- 6 - the HOW factor concerns the internal procedures and regulations that control both the physical transfer and its costing.

This six-factor framework of the process of transfer pricing should constitute the point of departure for research on transfer pricing. The review of the literature in Chapters 2-4 reveals that studies of this sort are very scarce. In general, most research on the subject has been primarily concerned with the WHAT and the WHERE questions, i.e. the technical and quantitative aspects. This explains why, more often than not, empirical studies fall short of explaining why particular systems are in use. The deficiency is not in the results but rather in the approach adopted at the outset. For instance, the analysis of the WHERE factor should go beyond a simple description of the buying and selling units to a full study of the structure of the company that encompasses the degree of decentralisation, diversification, vertical integration and the extent of divisional interdependence. This is crucial as the essence of responsibility accounting is to hold managers responsible for those activities over which they exercise at least some control.

In further elaboration of the above framework, the following five hypotheses are proposed:

### **1.4.3 RESEARCH HYPOTHESES**

#### **MAIN HYPOTHESIS**

- 1) The acceptance of the transfer pricing system is highly effected by the extent of decision-making responsibility delegated to divisional management and the way in which the accounting information system measures that responsibility.***

#### **SUB-HYPOTHESES**

- 2) - The evaluation/reward of divisional performance in the large company on the basis of a single corporate objective (e.g. maximum profits) can have adverse motivational consequences, particularly if divisional managers have no or limited control over the factors they are judged on.***
- 3) - The greater the impact of the transfer pricing system on performance evaluation of profit centres, the greater the conflict over transfer prices.***
- 4) - The degree of dysfunctional behaviour is likely to be affected by company culture and division managers' perception of fairness of the transfer pricing system.***
- 5) - Changes in organisational structure and strategy result in changes (or the need for changes) in transfer pricing policies.***

### **1.4.4 RESEARCH DESIGN**

The original interest into the subject of transfer pricing had developed a few years ago while writing an MSc dissertation on performance evaluation in divisionalised companies (Mehafdi, 1983). This formed the first round of the literature review on this subject. However, this has been much extended and up-dated for the purposes of the present study. In fact the literature review in Chapters 2-4 constitutes the platform from which the entire study develops its unit and the data gathering and analysis of Chapters 5-9.

The research process for this study involved the following stages:

- 1) conceptualisation, definition of research problem and objectives, and formulation of research hypotheses after reviewing both the theoretical and empirical literature,
- 2) selection of the data collection methods and the design of the questionnaire,
- 3) selection of the survey samples, the testing of the questionnaire through pilot studies and the identification of the adequate statistical techniques for data analysis,
- 4) assessment of the results of the pilot studies, refinement of questionnaire and conducting of the full-scale study
- 5) conducting the telephone and field interviews,
- 6) analysis of findings and testing of hypotheses,
- 7) cases studies based on interviews in selected companies,
- 8) conclusions and suggestions for further research.

#### **1.4.5 RESEARCH ASSUMPTIONS AND LIMITATIONS**

The study is based on the following assumptions and limitations:

##### **1.4.5.1 ASSUMPTIONS**

- 1) the transfer pricing problem is a subject of concern in British companies,
- 2) the sample of companies is representative of the total number of companies with transfer pricing systems,
- 3) the data obtained give a true and fair picture of companies' practices and policies,
- 4) consequently, the numerical translation of the data reflects these practices objectively,

- 5) hence, the statistical analysis is adequate for testing the hypotheses and inferring conclusions.

#### **1.4.5.2 LIMITATIONS**

- 1) the sensitive nature of transfer pricing does not encourage a high response to questionnaire surveys,
- 2) the study focuses only on domestic issues and thus excludes the multinational aspects of transfer pricing which preoccupy a number of the participating companies,
- 3) the analysis is based solely on corporate views as access to divisional managers could not be obtained,
- 4) only five companies accepted to be visited for field interviews.

### **1.5 PLAN OF THE THESIS**

The remaining of the research stages described in Section 1.4.4 above are covered in the following eight chapters.

In **Chapter 2** the classical approach to transfer pricing as advocated by economists, mathematicians and academic accountants is critically reviewed and its flaws and shortcomings exposed. Consequently, the necessity for an organisational and behavioural approach is emphasised in **Chapter 3** where ten prior theoretical frameworks are discussed.

The validity of the theoretical proposals of both the classical and organisational approaches is tested in **Chapter 4** which offers a transnational comparative analysis of 47 previous empirical studies in ten countries.

**Chapter 5** gives a full description of the present study and the detailed findings are presented in **Chapters 6 and 7**. Agency theory is introduced in **Chapter 7** as a

framework of analysis for the contractual relationships in the context of divisional interdependence. Case studies based on completed questionnaires and field interviews in five large British companies are presented in **Chapter 8**.

Finally, in **Chapter 9** the research hypotheses are evaluated in terms of the analysis and results in Chapters 5, 6, 7 and 8. A second evaluation of the results is also performed in terms of Spicer' s (1988) theoretical model, followed by a comparison between the present study and other studies in the U.K. and overseas. Conclusions are then derived and suggestions for further research on both the domestic and multinational dimensions of transfer pricing are formulated.

## **CHAPTER 2: TRANSFER PRICING IN THEORY: A CRITICAL ASSESSMENT OF THE CLASSICAL APPROACH.**

### **2.1 OVERVIEW OF THE LITERATURE REVIEW**

Transfer pricing is a complex management problem. It requires the interaction - beside accounting theory - of many disciplines including behavioural science, economics and marketing. An abundant literature has been written on the subject since the early fifties. This literature can be classified according to the model employed. There are three major models: a) economic, b) mathematical programming and c) behavioural.

It should be noted at this stage that most of the theoretical work has been done by economists and academic accountants who dealt with the problem within the limited and restrictive boundary of profit maximisation. This traditional business objective is, however, too restricted to allow a comprehensive study of transfer pricing in all its complexity, particularly in today's modern multi-unit, multi-purpose business enterprise characterised by the separation of ownership and management.

The complexity of the subject has indeed revealed the inadequacy of those studies that restricted its analysis to the boundaries of the one discipline or isolated it from the business environment in which the problem is found. Therefore, it is not surprising that a large gap exists between the presentations of theoreticians and the actual procedures used in practice as the empirical evidence in Chapter 4 makes clear.

The present review of the literature covers more than three decades of thought and effort from the mid-fifties until the most recent developments on the subject. It should however be anticipated that, although the theoretical basis for solving the problem has been laid down by Dean (1955), Cook (1955) and Hirshleifer (1956, 1957 and 1964), the very earliest thought on the subject can be traced back to the eighteenth century.

For example, Stone (1973) found substantial evidence from accounting archives that some transfer pricing systems were used by some English cotton mills as far back as 1810. Drumm (1983) contends that the first conceptual proposals were made in 1908 in Germany by Professor Schmalenbach, a renowned German accountant. Eccles (1985) traced the origin of transfer prices back to 1883 and more recently, Fleischman and Parker (1990) provided evidence on transfer pricing in the Scottish iron works between 1759-1786. While Eccles' source is really no more than an assumption made by Sidgwick (1901), an economist, the articles by Stone (1973) and Fleischman and Parker (1990) are based on the preserved data of company practice. It shows that internal pricing was not confined to the large company only but it could be of significant importance for the small and medium company. This was later confirmed by the first survey of British transfer pricing practice undertaken by Livesey (1967). Moreover, the time gap between the data sources - though all of British origin - implies that more investigation is probably needed on the historical development of the problem even prior to the birth of the large company.

The importance of such investigation which deals with accounting change within the context of organisational change is emphasised by Flamholtz (1983). Nevertheless, in the above examples, firms were small, with limited production capacity and managed as a one-unit enterprise. Thus transfer pricing was not a complicated and thorny issue as it has become since the end of the Second World War. It was argued in the preceding chapter that the modern transfer pricing problem is always identified with the decentralisation of organisations into responsibility centres, particularly profit centres.

Leaving the historical research to one side, the early attempts to theorise on transfer pricing were very sporadic with the first articles appearing in the *Journal of Accountancy* (Camman, 1929), *NACA Bulletin* (Seybold, 1935), *Economica* (Coase, 1937) and the *Accounting Review* (Broom, 1948). However the problem came under the serious scrutiny of academics and practitioners after the publication of articles by Cook (1955) and Dean (1955). This was followed by a more systematic approach by Hirshleifer (1956 and 1957). These three works helped stimulate a continuous flow of analytical and empirical research that has never stopped since. At least one hundred articles were published in accounting

and non-accounting journals between 1955 and 1990. This is probably an underestimate given the scattered nature of the transfer pricing literature across more than eighty periodicals. Added to this are the discussions of the problem in numerous accounting and non-accounting books.

Most of this literature has been reviewed - either partially or comprehensively - by Arpan (1972), Abdel-khalik and Lusk (1974), Bailey and Boe (1976), Nieckels (1976), Tang (1979 and 1981), Thomas (1980), Yunker (1982), Eccles (1985), Grabski (1985) and more recently by Ezzamel and Hart (1987). In the present critical review it was felt necessary to classify the tremendous amount of theoretical proposals according to the approach or model used, namely: economic theory, mathematical programming, accounting and management theory.

## **2.2 THE ECONOMIC THEORY APPROACH.**

### **2.2.1 THE CLASSICAL APPROACH: HIRSHLEIFER'S MODEL**

Most of the literature under the economic category has built on the analysis made by Hirshleifer (1956) who approached the transfer pricing issue as a problem in marginal analysis. Prior to Hirshleifer, Cook (1955) and Dean (1955) made some thorough reflections on decentralisation and the pricing of inter-divisional transfers. While Cook advocated market prices and Dean negotiated competitive prices, both authors were, however, concerned with finding the solution that would preserve divisional autonomy and lead to goal congruence. This initial work by Cook and Dean stimulated a more rigorous analytical treatment by Hirshleifer who concluded that market price was the correct transfer price only where the transferred commodity was traded in a perfectly competitive market. If the market was imperfectly competitive or no market existed for the intermediate goods, the correct procedure was to transfer at marginal cost.

Similar to Cook and Dean's concern, the goal of Hirshleifer's analysis was to establish that mode of pricing which would lead the autonomous profit centres to make decisions that would yield the largest profit for the firm as a whole. For this Hirshleifer considered the simple case of a firm with two profit centres or divisions : 1) a manufacturing (or selling) division and 2) a distribution (or buying) division, where there is an intermediate product which is the output as it leaves the manufacturing division, and a final product or output of the distribution division. The main assumptions made were that of technological and demand independence between the operations of the divisions. By technological independence was meant that the operating costs of each division were independent of the level of operations of the other division; whereas demand independence implied that additional external sales by either division would not reduce the external demand for the products of the other, i.e. the external markets for the intermediate and final products were entirely independent.

Three market settings were envisaged. First, there was no external market for the intermediate product, i.e. there was no demand and supply of the good other than generated by the two divisions internally. Second, there was a perfectly competitive external market for the intermediate product. Third, the market for the intermediate product was imperfectly competitive. The original analysis of these three situations and the solutions developed are detailed in Appendix B.<sup>1</sup>

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<sup>1</sup> at the end of the thesis on page 327

When no external market is available for the intermediate product, i.e. there is no market price, a joint-level of output is assumed to be reached by the two divisions. Given that each division produces only one product, the optimal solution for the firm is to equalise the quantity of output of both divisions so that the buying division would handle as much output as the selling division would produce. Stated otherwise, the divisions act as quantity adjusters (Ezzamel and Hart, 1987). For this purpose, the manufacturing division would supply the distribution division with a schedule giving the quantity produced at any given transfer price. Then the distribution division - whose final product is supposed to sell in a perfectly competitive market - would determine its average revenue curve which is the difference between the market price of its product and the transfer price paid for buying internally. The output schedule agreed upon represents the selling division's marginal cost curve. The transfer price is set at this division's marginal cost at the optimal output level which maximises company profits.

When a market existed for the intermediate product, it could be either perfectly or imperfectly competitive. These are Hirshleifer's other two market situations. If the market is perfectly competitive, the assumption of joint-level of output is relaxed so that each division is free - i.e. has full autonomy - to determine its own output. The marginal cost of each division is independent of the marginal cost of the other and thus, both divisions and the company are indifferent between trading the intermediate product within or outside the firm. In this case the marginal cost of the selling division equals the market price of the intermediate product and the transfer price should be the market price of the transferred product.

In the last market situation covered by Hirshleifer where the intermediate market is imperfectly competitive; the general solution is still the same. The transfer price should be set at the marginal cost of the selling division at the optimal output level. In this case the market price for the intermediate product exceeds the marginal cost of the selling division. Consequently, if transfers are priced at market, this would lead to excessive output by the manufacturing division and insufficient output by the buyer division.

Considering the case of demand dependence and technological dependence, Hirshleifer concluded that when demand dependence existed, the analysis was rather complex and the solution fell between market price and marginal cost. When technological dependence existed, the situation was found to be so complex that no solution was derived.

Having exposed Hirshleifer's theoretical treatment of transfer pricing, it is essential to balance the study with the major developments that have built on his path-finding approach. Undoubtedly, a lot of issues have been left out by Hirshleifer and the solutions proposed do not provide panacea for all situations. The three decades that have passed since the formulation of the theory have witnessed the development of important approaches to the problem. With the continual growth of companies and the steady increase in the adoption of decentralisation, a flow of analytical and some empirical studies has produced a large number of proposals. These developments constitute the bulk of the following section.

### **2.2.2 FURTHER DEVELOPMENTS**

Hirshleifer's initial work has in turn stimulated further thoughts and contributions over the last thirty years.

Cook (1955) had briefly mentioned the case where the net prices the buyer and seller divisions could get on the outside market were different - i.e. imperfect market - and the transfer was indeterminate. Gould (1964) built first on this and proposed a remedy to this practical market situation. The existence of the costs of using an outside market such as freight absorption, selling expenses, credit terms and bad debt expenses was already argued to be an important reason for vertical integration (Coase, 1937 and Cook, 1955).

Drawing on the works of Hirshleifer (1956) and Arrow (1959), Gould (1964, Appendix C<sup>2</sup>) then goes on to adopt the method of successive approximations to arrive at the optimal transfer price. First, an arbitrary transfer price is determined by central management. Given this price, each division is then required to calculate the output level that would maximise its profits. This is subject to a major constraint. Gould, like his predecessors, was also concerned with balancing divisional autonomy and corporate goals. Hence the necessity for corporate interference to make the requirements of both divisions converge so that they would lead to the optimum solution for the firm. If supply is greater than demand, the price is lowered by central management; if supply is lower than demand, the price is raised until convergence is reached. The transfer price is thus determined by central management.

This approach has a number of weaknesses. First, the interference of corporate management in the whole process of determining the transfer price hampers the autonomy of the profit centres. Second, as Gould (1964) pointed out, there is room for dysfunctional behaviour by divisional managers if their performance is evaluated and rewarded on the basis of their divisional profits which are function of the transfer price. As the procedure requires that divisions must supply corporate management with information used in the determination of the transfer price, divisional managers might manipulate that information to the detriment of corporate goals. A third difficulty with the procedure is of administrative nature. The series of approximations necessary for the determination of the optimal transfer price might be costly and time consuming. Finally, as divisions must report to central management their maximum profitability levels this also might require costly information flows. Thus the costs of using an outside market would multiply. Consequently, the infringement of divisional autonomy and the irrelevance of book profits for the evaluation of performance lessen the feasibility of the procedure despite providing a possible solution to the problem of additional market costs mentioned by Cook (1955).

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2 at the end of thesis on page 330

A possible remedy was proposed by Ronen and Mckinney (1970) who, for simplicity reasons, considered the case of a firm with two divisions only. The aim of the approach was to enable the implementation of Hirshleifer's system while preserving divisional autonomy. This required the channelling of information between the profit centres and corporate headquarters concerning production and purchase at various non-linear transfer prices, through a seven-step procedure. Basically the divisions supply information to central management on their marginal manufacturing cost and net marginal revenue, i.e., their production and purchase schedules. From this data central management derives an average cost curve (of the selling division) and an average revenue curve (of the buying division). The average cost curve is given to the buying division as its supply curve, and the average revenue curve is given to the selling division as its demand schedule. These cost and revenue curves designate the transfer price to each division for alternative quantities produced and transferred. Obviously the price to the selling division may not be the same as the price to the buying division. For Ronen and Mckinney suggested that the difference between the two prices be bridged by a subsidy to or tax on the selling division, depending on whether its price is higher or lower than that of the buying division.

The above rules applied for all intermediate market situations so that optimal decisions could be achieved regardless of the market situation the firm faced. The suggested approach was believed to lead divisional managers to make decisions that would maximise corporate profits. At the same time divisional profits would reflect divisional contributions to corporate profits because the divisions would *“enjoy the same degree of control over the variables they would influence as an independent supplier or buyer”* (Ronen and Mckinney, 1970, p. 112). In other words, divisional profit contributions shown by accounting reports would always reflect the amount by which corporate profits would be reduced in the short-run if the division is abandoned. Thus, the accounting data could be used by central management for non-marginal decisions like abandoning or keeping a division.

Tomkins (1973) observed that one advantage of the Ronen-McKinney system is that of overcoming the zero profit problem which arises with constant marginal cost or revenue. Abdel-khalik and Lusk (1974) noted several deficiencies with the solution advanced by Ronen and Mckinney. They argued that the subsidy/tax scheme is centrally administered, therefore book profits would not reflect divisional profit contributions. It is doubtful that divisional managers would accept the accounting reports as the measure of autonomous divisional interaction. Similarly it would be difficult to implement the abandonment-continuance decision on the basis of data from accounting reports. In addition to that, as the average revenue curve of the selling division is equal to the average revenue of the final product less the average distribution cost, inefficiencies incurred in the buying division could be passed on to the selling division. Under such circumstances the selling division would secure its position by asking the central office for cost auditing of the buying division. Such action would definitely result in impairing divisional autonomy.

This assessment of the approach has triggered a debate between Ronen (1975) and Abdel-khalik and Lusk (1975). Ronen rejected the remarks as resulting from a misunderstanding of how the Ronen-McKinney system worked. Neither the supplying division nor the buying division lost autonomy because of the supply and demand curves (i.e. sets of prices) supplied by headquarters. They acted just like any independent seller or buyer in a free enterprise system facing a given set of prices. The subsidy-tax scheme was also not imposed by central management but resulted automatically from the payment of a price unit to the selling division. The profits produced were representative of the divisions' contributions and thus they would serve both performance evaluation and the abandonment-continuance decision. Ronen also rejected the argument regarding the communication of incorrect information by the buying division because the latter gained no benefit from inflating its cost schedule. Rather the system provided the incentive to increase profits by decreasing costs. Therefore, neither division was encouraged to cheat but both would be motivated to providing correct information.

Holding to their criticism of the Ronen-McKinney system, Abdel-khalik and Lusk (1975) added that the system would result in information diseconomies because of the re-routing of communication through central management instead of making direct contact between the divisions.

The result of the above discussion is that Ronen and McKinney (1970) attempted a possible implementation of Hirshleifer's model that would preserve divisional autonomy by removing cumbersome restrictions. As their solution is based on Hirshleifer's analysis and is only a variation on it, it is equally subject to the deficiencies of the marginal cost approach.

The two major weaknesses of Hirshleifer's model, namely 1) the loss of divisional autonomy and 2) the possibility of dysfunctional behaviour by divisional managers are stressed by Thomas (1980) in his state-of-the-art synthesis. He strongly argues that the Hirshleifer's model is not goal-congruent in using book profits (affected by transfer prices) for evaluating division managers because these profits do not reflect their success in operations. The same reasoning holds "*with respect to decisions whether to increase, hold constant or decrease investments (and related resource allocations to individual divisions) if the central office bases such decisions wholly or partly on total divisional book profits*" (Thomas, 1980, p. 152).

In addition to that, the system does not provide a basis for abandonment/continuance decisions and fails to prescribe an operational method of implementation. With regard to the first issue Hirshleifer admits that the autonomous calculations based on the transfer price discussed would not be a correct decision to take because an overall examination of the cost and revenue functions of the firm as a whole would be required. Such an approach was taken by Ronen and McKinney (1970) as just examined above. Another attempt was made by Koutsoyiannis (1982) but with a slight variation. Instead of the simple case of two divisions, Koutsoyiannis assumed a firm with two final-product divisions and a common supplier division or what is called an "internal monopoly" (Dopuch and Drake, 1964). The decision to close down a final-product division should be based on that division's separate profit plus its contribution to the profit of the single

supplier division. The decision to abandon the supplying division should be based on its marginal cost curve, its separable fixed cost and the market price. As long as the intermediate product could be bought externally at a fixed price equal to the transfer price, the common supplier division should be maintained provided that its fixed cost is less than its gross profit (Koutsoyiannis, 1982).

These solutions are, however, constrained by the assumption that the demands of the final products are independent so that the demand curves of the two final product divisions for the intermediate product are mutually consistent at all levels of output. The intermediate product market was also assumed perfectly competitive so that the firm could buy any quantity at a fixed price.

A major criticism of Hirshleifer's approach is its neglect of risk and uncertainty. While one of the aims of decentralisation is to try to cope with uncertainty, Hirshleifer dealt only with situations in a certainty environment whereby divisions have perfect knowledge about input/output prices, production functions and demand curves.

An extension of the model to incorporate uncertain environments was suggested by Kanodia (1979) but his analysis also suffers from some weaknesses. The author himself admitted that his paper "*characterizes and analyzes several transfer price systems but does not formulate mechanisms for achieving them*". Moreover, "*the most serious problem with the transfer price systems developed here is that they are not incentive compatible*" - in the presence of risk - (Kanodia, 1979, pp. 74-75 and 97). The approach assumed that divisional managers communicated honestly but, as Gould (1964) and Abdel-khalik and Lusk (1974) mentioned, these managers might misrepresent their demand and supply functions in order to secure more favourable transfer prices.

Similar to Kanodia, Ismail (1982) developed a system whereby he incorporated external demand uncertainty for the selling division's products, particularly the intermediate product. The rule developed assumed that the price to the buying division was a decreasing function of the quantity demanded and the price for the selling division

was an increasing function of the quantity demanded. This model which assumed linearity is subject to the criticism of the linear programming models which will be made later in Section 2.3.

Other contributions have been made by Enzer (1975), Jennergren (1977) and Blois (1978). Enzer (1975) argued that the general rule of pricing at the marginal cost of the selling division under static conditions and certainty was not correct because the transfer price was not independent from the amount acquired. He suggested instead that the transfer price be a form of average cost. Enzer's solution was criticised by Jennergren (1977) in that it would lead to centralising decision-making for the selling division which would no longer be considered as a profit centre.

Blois (1978), on the other hand, expanded Hirshleifer's analysis to determine the price and quantity at which a transaction between a large customer and a supplier would occur in an imperfectly competitive market. The main conclusion of the analysis was that a large customer was able to impose special requirements upon its suppliers, for example, price concessions. The model showed also that the large customer could impose the marginal cost transfer pricing rule on its suppliers. To be able to do this, the customer would need accurate estimates of the suppliers' costs.

Building on the works of Hirshleifer (1956 and 1957) and Arrow and Hurwicz (1961), Copithorne (1976) made an analysis identical to Gould's in the use of successive approximations to arrive at the profit maximising transfer price. The analysis is therefore plagued by the usual problems of central management interference and the lack or loss of divisional autonomy, the need for excessive information flow; and the possibility of dysfunctional behaviour by division managers. To counter the last of these problems, Copithorne (1976) noted that divisional managers should not be rewarded on the basis of their division's profits which were a function of the transfer price, but he failed to provide an alternative basis of evaluation and reward. He also argued that the method of successive approximations was not complicated given today's highly efficient information technology, but again lost sight of the costs it would incur.

A model of transfer pricing in a socialist economy was proposed by Gordon (1970). The model sought to approximate the properties of perfectly competitive market prices in the absence of the market mechanism. Briefly, the firm in a socialist economy was simulated to a unit or division in a decentralised firm in a market situation. The firm's standard transfer price is equal to its expected average full cost of production plus a standard or predetermined profit per unit of output. The firm's sales are assumed equal to its standard output. If actual sales are higher (lower) than standard output, the actual transfer price moves above (below) the standard transfer price.

Most (1971) commented that Gordon's model is affected by the restrictive assumptions of the neo-classical theory of the firm on which it relies. For pure competition to exist there must be 1) no restrictions on buyers and sellers, 2) complete mobility of factors of production, and 3) buyers and sellers should have perfect knowledge of the activities of other traders. Otherwise, the suggested system could not be operational. Abdel-khalik (1971) also showed that the system could induce dysfunctional behaviour.

Horwitz (1970) examined transfer pricing within the decentralised Soviet enterprise which consists of departments or shops. The primary concern of the control system is the allocation of bonuses to these shops depending on their efficiency, measured by profit and the accounting rate of return. The unit transfer price is similar to that suggested by Gordon (1970). It is calculated "*by adding a portion of the enterprise's planned profit to the fully allocated shop cost*" (Horwitz, 1970, p. 62). This implies that instead of affecting divisional profits, the transfer price is itself affected through the allocation of profit to the individual shop. Thus, the assigned price does not measure opportunity costs and, consequently, the system "*does not serve the goal of profit centre responsibility*". It is rather "*an internal reporting mechanism which serves to interest personnel in profit and to provide a crude mechanism for distributing bonuses*" (Horwitz, 1970, p. 63).

The foregoing exposition of the classical economic approach of the transfer pricing problem and the major developments and extensions of the original analysis needs some thorough discussion supported by data from practice wherever possible.

## **2.2.3 DISCUSSION**

### **2.2.3.1 PERFECTLY COMPETITIVE INTERMEDIATE MARKET AND THE MARKET PRICE.**

The perfectly competitive intermediate market is probably the easiest case for which to determine the correct transfer price. In such a market there is only one price for the product and that price is not sensitive to quantities bought or sold by any division of a single firm. Also, the marginal revenue obtainable for the intermediate product is equal to its external market price at all levels of output. The external market price may require adjustments to account for cost savings (selling, shipping, etc) on trading internally.

It seems also that there is a universal agreement in support of Hirshleifer's advocacy for the use of external market price. For instance, Gould (1964) strongly argues that where the intermediate product can be traded in a perfectly competitive market outside the firm, the transfer price should be the market price and the divisions should be free to trade inside or outside the firm. In fact, the selling division would be indifferent as to whether it sold its units to an outside customer at the going market price or to a sister division at a market-based transfer price. Moreover, as pointed out by Dopuch and Drake (1964) and Anthony and Dearden (1980), when transactions are recorded at market price, divisional profitability represents the real economic contribution of the division to corporate profits. The use of such prices is believed to expose divisional managers to the same competitive pressures on cost as they would experience if they were the managers of independent companies. In these circumstances and since the primary objective of decentralisation is to create autonomous units operating as independent enterprises, market prices provide the most logical prices for transferred goods for a number of reasons. The following are suggested in some of the literature (Dopuch and Drake, 1964; Shaub, 1978; Choudhury, 1979; Miller, 1982; Anthony et al., 1984; Lynch and Williamson, 1983; and Arnold and Hope, 1983):

- 1 - market prices represent an appropriate measure of the opportunity cost of internal transfers as opposed to external sales.

- 2 - since they represent an opportunity cost, their employment will permit optimal allocation and efficient utilisation of the resources of the firm.
- 3 - as market prices are externally determined (i.e. independent of internal conditions), they provide an objective basis by being free from possible internal bias.
- 4 - a market-based transfer price is likely to provide an incentive for production efficiency because excessive cost cannot be passed on to buyers.
- 5 - divisional managers have full control over their sources of revenue (both internal and external) and thus the evaluation of their performance based on profitability will have positive motivational response.
- 6 - divisional profitability can be compared directly to the profitability of outside companies in the same type of business in order to allow better informed capital budgeting and strategic decisions to be made.

The above advantages are apparently supported by empirical findings. Solomons (1965) found that the most common methods used among his sample firms were market price or market price less selling expenses. More than half the firms surveyed in the 1967 Conference Board study used market-based transfer price either alone or in combination with some form of cost method. In Piper's (1969) study on transfer pricing practice in British industry, 53% of the respondents used either going market price or market price adjusted for transport, quantity discounts, quality or other factors. Rook (1971) found that 54% of 193 responding firms used market-based transfer prices. The prices used were, however, not uniform. The market price was modified in 61 companies to allow for costs of access to the market, or in the presence of idle capacity. The modification was operated basically to encourage internal trading in order to mop up excess capacity or reflect savings in costs of going to the markets. In the remaining 43 companies, goods were transferred at the going market price. Several of these companies thought that a system of unmodified market prices encouraged usual competitive pressure and ensured

keen pricing and regular review. Obviously this could be justified if the firms were operating under conditions of full capacity and negligible costs of access to the market, or when internal trading is encouraged because the respective opportunity costs are less than when trading externally.

Similar supporting empirical evidence can be found in some other major studies. The results of the Manchester Business School's project (1973), Tomkins (1973), Emmanuel (1976), Vancil (1978), Wu and Sharp (1979) and Benke and Edwards (1980) indicate that market prices are important, if not predominant in industrial practice.

In a survey undertaken in West German companies, it was found that most transfers between divisions were valued on market-based prices (Forrester, 1977 and Jennergren, 1981).

Scapens et al. (1982) found that most internal transfers were negotiated and in most cases (68.6% in the U.K. and 50.9% in the U.S.A.) negotiation was based on market price. Price Waterhouse's (1984) survey revealed that negotiation was also practised in the majority of companies (36/50) and 42 of the 50 companies using transfer prices based their prices on the market. The survey reported by Whiting and Gee (1984) showed that market-based methods were used by 23 companies, i.e. 41% of the respondents. The detailed analysis presented later in Chapter 4 and 6 confirm these results.

Despite the empirical evidence, it should not be hastily concluded that market-based transfer prices are the ideal and the best whatever the situation. There are indeed limitations to their claimed usefulness.

A primary disadvantage of a market-based transfer pricing system is that it relies on the assumption that a stable market exists for the product and that the divisions have access to that market. Unfortunately, few firms can either buy or sell in such a market in real life. Even when it does exist, prices often fluctuate widely. Cook (1955) mentioned the case where the net prices that the buyer and the seller can get on the outside market might be different owing to freight absorption, selling expenses, credit terms, bad-debt expense, etc. Which of the two prices should be the optimal transfer price? Cook (1955)

asserted that this difference of price allowed some room for negotiation between the divisions but there was no rule that could say where in that range the transfer price should fall. This situation has been dealt with by Gould (1964) and Tomkins (1973) as is graphically depicted in Appendix C.

Another limitation is that the market price does not always represent the firm's opportunity cost. It does so only if the supplier has an external purchasing offer to decline (Emmanuel, 1977 and Shillinglaw, 1982). In other words, the transfer price should reflect the amount the selling division could have received from its next best alternative, and that the buying division should not be made to pay a price greater than that of its next best alternative. Therefore, it can be deduced that, if the market-oriented transfer price provides relevant information to a division's profit performance measure, its use in decision-making can have adverse consequences.

The divisional manager may be tempted to improve his own performance to the detriment of the firm as a whole. For example, the manager of the division producing the intermediate commodity may opt for an external sale if the price offered on the external market is higher than an internal (transfer) price because he is motivated to improve his unit's profit performance. The risk with the reliance on the external market is that the external supplier may quote a temporarily low price in attempt to buy into the business and dispose of excess inventory or to use idle capacity, with the expectation of raising prices later (Gray and Ricketts, 1982 and Kaplan, 1982). One can imagine the disruptive effects of such eventuality on the selling division and the potential internal conflict that it can lead to. The same result would also happen if the buying division acquires the intermediate product externally at a price lower than the internal transfer price. This situation becomes more complicated when the internal supplier with excess or idle capacity has no alternative use for that capacity. Thus the relevance of market-oriented transfer prices is rather questionable when there is price fluctuation and competition in the (external) intermediate market.

In addition to the above shortcomings, Solomons (1965) mentioned some other forms of imperfection:

“The transfer product may have special characteristics which differentiate it from other varieties of what may loosely be termed the 'same' product. As a result, the market for it may in fact be restricted. This means that the ruling price will not be independent of the activities of the two divisions. In particular, it is likely to be sensitive to any quantities which the supplying division sells on the market or which the consuming division buys on the market. A given price may mean many different things according to the terms relating to delivery, payment, service and warranty which constitute part of the deal. The price for a given commodity may be widely different in a long-term contract from what it would be in an isolated transaction” (Solomons, 1965, pp. 177-78).

Nonetheless, when the market imperfection is slight, the firm may still be able to sell all its intermediate product externally but at some price concessions. Thus the market price can be used for internal transfers. However, when the market imperfections are major, external sales of the intermediate product would be possible only with substantial price concessions and thus the prevailing market price cannot be used for internal transfers.

These arguments find support from empirical research. Benke and Edwards (1980) found that only two of the companies surveyed used strict market prices, whereas the most popular method in use was the adjusted market price. The adjustment is made to allow for market imperfections because the essential requirement for the use of the prevailing price - which is the existence of a perfectly competitive market - is unlikely to exist at least for certain kinds of goods.

In summary, there is substantial theoretical and empirical support for market-oriented transfer prices. However, for the market-based system to work efficiently there is the pre-requisite of an active, competitive outside market for the transferred commodities. In such a market any company can trade a product in arm's length transactions at the prevailing or going market price, i.e. whereby profit centres have the freedom to act independently. Unfortunately, very few markets are perfectly competitive and very few products are perfect substitutes for each other. This has led companies not to use the prevailing market price as this would result in dysfunctional decisions. They

opted instead for adjusting the market price to allow for imperfections, or to let the managers of the supplying and buying divisions engage in negotiations to arrive at fair adjustments to the going market price.

The negotiated prices are also subject to some conditions. First, an external intermediate market must exist; second, managers of concerned divisions should have full access to market information; third, either division should have access to external sources of the same or a substitute product; and finally, top management must be fully supportive of the negotiation process. Otherwise, the negotiations would be unlikely to succeed in setting the correct transfer price.

Given that markets for intermediate commodities are, in most cases, not perfectly competitive, i.e. the market price is not always relevant for internal transfers, let us now turn to the solution advocated by Hirshleifer - the marginal cost approach - for the more common situation of market imperfection.

#### **2.2.3.2 - THE MARGINAL COST APPROACH WITH IMPERFECTLY COMPETITIVE EXTERNAL MARKETS**

The most general results of Hirshleifer's work are that transfer prices should be set at marginal costs. The marginal cost is the change in total costs resulting from a one-unit increase in quantity. Similarly, the marginal revenue is the change in total revenue resulting from a one-unit increase in quantity (Dixon, 1966).

Economic theory concludes that the most profitable price-output combination will be the one where marginal revenue and marginal costs are equal. This economic theory of pricing was suggested by Hirshleifer when no market existed for the intermediate product and for the more complicated case where the market exists but is imperfectly competitive. Even in the case of a perfectly competitive intermediate product market, he demonstrated that the transfer price - the market price - was also equal to the marginal manufacturing cost. The contention that marginal cost pricing was the more general solution was thus justified. This is explained by Solomons (1965, p. 179) in the following terms:

“even when there is an outside competitive price which can be used, the marginal cost rule still holds. The transferor division should produce up to the point where its marginal cost equals the competitive price, so that by setting the transfer price equal to the competitive price we are also setting it equal to the transferor division’s marginal cost for its marginal unit of output”.

In short, the incremental cost rule and the market price rule for transfer pricing are not in conflict when a perfectly competitive intermediate market exists.

A similar strong argument in support of marginal cost was made by Goetz (1967). He proceeded by the case method and contended that both market price and average historical cost would be irrelevant and dysfunctional to corporate welfare. He concluded that *“the unique correct transfer price in intra-company transfers is incremental cost”* and that *“relevancy and goal congruence demand that incremental costs be used as transfer prices”* (Goetz, 1967, pp. 436 and 440).

The above arguments imply that marginal cost measures the supplying division’s short-run incremental cost of supplying the intermediate product. Stated otherwise, when no intermediate market exists or once the assumption of a perfect market for the intermediate product is released, it results that opportunity costs are not measured by market prices but rather by the marginal or incremental cost to the selling division. Therefore, marginal cost measures the sacrifice the selling division makes by supplying the product. This claim of setting the transfer price equal to the marginal cost of production at the optimal output is simply based on the notion that the manufacturing division will go on producing up to full capacity so long as the marginal revenue of the product sold is greater than the marginal cost of producing it. The same reasoning applies if the selling division operates both internally and in an outside market. It will continue to produce and sell to both markets until the marginal revenue in each market is equal to the marginal production cost at the optimal output level.

The marginal cost approach is not free from problems. The most obvious disadvantage is that the system implies that all the units of the transferred product are charged at the marginal cost of the final unit. If the marginal cost increases with output,

then it will provide the supplying division with some contribution to its fixed costs and profit. If the marginal cost is constant (or decreasing) then clearly the supplying division does not absorb its fixed costs in the transfer price and thus is not permitted to earn a profit on the transfer product. Most of the profit contribution will be lodged with the buying division. In this way the supplying division is forced to operate at a loss and thereby its autonomy is reduced, especially if the transferred product represents the majority of its output. The problem is obviously more acute if the internal trading takes places between several divisions in sequence with the final division accruing much of the profits. Consequently, such a system of pricing ignores the divisional performance measurement aspect when considering profit centres in a divisionalised firm. Therefore, as noted by Young (1976), Kaplan (1982) and Grabski (1985), marginal cost pricing cannot be employed without the removal of the decision-making autonomy from divisional managers and, evidently, must not be used for evaluating performance or for the motivation of divisional managers.

A reciprocal disadvantage is that, if the manager of the supplying division is evaluated on the basis of his division's profit, it is very likely that he will - at least in the short run - overstate the marginal cost of production in order to obtain a higher transfer price and thereby increase his divisional profit. Thus, the marginal cost pricing may provide strong incentives for the manager of the supplying division to build slack in the cost function of producing the intermediate product. Hirshleifer (1956) discussed the problem of manipulation of the marginal cost curves by divisions and the consequent exploitation of one division by the other, particularly when no market exists for the intermediate commodity. This refers to the simple maximiser case where the supplying division behaves as a monopolist seller or the buying division as a monopsonist buyer (Onsi, 1970). Naert and Janssen (1971) demonstrated that sub-optimisation could also occur without inter-divisional exchange of marginal cost information. Obviously when divisions (and their managers) are judged on their profits, each division will try to maximise its own profit even if it is at the expense of other divisions and the firm as a whole. In other words, "*there is both the incentive and the opportunity to cheat*" (Gould,

1964, p. 67). To counter this non-optimum behaviour it is often suggested that central management's intervention is necessary and unavoidable (Hirshleifer, 1956 and Fremgen, 1970). However, such intervention implies that the purpose of controlling managerial performance through decentralisation is not served (Dorward, 1987).

A third difficulty with the system is the calculation of the marginal schedules. In practice both the marginal revenue and marginal cost curves are not known (Flavell, 1977 and Maciariello, 1980). Even if they are estimated, they are still likely to change rapidly, particularly in the large multi-division, multi-product firm. Moreover, the data obtainable from the internal cost accounting system are only average (constant) variable and full costs, not marginal costs. It should be noted at this point that Hirshleifer has used the term "marginal cost" in the context of economic theory whereby it signifies "*the additional cost of producing an additional unit where cost includes returns to all factors of production including the cost of capital*" (Abdel-khalik and Lusk, 1974, p. 13). A straightforward deduction from this is that such a definition differs largely from the accounting meaning of the term, i.e. the variable or direct cost of producing one additional unit. This difference in meaning and context creates a practical difficulty in implementing the marginal transfer pricing system because the accounting marginal cost does not include investments in fixed assets or returns to capital. Given that marginal cost is usually approximated by companies by means of the accounting notion of variable cost (assumed constant for all levels of output), this results in "*the producing (selling) division, at best, breaking even in terms of the marginal profitability on the internal transfers. This is hardly likely to provide a strong motivation to sell internally within the group, even if it is in the group's interest*" (Tomkins, 1980, pp. 249-250).

The essence of this practical difficulty stems from the non-realism of economic theory in assuming optimal behaviour (Tomkins, 1980) in a world of risk and uncertainty. As seen earlier, this is one of the shortcomings of Hirshleifer's analysis which assumed that divisional decisions were made in an environment of certainty. In a world of risk-taking because of uncertainty, the notion of maximising profits - which is the depart point of Hirshleifer - loses most or all of its significance. Therefore, the transfer price

based on variable cost can be maintained only if the divisions (or the company as a whole) contend themselves with achieving satisfactory profits instead of maximum profits (Gunn, 1981). In this sense the variable cost can be adjusted by adding, for example, a percentage-on-cost for profit and fixed costs. Tomkins (1980) argued that this procedure will preserve the apparent theoretical optimum and yield satisfactory divisional performance.

A further practical limitation to the marginal cost system is when there are capacity constraints, that is when there are restrictions on divisional resources. If the supplying division is operating near a capacity constraint, it will not be able to increase its production to the point where marginal revenue equals marginal cost. If it is operating below capacity, its opportunity cost will no longer be represented by the marginal cost but rather by the profits foregone by not meeting all the demand for the product. Similarly, marginal cost may be less than opportunity cost when operations are at or above capacity.

The adequacy and relevance of marginal cost pricing should also be considered in the light of the time factor. This fits in with the purpose of the present research: the study of transfer pricing in the organisational context. More than two decades have now elapsed since Hirshleifer's proposal and during this time the manufacturing company has undergone tremendous technological and organisational changes. Companies have grown bigger through internal expansion, mergers and acquisitions, modernised their technologies and became more diversified in their products and markets. As a consequence, direct costs no longer represent a high proportion of total manufacturing costs as they used to be (Cooper and Kaplan, 1988, Johnson and Kaplan, 1987 and Sponza, 1989). Thus, fixed costs cannot be ignored even in short-term decisions in the modern corporation. Given that variable costs are only a small part of total costs, a transfer price comprised of only variable costs would be totally unfair and unacceptable to the selling profit centre. If total cost is used then a major part of the buying division's variable cost will consist of the selling division's fixed costs passed on in the transfer price. In such a situation, the marginal cost to the company is significantly different from the marginal

cost to the buying division. If the selling division's fixed costs increase with production levels and the buying division is bound to buy internally then the marginal cost concept obscures decision making. The unpopularity of marginal cost transfer pricing reported by previous empirical studies later discussed in Chapter 4 substantiates this claim and indicates that the problem is more of an organisational and behavioural nature than of mere cost calculations.

#### 2.2.4 CONCLUSION

Economic models seek the application of economic efficiency principles to the transfer pricing problem. The decentralised organisation is viewed as a small economy made of a number of interacting units or divisions. Just as for an economy, the co-ordination of these interactions can be achieved by means of the price mechanism. Seminal works have been provided by Hirshleifer (1956, 1957 and 1964). Hirshleifer developed the micro-economic foundation of the problem and demonstrated the optimality of using the marginal cost of the supplying division as the appropriate transfer price even when a perfectly competitive market exists for the intermediate product. This would achieve maximum efficiency for the firm, namely the maximisation of the firm's profits.

The discussion of the system has highlighted its advantages and disadvantages and most writers conclude that there are theoretical and practical limitations to its implementation. Moreover, the suggested solutions are valid only under a set of assumptions appropriate only to the highly restrictive case of a two-division firm. This rendered the system rather questionable with regard to divisional autonomy and performance evaluation, particularly in real world situations of multi-division, multi-product companies. Furthermore, no practical method for implementing the system was formulated. An attempt to fill in this gap was made fourteen years later by Ronen and Mckinney (1970) but the usefulness of the proposed solution in practice is questionable.

Despite its shortcomings, Hirshleifer's theoretical analysis has always been considered the foundation reference for any reader or researcher on the controversial issue of transfer pricing. It has, in fact, stimulated a stream of literature supporting, criticising, amending and expanding his model.

In general, the economic models fail to adequately study the transfer pricing problem because they deal only with simple cases under a set of limiting assumptions. Being based on marginal cost analysis and focusing on profit maximisation, economic models do not preserve divisional autonomy as the level of production and consumption as well as transfer prices and profits are predetermined - hence the inadequacy of profits for evaluating performance. Dysfunctional behaviour, such as the manipulation of cost information by divisional managers, is also more likely because of the inequities of the marginal pricing system. In addition to that, economic models assume the firm to be operating in certainty environments where no capacity (or other) constraints exist.

To overcome the aforementioned problems and in order to handle the pricing of inter-divisional transfers in a more realistic and efficient manner, solutions have been proposed through the application of mathematical programming. Three major approaches have been developed for this purpose. These are 1) the linear programming models, 2) the decomposition models, and 3) the goal programming models. They are discussed in the next section.

## **2.3 MATHEMATICAL PROGRAMMING MODELS**

The literature in this domain can be classified into two groups (Demski and Krepps, 1982). The first group focuses on the imperfectly competitive market and develops algorithms to determine transfer prices that would achieve efficient allocation of resources under capacity constraints. The second group is concerned with the agency relationships and investigates how the centre could provide incentives to get divisional managers truthfully reveal the private information they possess in order to optimise results. It seems that the later group is a promising area of research (for instance, Harris et al., 1982 and Cohen and Loeb, 1982).

While economic models are based on the marginal cost analysis, the transfer price under mathematical programming is set at the opportunity cost of producing the intermediate product. Several procedures have been developed and applied to the determination of transfer prices and the allocation of scarce resources. They can be classified under three major headings: 1) linear programming models, 2) decomposition models, and 3) goal programming models.

The present review will only shed light on the major developments in the application of these models to transfer pricing. Thomas (1980) has already succinctly summarised and discussed most of the contributions in this field.

### **2.3.1 LINEAR PROGRAMMING MODELS**

Linear programming is a method basically developed for determining optimal programmes of interrelated activities given a limited amount of resources during a certain period of time. The optimum of the programme may be a maximisation or minimisation of some measure of effectiveness called the objective function. Typical objective functions are the maximisation of profit contributions or the minimisation of costs in view of a set of limiting factors or constraints.

The linear programming approach to transfer pricing has dealt with two problems simultaneously: 1) the allocation of scarce resources and 2) the determination of transfer prices. The latter result from the calculation of the shadow prices (or dual values) of the scarce resources.

An early application of the approach was proposed by Dopuch and Drake (1964) who identified three types of market orientation :

- a) - Internal monopsony, which means that there is only one buying division and more than one selling division. In this case, marginal costs were suggested as the basis for setting transfer prices. As there is only one buyer, divisions would compete on internal efficiency and have no control over the selling price.
- b) - Internal monopoly, which means that there is only one selling division and more than one buying division. In this case, the selling division occupies a dominant position that reduces the autonomy of the buying divisions with regard to their inputs. Thus, decentralisation is rather hampered.
- c) - Monopolistic competition, which means that there is more than one buying and selling division using fixed common facilities to produce a variety of possible outputs. Transfer prices are either set by central management according to some allocation model, or they may be negotiated.

These three market situations could be supplemented with Thompson's (1967) three types of interdependence:

- a) - Pooled interdependence, here divisions share a source but have virtually no contact with each other.
- b) - Sequential interdependence, where the output of one division becomes the input of another as in the case of vertically integrated companies,
- c) - Reciprocal interdependence, where the outputs of divisions become the inputs for each other.

The situation of monopolistic competition and reciprocal interdependence is too complex to be dealt with using a simplistic approach. This has prompted the introduction of linear programming. Under this approach, the transfer price is, as stated earlier, set at the opportunity cost of producing the intermediate product, measured by shadow prices associated with the scarce inputs. The opportunity cost is the cost of the next best alternative foregone to the one actually taken. The most important contributions in the use of linear programming for pricing transfers are discussed below.

Samuels (1965 and 1969) argues that programming is a natural extension of the principle of marginal costing to situations with more than one limiting factor or constraint. He proposes an opportunity cost procedure similar to Hirshleifer's but based on a linear programming solution to resource allocation and transfer pricing. Divisions are charged for lost contributions or opportunities so as to discourage them from engaging in sub-optimal behaviour. This system of penalties is also an efficient means of control that would enable the firm to optimise its objectives.

Commenting on Samuel's solution, Bernhard (1968) indicates that shadow prices are accurate measures of opportunity costs as long as two conditions prevail : 1) the product mix does not change and 2) resources are efficiently utilised. Otherwise, the solution would no longer be optimal. Nevertheless, this is not considered as a severe limitation as constant revisions are always necessary to update plans and objectives (Samuels, 1965).

However, the approach suffers from the familiar problems of autonomy and performance evaluation. It leaves divisions with zero profits at the final iteration and requires terminal intervention by the central office to ensure optimisation (Thomas, 1980).

The use of opportunity cost for pricing transfers has been suggested by Onsi (1970) as a better approach than economic transfer pricing systems. Onsi illustrated this with an

example of two profit centres where the selling division produces two independent products. One of the products has no external market and is transferred to the distributing division. The transfer price of this product is equal to the opportunity cost or the shadow price of the resources utilised in its production. This solution is arrived at through a mathematical programming approach based on the decomposition principle which will be examined in Section 2.3.2.

A simultaneous attempt was made by Manes (1970). Considering the possibility of using shadow prices to calculate transfer prices, Manes worked through a numerical example based on the Birch Paper Company. This is a well known Harvard Business School case study written in 1957 and reprinted in Anthony and Dearden (1980). The linear programme formulated for the problem shows - after twice modifying the original case - that it is possible to calculate transfer prices from shadow prices.

The usefulness of the model is subject to the following comments. Solomons (1965) noted that shadow prices could not be used directly as transfer prices but have to be supplemented by the variable costs of the materials incurred up to the point of transfer. Moreover, as shadow prices are the dual values of capacity constraints, divisional managers may tend to underestimate their capacity, or generally not to have excess capacity because divisions with excess capacity would have zero dual variables. This is particularly true when profits are allocated to the most tightly constrained divisions. Shadow prices - and the linear assumption - imply that large changes in transfer prices (as well as profits) would occur depending on whether divisions reach or recede from capacity. Furthermore *“when a dominant restrictive constraint is relaxed, then a second constraint will become dominant and a change occurs in shadow prices. Consequently, this will set a new ‘ruling’ shadow price for the sub-system. There is nothing in a sub-system model to say that this new shadow price will be in even the same range as the old - or in that range adjusted for the costs and gains accruing to the relaxation expenditure”* (Hayhurst, 1976, p. 98).

This sensitivity and volatility of transfer prices in response to changes in capacity conditions would affect divisions whose performance is judged on the basis of those

transfer prices. Kaplan (1977) observed that when there are constraints other than production or capacity constraints, it is not clear which division would be credited with the shadow price and the imputed profit.

Monden (1982) examined the problem of human resources re-allocation among departments in the decentralised firm by using a transfer price based on a shadow price. The transfer price is a backward transfer price in that it is used by control management to ensure efficient absorption of excess manpower. The receiving departments are "*rewarded*" by top management with the transfer price for taking in staff from other departments. However, no assumption is made for outside markets for excess resources and the transfer price is centrally fixed.

Above all the linear programming approach impairs divisional autonomy as the optimal output decisions are determined by central management. This requires detailed knowledge of the divisions operating conditions and thus the information economies sought from decentralisation are counterbalanced. As a consequence, the motivational effects expected from the creation of (autonomous) profit centres are impeded and probably lost altogether because of the imposed inputs, outputs and transfer prices. Therefore, the efficiency and fairness of a linear programming transfer price system are as much discredited as the marginal cost pricing approach.

The above problems led Manes (1970) to conclude that it is rather difficult to consider the use of linear programming shadow prices as relevant transfer prices. This view is not shared by Onsi (1970) who considers that an optimal solution derived from shadow prices and accepted by both corporate management and divisions is feasible.

Manes' conclusion finds support from Barron (1972). Commenting on Samuel's (1965 and 1969) and Solomons (1965) interpretations of the Hirshleifer's model, Barron concluded that linear programming prices were of little value in helping to set internal prices for divisional control. A great deal of loss of autonomy was required for an optimal allocation of company resources.

Both Manes' and Barron's conclusions seem to be in conflict with the views held by Onsi. However, there is not much comparison because Onsi (1970) used the decomposition principle, an approach favoured by Barron (1972).

### **2.3.2 DECOMPOSITION MODELS**

Decomposition has been developed primarily as a computational tool for complex linear programming problems. The major breakthrough was made by Dantzig and Wolfe (1960 and 1961) in discovering the decomposition principle.

Baumol and Fabian (1964) demonstrated that the principle could be applied to decentralised planning to solve complex optimisation problems. This is a major step in the application of mathematical programming to inter-divisional pricing. It is also a considerable effort to circumvent the limitations associated with the typical linear programming models. The method aims at providing internal prices for decentralised decision-making in the presence of external economies and diseconomies. In other words, it decentralises the mathematical programme.

The decomposition involves the breaking up of the overall corporate optimisation problem into a master problem and a set of sub-problems based on a number of constraints. Each division may have its independent constraints and at the same time compete with other divisions for common resources. The allocation of these scarce resources in an optimal way is a major concern in the application of linear programming models as discussed in the previous section. This is also a major objective of the decomposition approach.

There are two basic different styles of decomposition algorithms: 1) the price-directive and 2) the resource-directive; (Geoffrion, 1970 and Burton et al, 1974). The price-driven model allocates resources on the basis of transfer prices, while the resource-driven model deals with the direct allocation of fixed quantities of scarce resources to each division. The Baumol-Fabian algorithm mentioned above is price-driven, and just as resource-driven models, it is iterative in nature. It involves considerable back and forth exchange of information between central management and

divisions as if both parties engage in a series of negotiations. The procedure uses a generalised interpretation of the shadow prices of linear programming duality theory. Each division has its linear programme which generates details of its plans to central management. The procedure contains the following steps :

- 1) - Top management sends information to divisions on prices of company scarce resources and a set of transfer prices,
- 2) - Given these prices, each division submits its optimal plan of operations to top management, including the amount of resources required,
- 3) - Top management uses the divisional plans as inputs for its mathematical formulation to determine new prices,
- 4) - Steps two and three are repeated until top management decides that the total profit is satisfactory,
- 5) - When there are no more changes in the prices, top management tells divisions what combination of their plans to achieve.

A close look at the above steps reveals that under this iterative approach, central management need not know too much about division technological arrangements. Divisions need only report to corporate headquarters their optimal plans based on current prices sent by the latter. This minimises the information flow between divisions and corporate headquarters. Beside that, the method establishes negotiation between top management and the divisions, and hence eliminates confrontation which leads sometimes to conflict between divisional managers. The approach may, however, be criticised on lack of divisional autonomy. Just as with the method of successive approximations discussed previously, the decomposition procedure centralises the determination of transfer prices at corporate level and thus does not permit autonomous divisionalisation. Since the figures are imposed on the divisions by central management, Baumol and Fabian themselves noted that *“there is no automatic motivation mechanism which will lead division managers to arrive at such a combination of output of their own volition. In this*

*way, the decentralisation permitted by decomposition breaks down completely at this point”* (Baumol and Fabian, 1964, p. 14). Therefore, the information economies advantage of the approach is inevitably offset by the lack of divisional autonomy and motivation.

Prior to Baumol and Fabian, Whinston (1964) arrived at similar results by applying the iterative procedure to decentralised decision-making. Whinston observed and concluded that in the presence of externalities (dependence between divisions) and price guides (as devised by economic theory) were no longer adequate for individual decision-makers to achieve joint-profit maximisation. For this, the decomposition was carried into non-linear cases and mechanisms were developed for altering input and output prices and fixing transfer prices.

To address the aforementioned deficiencies of the decomposition approach, Charnes et al. (1967) argued - via the Birch Paper Company case - that control through decentralisation by prices alone was not possible and that additional information (called pre-emptive goals) was necessary. Basically, central management would delegate part of the company's resources to each division in the form of goals placed in a priority order, and penalties for deviations. This would leave divisional managers with more autonomy in the decision process. This unique organisational structure was termed "coherent decentralisation" as the unit's drive to individual profit goals would result in overall optimal profit and not in a competitive behaviour. Moreover, divisional managers' performance would be evaluated with respect to the activities under their control. The ambiguity of the model is on how much autonomy is left to divisions when all the pre-emptive goals have been dictated by corporate headquarters.

In general, this pre-emptive goal model is an extension of the decomposition principle and a basis for Hass's (1968) decomposition algorithm for quadratic programming. This latter was designed to overcome the loss of autonomy for decision-making by divisions because of intervention by corporate headquarters. Hass (1968) found at least two problems with the linear programming decomposition model.

It dealt with flat demand and supply curves, whereas most industries were (thought) oligopolistic. Secondly, it did not take into account any type of demand and supply dependence.

The quadratic decomposition algorithm differed from previous models because of the inclusion of divisional demand curves. Optimal plans are again found through an exchange of information between corporate management and divisions. The mechanism used is a linear adjustment of the divisional demand curves, taking into account constraints of the resources shared by the divisions. Under this model, externalities are accounted for and divisions could still make profits even though they were charged with the opportunity costs for the scarce resources they use. Nonetheless, central management still intervenes to specify transfer prices as well as deciding on the final iterations of the programme. Thus, divisional profits are centrally administered. This renders divisional autonomy as well as performance evaluation on the basis of such profits rather questionable.

Another version of the Dantzig-Wolfe algorithm was proposed by Jennergren (1972). Under this approach instead of issuing optimal production orders to the divisions, top management issues optimal price schedules. On the basis of these schedules, each division buys corporate resources and produce so as to maximise its divisional profits. If a division demands more corporate resources, the central office responds to this by raising prices by non-constant amounts or margins. It is thought that such an approach would more positively motivate divisional managers than it could if production orders were issued instead.

Jennergren's and Hass's analyses are identical in the sense that *“optimum solutions were found by communicating a price function rather than a single price to the divisions. Upon receiving the final price function, the divisions behaved in an independent but optimal manner with respect to the firm's objective”* (Bailey and Boe, 1976, p. 561). Under these price-directive models, divisions' book profits are to be determined by iterative exchanges with a manipulative central management.

A different approach to the ones described so far was suggested by Godfrey (1971). Having noted the major drawbacks of the decomposition models, mainly the centralisation of decision making and the consequent impediment of divisional autonomy, Godfrey presented a resource-directive alternative. The solution was later adapted by Mephram (1980) to incorporate transfer pricing. Their combined model consists of the following sequential phases:

- 1 - divisions submit their forecasts to corporate headquarters, including their demand for products, prices and divisional resources available. With this information central management constructs an overall linear programme for the whole firm.
- 2 - central management solves this large model and sends proposals to divisions on provisional amounts of resources allocated to each division, minimum expected profit levels, transfer prices and a suggested plan of operations.
- 3 - given these proposals, each division can reconsider its forecasts and any changes may be discussed with central management so as to formalise final divisional plans. Each division uses its own linear programme.
- 4 - finally, accounting controls such as profit contribution and rate of return targets are used as measures of divisional efficiency.

While this approach seeks to combine the allocation of corporate resources and maintain autonomous decision-making by the divisions, it is however similar to other programming approaches in stressing the necessity for central rationing of resources. This makes room for some ambiguity as to how optimisation could be achieved while giving enough autonomy to divisional management to act independently.

Burton and Obel (1980) considered the nature and influence of the information used in a simulation of decomposition. They concluded that the price-driven algorithm performed the best when there is: 1) no a priori information, 2) high initial transfer price and equal resource sharing, 3) market-based transfer price, 4) equal resource sharing and

production constraints, and 5) historical prices and budgets. A combination of price and resource approaches performed next best whereas the resource approach performed the worst. Generally the best results were obtained with more a priori information, preferably not historical.

A price-driven decomposition model was adopted by Love (1980) to determine optimal equipment transfers. This aimed at using the service facilities of companies as profit centres. However, as the model is centrally manipulated and the transfer prices imposed on the divisions, profits are thus predetermined. Divisional managers could not be held profit responsible as they are only decision executors and not makers.

### 2.3.3 GOAL PROGRAMMING MODELS OR SATISFICING APPROACHES

In the models described so far, the programming was based on an objective function, usually the maximisation of corporate profits. In the real world, however, this sole objective is not the only parameter on which success is judged. Businesses set a multitude of targets among which is the realisation of satisfactory profits or rates of return. *“These goals may be complementary, but more often than not, they are conflicting and incommensurable”* (Ringuest and Gullledge, 1983, p. 76). The shift from linear programming and decomposition algorithms to goal programming was a response to the multi-goal situation, and the emphasis became to find a satisfactory plan instead of the best (or optimum) plan.

Goal programming is a special type of linear programming whereby the manager can deal with multiple goals. These goals are competitive and of varying priorities and are satisfied in an ordinal sequence. The objectives of lower order are considered only after high priority goals have been dealt with. Therefore, *“if the manager can specify the priorities for the different goals, a goal programming technique can be used to provide the best solution under multiple goals”* (Lin, 1980, p. 377).

Goal programming was originally developed by Charnes and Cooper (1961). Refinement and extension of the technique as a tool for planning and control in multi-objective situations was made by - among others - Ijiri (1965). Carefully noting

that profit maximisation could not be the sole objective for the sake of accounting control, Ijiri formulated a linear programming model for multiple goals as a logical extension of the normal break-even analysis of profitability.

Building on Ijiri's formulations, Salkin and Kornbluth (1973) and Kornbluth (1974) presented a multiple-objective linear programme that would lead to a satisficing solution. The dual values of company resources are used as transfer prices that divisions are charged. However, the model suffers from the same drawbacks as the decomposition solutions. Optimal decisions could not be ensured on the basis of prices alone. Additional information was required. As seen earlier, a possible remedy was proposed by Charnes et al. (1967) and Kydland (1975). Moreover, Lin (1980) argues that one of the limitations of Kornbluth's approach is that it assigned a priori weights to each of the objectives instead of generating them by a weighting method or algorithm. An alternative procedure was suggested to provide an ex-post analysis. Lin's work was later extended by Kornbluth (1986) to accommodate changes of managerial preferences over the period of operations.

A further contribution has been made by Bailey and Boe (1976). Noting that competition for scarce resources and the effects of externalities were strictly intermediate conflicts that stemmed from the lack of complete information about the company's needs for the achievement of goals, Bailey and Boe (1976) proposed a behavioural interpretation of mathematical programming. Their model seeks to overcome the incompatibility of the usual mathematical programming approaches and the behavioural aspects within hierarchical organisations. They adopted Ruefli's (1971) generalised goal decomposition model which is a three-level multiple objective programming model. It treats the organisation as a variable in the decision-making process. The three levels considered are: 1) corporate management, 2) division management, and 3) operating management. The role of corporate management is to determine the goals of the organisation. Unlike other models which seek only profit maximisation, goals under this model include other variables such as resource usage, prices and levels of production. Given the goals assigned by corporate management, divisional management must determine the inputs to be used in the products or projects. Thus, the model differs from previous ones (e.g. Baumol and

Fabian (1964) and Whinston (1964) on two major points. It is a multiple goal model and is organisation dependent. Like other models, however, it is based on shadow prices or dual values of divisional goals (relative to corporate ones) and corporate management need to know little about divisional constraints.

This satisficing, decomposed multi-goal programming model also has its shortcomings. As goals are determined and resources allocated by corporate management, this might reduce divisional autonomy. Another pertinent problem is, as noted by the authors, the potential of gamesmanship. As the model relied on is a multi-goal one, conflict over goals might arise. The goals prescribed by corporate management might not suit divisions, and vice versa. For example, a division might set goals that would not be in line with corporate ones. Gaming is therefore a latent problem that could be expressed in biasing and building slack in the information communicated to corporate headquarters.

#### **2.3.4 DISCUSSION**

The programming techniques offered sophisticated ways for dealing with pricing internal transfers in multi-division, multi-product companies. Transfer prices are derived from the dual values or shadow prices of the resources used.

There are, however, limitations to the applications of these techniques. The first and most important is the loss of divisional autonomy because of central determination of inputs and outputs. The decomposition principle has been introduced as a better alternative to the simple linear programming models in ensuring more autonomy for divisions through their participation in the programme. This was sought to preserve the essence of decentralisation into profit centres. This assumed advantage has not been fulfilled. As mentioned earlier, Baumol and Fabian (1964) - the pioneers in adopting the decomposition principle - noted at least two limitations. First, the extent of decentralisation because the output decisions are made and enforced by corporate headquarters. Second, the consequent loss of motivation because of the loss of freedom of activity and decision-making. Stated otherwise, divisional managers have freedom to do whatever

they want as long as it coincides with predetermined corporate objectives. This centralisation of decentralised decision-making affects divisional profits because of the transfer prices prescribed.

Beside these shortcomings, Belkaoui (1983) has highlighted the following drawbacks. First, the method relies on the ability of programmers to interpret the inputs and represent them mathematically. Second, divisional managers may supply inaccurate data in their optimal plans to ensure maximum shares of scarce resources, particularly if they are not motivated towards achieving the optimal corporate plan. Finally, the iterative process could become complex and time consuming and, as a consequence, cease to be sufficiently practical. These problems persist even with the goal programming models suggested to encompass a multitude of goals, including the traditional maximisation of profits.

The existence of the above difficulties makes the application of the models quite a controversial issue. Solomons (1965) concluded that the use of mathematically based transfer prices did not make it possible to preserve the autonomy of divisions as profit centres and, at the same time, ensure that their operations be optimal from a corporate viewpoint. This controversy is also stressed by Godfrey (1971) who says that it is impossible to allow complete autonomy to the divisions in their decisions about using scarce resources. The conflict between the two issues requires a centralised coordinating mechanism to ensure the distribution of the resources among competing divisions. A similar comment was made by Thomas (1980) who notes that the programming approaches require explicit central office stipulation of divisional decisions once the final iterations have been completed. Such terminal interventions are inevitably destructive of divisional autonomies. Thus, none of the models provides what is mostly sought: decentralisation into meaningful autonomous profit centres. Once plan is "agreed", divisional managers are decision executors, not decision makers.

Kaplan (1977 and 1982) mentioned at least two reasons for not using mathematically derived transfer prices for decentralised decision-making. First, it is evident that profits are imputed to the scarce resources, for example, capacity constraints in the selling

division. Therefore, a division with scarce resources is rewarded whereas a division with adequate or surplus capacity is penalised. Consequently, this creates incentives for bias and building slack in the information supplied by divisional managers to top management to use as inputs in the model. As the programming approach inputs profits to the divisions with scarce resources, dysfunctional behaviour would be difficult to rule out, especially if that information is the basis for performance evaluation. In sum, even if known, shadow price-based transfer prices cannot be relied upon alone to co-ordinate divisions (Dopuch et al., 1982).

The complexity of the mathematical models made them administratively impractical. However, some writers like to suggest that this should not be an obstacle because of the development in information technology. This assertion is only half the truth because:

- 1 - the introduction of sophisticated technology means that funds are to be invested. Such investment requires that a budget is available beforehand to ensure that higher priorities and better opportunities are not foregone.
- 2 - the introduction of this technology creates the need for developing skills to use the machines efficiently. Moreover, with the speed of scientific development, today's computers are obsolete tomorrow.
- 3 - most importantly, are divisions going to have their own computer centres which will be coordinated by a main terminal from the headquarters or will there be a common laboratory for the divisions and the central office? In both cases, and particularly in the second case, will the costs be allocated to the divisions or borne by the central office?

This last question was addressed - among others - by Sollenberger (1977), Drury and Bates (1979), Weelock (1982), Wilkinson (1986), Ward and Ward (1987), and Goyal and Beiner (1988). The central computer resource is either considered as a service or profit centre. Hence our main concern of allocating resources and pricing internal transfers

arises again in a rather vicious circle. The computer resources are essential for the analysis of the mathematical programmes but before using them it is necessary to know on what basis to split the usage cost among users.

A survey by Higgins and Opdebeeck (1984) shows that of 47 respondents using micro computers in management accounting areas, only 4 (i.e. 9 %) use them for transfer pricing. This was the lowest percentage compared to a variety of other uses where budgeting scored 91% (43 respondents).

The foregoing discussion is also substantiated with data pertaining to the practicality of mathematically based transfer prices. For example, Livesey (1967) noted that they were just theoretical models found most in American literature and that there was no evidence for their practicality even in the largest British companies. According to Tang (1979) and Wu and Sharp (1979), they are almost non-existent in company practice. Most of the American and Japanese firms surveyed by Tang (1979) had no shadow price-based transfer prices. Wu and Sharp (1979) also observed that transfer prices based on mathematical programming were unpopular among the responding American firms on both the domestic and international levels. Among nine pricing bases mathematically derived transfer prices ranked last whether market prices were available or not. In the studies reported by Vancil (1978), Price Waterhouse (1984) and Eccles (1985) no such prices were mentioned in the practice of the U.S. companies surveyed. Similar results were arrived at by Mostafa (1981) in a survey of U.K. transfer pricing practice. Linear programming based prices were restricted to only a small proportion of companies with only 4.2 % and 5.5 % of all the methods used for domestic and international transfers respectively. One may conclude that because *“mathematical models are so complex and intractable...few managerial implications have been derived from them”* (Baiman, 1982, p. ). In short *“mathematical elegance has taken precedence over practical usefulness”* (Scapens, 1983, p. 8). A transfer pricing system that is not feasible and understandable cannot be applicable.

### 2.3.5 CONCLUSION

Linear programming has been applied to transfer pricing as a more sophisticated approach than the economic approach which assumed no constraints. The transfer prices derived mathematically are not independent variables because they are a by-product of optimal allocations of scarce resources, the primary concern of the mathematical programming approach. In other words, two problems have been dealt with simultaneously: 1) resource allocation and 2) transfer pricing. Most models are iterative in nature and are based on inputs from divisions. The decision-making process rests, in fact, with central management which instructs divisions on transfer pricing and prescribes the adequate quota of resources to each division. The iterative nature of the models requires high levels of co-operation between divisions and this in itself can always lead to collusion, particularly if divisional performance and reward is at stake. Thus the mathematical models overcome only the problem of constraints but still suffer from the complexity of calculation, the impairment of divisional autonomy and the lack of fairness.

It may be concluded that however attractive the mathematical programmes could be, they have so far failed to satisfy the basic requirements of decentralised profit responsibility. Despite all the attempts to incorporate decentralised decision-making into the programmes, the parties to the transfer price do not independently formulate the entire problem. In other words, there is always central intervention. Moreover the complexity of the programmes made them almost non-existent in company practice. To the contrary, the economic approach presented in the previous section seems to have more impact in the real world. Marginal cost is at least approximated by the accounting variable cost.

## 2.4 THE ACCOUNTING TREATMENT

The accounting approach draws essentially on the internal cost data, particularly in the absence of an external market for the transfer goods and services. Moreover, like the economic models, the accounting approach is based on profit maximisation and motivation of divisional managers towards goal congruence. Many programming models are also designed alongside these lines.

A variety of solutions have been proposed by both academic and practising accountants. The basic premise for these proposals is that the transfer price represents a revenue for the transferor and a cost for the transferee. In other words, the transfer price affects divisional profitability by influencing the cost function of the buying division and the revenue function of the selling division. When there is interdependence in the production functions of two or more divisions, each has contributed to, and thus should share, the revenue generated by the sale of the final product. Transfer prices are used to distribute this revenue and to reflect each responsibility centre's economic contribution.

In the introduction to the present literature review the accounting treatment of transfer pricing was traced to as far back as 1759 (Fleishman and Parker, 1990). Serious development of the problem started, however, with the creation of the divisionalised company at the beginning of this century. The transfer price based on market price was the general policy. This requires the existence of a perfectly competitive intermediate market which is not affected greatly by the company's transactions. Otherwise the market transfer pricing system would not preserve divisional autonomy or prevent dysfunctional behaviour. As the perfectly competitive market is rare in practice, the market price cannot be relied upon alone in formulating the transfer pricing policy. Hence the concern in the accounting approach is on whether to use the market price when it is available, some formula based on internal cost data, or a combination of both, possibly involving negotiated transfer prices.

The accounting literature is both analytical and empirical and can be classified according to its scope or coverage of the subject into two groups: 1) the one-formula proposals, and 2) the comprehensive studies. The first group includes all those proposals of 'cure-all' single formula prices that are frequently encountered in the literature. The second group represents all those works which examine the problem from its complex nature and usually recommend different pricing policies for different purposes and situations. Nonetheless, the main concern of both groups has always been the establishment of goal-congruent intra-company pricing, whereby divisional managers by furthering their own objectives act in the best corporate interests. The trade-off between divisional autonomy (or division incentives) and corporate optimality (or business efficiency) is one of the most critical issues of decentralised profit responsibility. Accounting information contained in budgets and performance reports plays a major role in this trade-off. It is believed (Benston, 1963) that the firm's accounting information system (AIS) facilitates the motivational advantages of decentralisation while preserving the unity of goals. The transfer pricing mechanism, as part of the AIS in a profit responsibility environment, is supposed to facilitate the optimum trade-off by the fair distribution of costs and revenues between the divisions involved in the internal trade. Before proceeding any further, it should be mentioned that there have been few instances in the literature where profit centres and transfer prices were categorically rejected.

#### **2.4.1 PROFIT CENTRES AND TRANSFER PRICES: THE RAISON-D'ETRE**

The case against has been voiced by Goetz (1967 and 1969) and reinforced by Wells (1968). Goetz argued for the use of incremental cost as the unique and most proper pricing basis that would lead to optimal decentralised decision-making and enhance goal congruence. A direct implication of Goetz's contention is that divisions can no longer be considered as profit centres but rather as cost centres. As the author noted, the incremental cost transfer price invalidates the concept of profit centres and consequently, performance cannot be measured in terms of profits. A system of budgets to control the actions of managers - already proposed by Henderson and Dearden (1966) - was thought more suitable.

This means that Goetz's proposal of incremental cost cannot be taken as a transfer price, but rather as a cost allocation method. When the transfer price is some version of cost, it is indistinguishable from a cost allocation technique. Wells (1968) stresses this point because the notion of transfer prices is a corollary of the notion of profit centres. Thus, the rejection of the latter implies also the rejection of all forms of transfer prices. Wells dismissed transfer prices and profit centres altogether and considered them rather as fictions and mystical inventions.

Goetz's and Wells' views are not shared by many. Lemke (1970) criticised both as offering false conclusions and improper generalisations from an irrelevant specific case. With regard to Goetz's claim that incremental cost is the unique transfer price, Lemke shows that this is unrealistic as the case did not provide for a full assessment of market prices. Wells' argument that a net profit basis of evaluation is a necessary condition for the existence of a profit centre is also refuted because controllable profit provides a more appropriate basis. Therefore, the relevance of market prices and the appropriateness of controllable profits disprove the claims that profit centres and transfer prices are superfluous.

McNally (1970) also defended both concepts but noted that they have often been misused. Taking profit centres and transfer prices as a panacea is a conviction not less harmful than their complete dismissal. In fact, Benke and Edwards (1980 and 1981) observed that some transfer pricing techniques like contribution margin and variable cost-plus are frequently used by American companies to create pseudo-profit centres, i.e. profit centres with artificial profits. This is usually done for motivational purposes but it leads to difficulties in evaluating performance. As the mark-ups are arbitrary, performance cannot be properly measured on the basis of artificial profits generated by the pricing method. In other words, the responsibility centres cannot be considered as profit centres and the transfer pricing bases used cannot be realistic.

An effective reply to Goetz and Wells is both empirical and theoretical. The ubiquity of profit centres, and hence transfer prices, is clear from a number of empirical surveys. Mauriel and Anthony (1966) found that 82% of 2,658 largest US firms were organised

into multiple profit centres. Similar results were found by more recent studies conducted by Reece and Cool (1978), Vancil (1978) and Dittman and Ferris (1978). Reece and Cool (1978) reported that 95.8% of the 620 responding companies had profit centres compared to 94% found by Vancil (1978). Lastly, the results from the survey by Dittman and Ferris (1978) on job satisfaction in different responsibility centres show that of the 480 respondents, 292 centres were profit centres. Moreover, it appears that profit centre managers were more satisfied with their jobs than any other type of responsibility centre managers. The transfer pricing used in such profit centres could well have contributed to this as it could add felt autonomy of divisional managers. Thus, it is certainly the case that transfer prices are well established in practice and have a clear place in the evolution of the corporate sector. Even if Goetz and Wells recognized the existence of profit centres and transfer prices and only suggested that budgets were better a tool for internal control, their theoretical objection can still be refuted as they omit the behavioural context of transfer pricing. The historical analysis of transfer pricing contained in the introduction to this chapter sheds enough light on this issue.

#### **2.4.2 COST ALLOCATION AND TRANSFER PRICING: THE NUANCE OF THE DIFFERENCE BETWEEN THE TWO**

Cost allocation is at the heart of responsibility accounting and management control. By tracing various costs to cost objectives across specified time periods, top management seeks, among other aims, to measure income and assets, allocate available resources efficiently, pinpoint managerial responsibility, monitor performance and motivate for better performance. This is particularly true for companies decentralised into profit and investment centres whereby a substantial amount of transfer of goods and services takes place between the responsibility centres. As mentioned earlier, transfer pricing involves an element of profit and therefore, if it were not for profit responsibility, it would be hard to distinguish between cost allocation and transfer pricing. Horngren and Foster (1987, p. 836) stated that *“all cost allocation is a form of transfer pricing”*. Conversely, it should be said that all transfer pricing is a form of cost allocation, especially when the profit element is removed from the transfer price. The nuance is even bigger when there

is no external market for the intermediate commodity and the transfer price is empirically unverifiable. Such intricacy makes cost allocation and transfer pricing rather “*incurable twins*” (Emmanuel and Otley, 1985, p. 193). This applies also to pseudo-profit responsibility where divisional autonomy is impeded and the results of a division are greatly affected by the operations of other divisions and uncontrollable factors. In this case even if the transfer price includes a profit mark-up, it can be considered as a cost allocation method since the profit element is arbitrary.

Under decentralisation decision-making responsibility is delegated to the manager of the semi-autonomous division who in return is held responsible for the outcomes of his performance as well as his unit’s results. In the modern corporation characterised by the separation of ownership and management, this creates an agency problem whereby the owner (or principal) hires the services of the manager (or agent) to perform tasks on his behalf. The agent is expected to act in the best interests of the principal but, as the agent is also motivated by his own interests, the principal’s welfare is not always maximised. This is particularly true when the agent is a profit or investment centre manager whose performance is evaluated and rewarded in terms of his division’s profit. This manager might indulge in all possible activities (for example over-consumption of company resources and over-pricing internal sales to other divisions) in order to achieve and report a high, or at least a satisfactory, profit figure. Cost allocation is one of the means that the principal may use to prevent such suboptimisation (Zimmerman, 1979). The same purpose is also served by transfer pricing which is a special form of cost allocation. It becomes clear that both cost allocation and transfer pricing have consequences on both divisional and corporate decisions. Therefore the question is not only on how much of central costs is to be charged to a particular unit or at what price should an internal transaction be valued but rather a question of underlying causes, reasons and consequences. This requires an organisational and behavioural examination that considers issues like the decisions delegated to the divisional manager, his goals and

preferences, and the performance evaluation system (Magee, 1986). These issues are neglected in the traditional treatment of transfer pricing by accountants as is discussed below.

### **2.4.3 THE CURE-ALL APPROACH**

A direct consequence of treating transfer pricing as a mere technical problem is the search for panacean formulae to resolve it. The accounting literature abounds with such proposals which are summarised in Tables 2.1 to 2.4 (Appendix D<sup>1</sup>). Basically there are two types of proposals: 1) single transfer prices and 2) formula pricing, and these are either cost or market-based. The most commonly advocated single prices are market price (adjusted for savings on internal trade), marginal cost, shadow price and negotiated price. The first three have already been discussed in the preceding sections. Negotiated price will be reviewed in the next chapter.

The advantages and disadvantages of single transfer prices are extremely well documented in management accounting textbooks.

To counter the fallacies of single pricing, some writers suggested formula pricing. This includes dual pricing, two-part tariff, three-part tariff, split contribution and the Shapley formula. Most of these proposals are also grouped by decade in Tables 2.1 to 2.4. The following observations can be made from these tables:

- 1 - the data contained in the tables are by no means exhaustive,
- 2 - transfer pricing is a multi-disciplinary subject,
- 3 - there is no one best pricing basis for all situations,
- 4 - marginal cost pricing, much advocated in the 1950s and 1960s, almost disappeared in the 1970s and the 1980s. Empirical data in Chapter 4 confirm this.

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<sup>1</sup> at the end of the thesis on page 333

- 5 - mathematical programming (mainly proposed by economists) was received with little enthusiasm by accountants as the latter prefer simplicity and understandability over complexity and sophistication. Evidence from data gathered from practice and presented in Chapter 4 proves this. As with marginal cost, there is a gradual loss of interest in the programming techniques in the last two decades,
- 6 - there is more emphasis on negotiation in the 1950s and the 1970s than in the other two decades,
- 7 - there is a resurgence of the two-part tariff method (i.e. formula pricing) in the 1980s probably because there is more concern about fixed costs and their impact on divisional performance.

#### **2.4.4 THE COMPREHENSIVE APPROACH**

In contrast to the cure-all approach, the general stance here which is shared by many academic accountants is that no single pricing method can satisfy all the information needs of the decentralised organisation (Bierman, 1959; Dearden, 1964; Knighton, 1965; Wojdak, 1968; Binding, 1971; Troxel, 1973; Sharav, 1974; Madison, 1979, Battacharyya et al., 1979; Benke and Edwards, 1980; Farmer and Herbert, 1982; and Smiths, 1984). This is also the attitude adopted in most management accounting textbooks such as Kaplan (1982), Belkaoui (1983), Helmkamp (1987), Horngren and Foster (1987), Horngren and Sundem (1987), Decoster et al. (1988) and Dearden (1988). The underlying logic for this belief is flexibility in order to take advantage of all possible pricing alternatives and hence avoid, or at least minimise, their disadvantages (Arvidsson, 1973). Such an approach avoids the arbitrariness of single pricing. The choice of a particular pricing basis depends on the particular uses of accounting data and the objectives they serve, the significance of the transfers, the availability of an external intermediate market and the freedom of sourcing externally.

The objectives to be served by the transfer pricing system are a direct consequence of the organisational structure and strategy of the company. As Hirshleifer (1964) put it, transfer prices had not been introduced into practical business operations as desirable innovations in their own right but they had rather been the by-product of the institution of decentralised profit centres. The following set of objectives is usually encountered in the accounting literature:

- 1) enhance divisional autonomy,
- 2) motivation of divisional managers for goal congruence (traditionally profit maximisation),
- 3) Performance evaluation and management control,
- 4) Decision-making (e.g.: make or buy, pricing of end product, level of output, and capital budgeting decisions).

The accomplishment of some or all of these objectives takes place in a complex internal and external company setting. Transfer pricing is often described as a mechanism that simulates external market conditions within companies, especially when they are vertically integrated so that all or most of the production stages are internalised. Consequently, market factors are expected to have a decisive influence on transfer prices. This is not always the case as not all transfers are significant or have external markets. In section 2.2 above, possible solutions to different market situations proposed by economists were discussed. Their conclusions (particularly Hirshleifer, 1956) were adapted by Solomons (1965) who identified five situations and recommended different pricing policies as summarised below:

**Table 2.5: Solomons' Transfer Pricing Recommendations**

SITUATION	POLICY
There is an outside competitive intermediate market and divisions have free access to it.	Outside price
There is no outside competitive intermediate market and transfers are in large or potentially large amounts.	Negotiated price, usually standard full cost plus return on capital mark-up.
There is no outside competitive intermediate market, transfers are significant but are not a predominant part of the selling division's business.	Two-part tariff price: - a charge per unit equal to marginal cost - annual lump sum for fixed costs and profit
There is no outside competitive intermediate market, transfers are a predominant part of the selling division's business, and it can meet all probable requirements.	Selling division treated as service centre. Standard variable cost. Fixed costs charged as periodic costs.
There is no outside competitive intermediate market, transfers are significant, but selling division has capacity constraints and cannot meet all requirements.	Programming methods

Thus, Solomons draws on most of the pricing methods advocated as cure-all on their own, but he suggests that in reality, each has only a zone in which it is most appropriate and outside this, it is not useful.

Similar to Solomons (1965), Benke and Edwards (1980) identified different situations and suggested a general rule for selecting the transfer price in the light of three criteria: a) performance evaluation, b) profit maximisation, and c) simplicity. The general rule is expressed as follows (Benke and Edwards, 1980, p. 77):

$$TP = SVC + LCM \quad \text{where SVC stands for the standard variable cost and LCM for lost contribution margin.}$$

Depending on the situation, the general rule would be expressed as the outside market price, adjusted market price, phantom market price, or standard variable cost. As with Solomons' recommendations, sub-optimisation is avoided by not passing the fixed costs to the buying division through the transfer price. The problem of 'upstream fixed costs' and profits (Dearden, 1988) is a serious shortcoming of full cost pricing as divisions pass on their fixed costs (and inefficiencies thereof) to the division making the final product which ends up with no apparent contribution to company profits. The final product division may even be forced to operate at a loss in order to stay competitive. Solomons' recommendations and the general rule suggested by Benke and Edwards alleviates this problem. However, unlike Solomons, Benke and Edwards made no recommendation for the use of mathematical programming. This is justified by the simplicity criterion as "*business managers do not have the time to learn complicated processes*" (Benke and Edwards, 1980, p. 75). It is also supported by the findings of the many surveys presented and discussed in Chapter 4.

#### 2.4.5 SUMMARY AND CONCLUSION

Over the last three decades both academic and practising accountants have been actively involved in research on transfer pricing. The literature is replete with profit maximising pricing methods that would preserve divisional autonomy. It is observed, however, that most of what has been published is only a duplication of Solomons' attempt to apply Hirshleifer's conclusions, as well as a continuous repetition of classical accounting textbook treatments of the problem. Companies have since gone through drastic changes through internal growth and expansion, mergers and acquisitions, technological modernisation and internal reorganisation. In companies where a great deal of manpower was replaced with automation, a variable cost transfer price would represent only a very small fraction of the supplying division's costs. If the transfer constitutes a predominant part of the division's activity it would be hard to conceive that a variable cost transfer price would be adequate. Furthermore, the accounting literature has not been very much concerned with the impact of the transfer pricing system on the reward/sanction

of responsibility centre managers, a vital issue that can either impede or enhance motivation, performance and goal congruence which are the core objectives that accountants assign to transfer pricing systems.

For such reasons one can now witness a change of approach calling for an organisational and behavioural examination of transfer pricing. Kaplan (1982) concluded that little was known about optimal transfer policies from both the economic and accounting perspectives and predicted that future editions of his text would have more to say on the subject. The latest moves in this direction are examined in the next chapter.

### **CHAPTER 3: TRANSFER PRICING IN THEORY: THE ORGANISATIONAL APPROACH**

As established in the previous chapters, this is the area where research is most lacking. The study of accounting as an organisational and social process and the application of behavioural knowledge is a relatively recent move (Caplan, 1971 and Oliver et al., 1977) and a promising area of research (Hopwood, 1977 and Chenhall et al., 1981). Oliver et al. (1977) found that the investigations in this field covered a variety of accounting aspects. They listed a sample of twelve topics; internal control, performance evaluation and transfer pricing figured large in the sample and these are, of course, basic to this study.

This organisational direction for research in accounting has attracted a number of contributions from academics including Hopwood (1983), Jensen (1983), Kaplan (1983, 1984 and 1986), Covalski and Aiken (1986), Johnson and Kaplan (1987) and Otley (1987). Of special interest are the challenges facing Management Accounting Systems (MAS) in the modern corporation. Johnson and Kaplan (1987), Burns and Kaplan (1987), Dearden (1987) and Cooper and Kaplan (1988) have questioned the relevance of existing management accounting tools for today's organisations. Their recent calls for change can be considered only as broad, seminal works that may stimulate and guide future outlines of research in accounting in the next decade or so.

For such research to be fruitful and practical, it is necessary to develop specific and detailed theoretical frameworks, testable hypotheses and obtain relevant empirical data to support or dismiss the theoretical proposals. Hypothetical and simulated cases, and inductive reasoning can all be beneficial but cannot give a true and fair picture of the realities of the modern corporation. Management control systems like the ROI and transfer pricing systems were developed not in an assumed world but as a response to the needs

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<sup>1</sup> the recent experiment by Chalos and Haka (1990) is not covered in this review.

of the multi-divisional firm in the 1920s. It is equally true that research into improving existing mechanisms or developing alternative ways must stem from the requirements of today's firms. The review and analysis of all the past empirical studies on transfer pricing presented in the next chapter reveals that almost all of these studies were limited to exposing the transfer pricing bases in use but without relating them to the context in which they were used. Thus, most of the past analytical and empirical research was just a duplication of the original thoughts laid down by Cook (1955), Dean (1955) and Hirshleifer (1956 and 1957) and the first survey of company practice conducted by The National Association of Cost Accountants in the USA in 1956. The study of transfer pricing in an organisational context has so far received scant attention.

Most of the work done to date on transfer pricing has been primarily concerned with the technical aspects of the problem. The obvious logic for this focus is that the transfer pricing technique has first to be determined before its impact is known. This is, in fact, the methodology adopted since the application of economic theory by Hirshleifer (1956). In other words, the problem has long been treated in isolation from the rest of the interacting factors which include the organisation itself, and the individuals working in and managing the organisation. Whinston (1964) concluded that economic theory had very little to offer on problems like transfer pricing and stated that:

“a mixed behavioral science, economic approach - as well as other approaches - is probably the best course to follow in any study of the kinds of organization information arrangements that could be effected for practical managerial use. But then it might be assumed that such "mixed" approaches might also yield results of further value such as 1) the limits of prices when serving as a general guide to economic development or 2) the kinds of pricing artifacts used” (Whinston, 1964, pp. 444-45).

It may be understandable that in the fifties transfer prices were dealt with in effect as independent variables when simplistic models of reality were so common. However, the subsequent development of Hirshleifer's pioneering work and the introduction of mathematical programming have testified that all the solutions put forward have serious flaws because the problem was viewed as a technical one, and the solutions were tailored

TABLE 3.1: SUMMARY OF BEHAVIOURAL RESEARCH ON TRANSFER PRICING

AUTHOR(s)	YEAR	MODEL/APPROACH ADOPTED	MODEL PRECEPTS or STUDY RESULTS	OBSERVATIONS ON MODEL OR STUDY
CYERT & MARCH	1963	Behavioural theory of the firm.	Firm is a coalition of participants with disparate aspirations/goals. Transfer prices are the outcome of long-run bargaining. Conflict only partly resolved.	Bargaining is time consuming and leads to information bias by managers. Hence performance can be misevaluated.
WATSON & BAUMLER	1975	Lawrence & Lorsch's (1967) differentiation and integration framework.	Varying degrees of differentiation for varying degrees of uncertainty and conflict is resolved through confrontation. Hence negotiated transfer prices as integrator.	Potential of gaming by divisional managers. Model does not address evaluation and reward of performance.
GRANICK	1975	Comparative study of impact of national and societal differences on transfer pricing practices.	The transfer pricing system should not be viewed only as a technique for transmitting information but also in terms of its incentive and organisational effects.	Analysis based on dated material and therefore the results should not be taken for granted.
BAILEY & BOE	1976	Goal programming satisficing model.	Using mathematical programming to derive transfer prices without constraining divisional autonomy.	Potential of gaming and decisions may be centralised.
EARNEST	1979	House's (1971) model of expectancy theory (or work motivation).	Higher levels of work motivation associated with transfers based on market prices.	Analysis based on trivial hypothetical case.
LAMBERT	1979	Empirical study of the relationship between transfer prices and internal conflict.	Same level of conflict with either market price or full cost price. Higher level of conflict with negotiated price than market price.	Analysis based entirely on corporate perceptions of conflict.
ACKELSBURG & YUKL	1979	Business game using undergraduate students as subjects.	Negotiated transfer prices can have integrative properties.	Subjects of analysis were not acting in the real world.
SWIBRINGA & WATERHOUSE	1982	Cyert & March's (1963) behavioural theory Cohen et al. (1972) Garbage can model Weick's (1969 & 1979) organizing model Williamson's (1975) markets & hierarchies	Focus on the factors that determine an outcome. Thus the process of devising transfer pricing rules, procedures and prices is as important as the rules, procedures and prices themselves for obtaining some organisational control.	Analysis based on the Birch Paper Company case study designed in 1957 for class discussions at Harvard University. Field work in large firms is required for testing the validity of results.
ECCLES	1983	Inductive judgements or normative framework	Transfer pricing policies depend on two dimensions of strategy: the level of diversification and the degree of vertical integration.	Quick dismissal of the existing economic and accounting literature on transfer pricing.
SPICER	1988	Organisational theory	Combination of Watson & Baumler's approach and Williamson's (1975) markets and hierarchies framework.	Most comprehensive theory to date. Needs empirical testing

to suit the single objective of profit maximisation. The bulk of the academic examination of transfer pricing went in this direction. A natural consequence is that only a limited research on the behavioural aspects of the problem emerged. Only fairly recently has this situation began to change and the organisational dimension draw some attention.

Table 3.1 provides the focus for the following detailed examination of the key contributors to the development of a behavioural approach to transfer pricing.

### **3.1: CYERT and MARCH's BEHAVIOURAL THEORY OF THE FIRM**

Cyert and March's (1963) classic organisation study which detailed a "*behavioural theory of the firm*" had something to say directly on transfer pricing as well as constructing a broad approach of considerable importance. Basic to the latter is the rejection of the traditional concept of a single organisational goal, namely profit maximisation. They instead view the organisation as a coalition of participants with disparate demands, changing focuses of attention and limited ability to attend to its problems simultaneously. The coalition's goals include production, inventory, sales, market share and profit. These goals are predetermined by a bargaining process but this leads only to partial resolution of conflict within the organisation. Consequently, economists' schemes (e.g. Hirshleifer, 1956 and Arrow, 1959) of transfer pricing and resource allocations are rejected because, for a coalition or participants in which conflict is partially resolved, "*the concepts of efficiency and fairness have limited ability*" (Cyert and March, 1963, p. 276). Moreover, Cyert and March observed that divisional performance is determined partly by the return from the external environment and partly by the transfer pricing rules they can arrange by bargaining. Therefore, transfer prices are the outcome of a long-run bargaining process rather than from a technical problem-solving solution; this is particularly so when transactions with the external environment are not viable. In addition to that the units (or divisions) that have been unsuccessful would be more active in seeking new transfer price rules than the successful ones.

Cyert and March concluded that in general, “*transfer payments are made on the basis of a few simple rules that 1) have some crude face validity, and 2) have shown some historic viability. “We should find that they are the focus of conflict among subunits in the same way as other allocative devices”* (Cyert and March, 1963, p. 276).

It is worth remembering at this point that the case for bargaining or negotiating was originally advocated by Cook (1955), Stone (1956) and Dean (1955). Cook suggested the use of 1) negotiation to adjust the market price for internal trade, or 2) free negotiation in the absence of an external market. Nonetheless, Cook recognised two disadvantages of negotiated prices: 1) the amount of executive time it is likely to take, and 2) the distortion of profit centres financial reports. Moreover, because of probable inability to agree on a price, this may result in turning to top management to resolve the differences of opinion or in setting the price. This may end up in removing the profit responsibility from the buyer and seller and placing it with the chief executive (Keller, 1957, and Rook, 1971).

Stone (1956) recommended bargained pricing in the absence of an adequate standard cost method. A list price (based upon cost or market) was needed to counter endless and tedious negotiations.

Dean (1955) pressed for the use of negotiated competitive prices but, as noted by Watson and Baumler (1975) and Thomas (1980), Dean’s proposal implies an internal simulation of an already existing outside market for the transfer commodities.

The second disadvantage noted by Cook is stressed by many antagonists of the negotiation approach. For instance, Dopuch and Drake (1964), Abdel-khalik and Lusk (1974), Hilton (1980) and Ferguson (1981) argued that with regard to performance evaluation, negotiated prices might lead central management to evaluate the managers’ ability to negotiate rather than their performance itself.

Nevertheless, some writers find negotiation as the most defensible basis for determining transfer prices (Fremgen, 1970; and Shaub, 1978) or very promising for behavioural research on transfer pricing (Watson and Baumler, 1975; and Grabski, 1985).

### 3.2: WATSON AND BAUMLER'S BEHAVIOURAL APPROACH.

Watson and Baumler (1975), who argued in favour of negotiated prices despite the often mentioned dysfunctionality, attempted an examination of transfer pricing in a behavioural setting in terms of Lawrence and Lorsch's (1967) differentiation and integration framework. The latter pointed out that organisations require varying degrees of differentiation in order to cope with varying degrees of uncertainty. Thus, the most successful firms are those which achieve the required differentiation and integration of their diverse units. As decentralisation and differentiation are viewed as a response to environmental and technological uncertainty, Lawrence and Lorsch also argued that in uncertain environments, the most successful firms in resolving inter-departmental conflict were the ones which used confrontation or, in other words, negotiation. Basing their analysis on this premise, Watson and Baumler asserted that if the appropriate conflict resolution process was negotiation, then negotiated transfer prices would be the best to enhance differentiation and facilitate integration. The authors arrived at this conclusion after critically appraising some pricing methods as integrative mechanisms. They noted, for example, that the final phase in mathematical programming solutions is usually centrally dictated. This implies the sacrifice of decentralisation, a common criticism shared by many as already detailed in previous sections. These approaches also represent the simplest integrating device of rules where *“the environments are stable and the interdependencies are of the simplest kinds”* (Watson and Baumler, 1975, p. 470).

Given that the operating environment of multi-division companies is substantially complex, i.e. such organisations are strongly differentiated and organisational units highly interdependent, the recognition of this complexity is fundamental to the discussion of transfer pricing. Otherwise, *“an algorithmic approach that does not take into consideration these behavioural issues was doomed to provide little insight into the transfer pricing problem”* (Bailey and Boe, 1976, p. 562). In other words, transfer pricing should be considered as an aspect of a multidimensional conflict resolution process.

Watson and Baumler's analysis has at least two shortcomings. First, it focuses on transfer pricing as an integrator but neglects the potential for gaming that managers may indulge in through negotiation and data manipulation. Therefore, it is unlikely that the agreement between negotiators is secured without some central direction (Dearden, 1964). Secondly, it fails to address the evaluation/reward process, i.e. how to evaluate and compensate divisional efforts. This is a crucial issue because, as mentioned earlier, one of the dangers of negotiation is that it may lead to evaluating the managers' ability to bargain rather than their performance itself. Some explanation to these points could be found in the study reported by Granick (1975).

### **3.3: GRANICK'S COMPARATIVE STUDY.**

The author conducted a comparative survey of transfer pricing practice in the U.K., France and the U.S.A. through in-depth interviews of different level managers in major corporations. The study examined the differences of practice in terms of organisational and managerial career patterns. It was found that in Britain, the education background did not serve for the selection or promotion of managers. Promotion depended on job performance and thus managers moved upward through a simple narrow job function. Hence, performance evaluation was greatly influenced by the transfer pricing system. In contrast, education was the principal criterion for determining promotion within managerial ranks in French companies. Although the analysis was based on data from the 1960s, Granick highlighted the importance of the organisational and environmental factors. He concluded that *“a system of transfer pricing should not be judged simply as a technique for transmitting information within the company, but also in terms of its incentive and organizational effects. These effects must differ depending upon the total pattern of managerial expectations and behaviour in large firms of the country concerned”* (Granick, 1975, pp. 39-40). These careful observations have in fact been the focus of subsequent analytical and empirical studies as reviewed below.

### **3.4: BAILEY AND BOE'S BEHAVIOURAL MODEL**

Bailey and Boe (1976) relied mostly on Watson and Baumler's (1975) work to elaborate a behavioural interpretation of a goal programming model of resource allocation and transfer pricing. They observed that Watson and Baumler matched the following conflict issues: 1) degree of homogeneity of attitudes and behaviour, 2) stability of the environment, and 3) types of super and sub-unit interdependence, with Thompson's (1967) three types of interdependence: 1) pooled, 2) sequential, and 3) reciprocal.

The recognition of different degrees and types of interdependence is essential in studying transfer pricing within its organisational context. This will lead to bridging the gap between the normative approaches designed so far and the organisational settings where they are applied. Fortunately, it seems that recent endeavours are pointing to the importance of the organisational approach. Interesting experiments were conducted by Ackelesberg and Yukl (1979), Lambert (1979) and Eccles (1983 and 1985).

### **3.5.: EARNEST'S HYPOTHETICAL CASE**

A possible relationship between work motivation and transfer pricing was drawn by Earnest (1979). A model of expectancy theory developed by House (1971) was used to analyse three pricing methods: incremental cost, opportunity cost and market price. Market-price transfer prices were found to result in a relatively higher level of work motivation for profit centre managers. This conclusion is unfortunately not flawless.

The analysis is based on a trivial hypothetical case which the author admits is oversimplified. Thus the deductions made do not derive from observations of reliable data. Moreover, divisional performance is judged on absolute profits, a yardstick largely disqualified either for evaluating performance or motivating managers, particularly when divisions are charged with uncontrollable costs (Solomons, 1965). A further flaw is the author's assumption that all internal demand should first be met internally. This impedes divisional autonomy and forcibly disregards the incremental cost and opportunity cost pricing methods. If a market exists for a transfer commodity but divisions are not free to sell and buy outside the company, it is hard to perceive full motivational impact for the

market price. As Horngren (1967, p. 5) puts it: *“when substantial freedom of choice is not available, the resultant transfer prices are artificial to a point which severely contaminated the rate of return and similar measures of profit performance”*. Nevertheless, the restrictions on external sourcing leave some room for justification of the market price. The position of the company in the market, the nature of the product, the product life cycle, technological sensitivity, the need to force divisions to compete with the external market, and the desire to provide maximum fairness to the transfer parties and reduce conflict may all justify a market-based (negotiated or mandated) transfer price.

### **3.6: LAMBERT’S SURVEY**

Earnest’s conclusion is in apparent contradiction with the results of a survey of financial officers undertaken by Lambert (1979). Conflict was investigated in relation to three transfer pricing methods: cost-based, market-price and negotiated. Lambert found that 1) there was a similar amount of conflict with either a market price or full cost transfer price, 2) there was a higher level of perceived conflict with negotiated transfer prices than with a cost or market price-based transfer price, and 3) conflict was higher when the buying division was not permitted to purchase from outside suppliers items available internally. In addition to that, the reported level of inter-divisional conflict increased if the transfer pricing system affected the buying division’s profits. This implied that the evaluation process was based on divisional profits.

The behavioural interpretation of these results should, however, be made with some caution. As the survey addressed corporate controllers, perceptions of conflict were thus requested from a party not directly involved in it. Therefore the data collected are not representative of the real concerned party, the managers of the responsibility centres.

### **3.7: ACKELSBERG AND YUKL's EXPERIMENT**

Similar results to Lambert's were also arrived at by Ackelesberg and Yukl (1979) who conducted an experiment on conflict and negotiated transfer prices, using nearly two hundred students.

The authors found that negotiation resulted in more integrative and problem solving and less competitive and aggressive behaviour when performance is evaluated on corporate rather than divisional profits. However, when the evaluation process was based on divisional profits, more competitive behaviour occurred. The results were amplified when the transferred product was important. When the product was unimportant i.e., was not an important source of profits for the divisions, the basis of evaluation had no effect on competitive behaviour. The importance of the product also had little effect on cooperation when corporate profits were emphasized.

Ackelesberg and Yukl's experiment is another example where a hypothetical case was used to deduce conclusions. Since the analysis is based on a business game involving students as subjects, the results have great external validity limitations and, hence, they may be just fictitious. The cooperative and friendly relationships noticed in the negotiation process had obviously to be expected from students enrolled on the same course. It is quite possible that they compromised or arrived at a consensus just because of their friendship or as a result of face-to-face bargaining. This may have been reinforced by the feeling that they were only acting in an assumed world. Therefore, whatever the performance of these undergraduate students in the conduct of the experiment, it is hard to generalise the findings to the complexities of the real world.

### **3.8: SWIERINGA AND WATERHOUSE's FOUR MODELS**

Cyert and March's (1963) behavioural model was recently used alongside three other models by Swieringa and Waterhouse (1982) in an organisational behaviour approach to the transfer pricing problem. Similar to Watson and Baumler, Swieringa and Waterhouse noted that the analytical approaches usually encountered in the literature - like in Abdelkhalik and Lusk's (1974) synthesis - have all been designed as

problem-solving procedures which presume “*the existence of a well-defined pre-existent organisational objective, the drive for behavioral and attitudinal consistency, and the dominance of economic rationality in organizational decision-making*” (p. 150).

The three other models used beside Cyert and March’s are: 1) the garbage can model, 2) the organising model, and 3) the markets and hierarchies model.

The garbage can model presented by Cohen et al. (1972) and Cohen and March (1974), views organisations as vehicles for solving problems and structures for resolving conflict through bargaining, as well as collections of choices.

The organising model suggested by Weick (1969 and 1979) comprises three processes denoted 1) enactment processes, 2) selection processes, and 3) retention processes. These are directed at information processing and the removal of uncertainty from information inputs.

The markets and hierarchies framework proposed by Williamson (1975) considers transactions and contracts as the basis of all economic exchange. It views markets as ‘organisations’ in which exchange is achieved by contract, and hierarchies as organisations which economise on transaction costs by replacing a series of contracts with a single employment contract and common resource ownership. The applicability of this model to management accounting was also assessed by Johnson (1983) and Flamholtz (1983).

These four models of organisation were used to present different interpretations of the classic Birch Paper Company case. This was a step forward to place the transfer pricing problem in an organisational context. Each model was used as a conceptual lens to interpret a series of hypothetical events in the case.

Swieringa and Waterhouse observed that these alternative lenses presented different perspectives from the traditional view in where there are pre-existent purposes, rationality and consistency. Stated otherwise, the traditional view seeks to determine what goal (or goals) explain the choice of a particular action. Hence this approach focused on finding

the appropriate transfer pricing system that would lead divisional managers to make firm-optimal decisions, usually the maximisation of profits. The models or lenses described above focused on the factors that determine the outcome and, thus, transfer pricing was viewed in a much broader context.

The behavioural model reflected the situation described in the Birch Paper Company case as an episode in a long-term bargaining process between divisional managers.

The Garbage Can model analysed the situation as a choice opportunity that *“provides an occasion for executing standard operating procedures, for defining what the organization is all about, for distributing glory or blame for what has happened in the organization, for expressing and discovering self-interest, for having a good time and so forth”* (p. 154).

With the organising model, *“the ultimate choice of a transfer price rule may be seen as a means for legitimating past action”* (p. 155).

Finally, the markets and hierarchies model suggested that *“the decision about whether to purchase the order outside or inside the hierarchy should involve a consideration of whether the contract terms are likely to require revision. If contract revision is expected, outside contracting will become less attractive”* (p. 157).

It results from this presentation that the models offer different and rather paradoxical conceptions. Swieringa and Waterhouse contrasted the four perspectives in terms of goals versus determinants, process versus outputs, adaptability versus stability, and simplicity versus complexity. They concluded that the models shared an orientation towards outcomes and their determinants, which means that they were complementary and hence a combination was possible. With regard to the process of devising transfer pricing rules, procedures and prices, the results emphasised that the process was as important as the rules, procedures and prices themselves for structuring and controlling. Moreover, each model stressed the importance of learning, adaptability and flexibility as well as stability. Transfer pricing rules enhance stability as they guide resource allocations and performance evaluation and rewards. On the other hand, the balance between learning,

adaptability and stability is determined by environmental pressures to which the organisation needs to respond. For this it was suggested that “*transfer pricing rules should incorporate specific last date of use routines, that multiple reporting dimensions be adopted to encourage organizational learning and adaptation*” (Swieringa and Waterhouse, 1982, p. 16).

By and large, the important implication of these four models is that transfer pricing cannot be treated in isolation from the organisational context. As different explanations were given to the hypothetical events, it occurred that it was necessary to pay attention to the organisational settings, the determination process, the implementation process and the evaluation process.

These interesting findings were unfortunately based on an assumed case designed for classroom discussions. Beside that, no specific transfer pricing method - apart from negotiated prices under the behavioural model - was examined in the light of the points raised and the suggestions made. These shortcomings seem to have been overcome by Eccles (1983 and 1985).

### **3.9: ECCLES' NORMATIVE FRAMEWORK.**

Eccles (1983 and 1985) reported on a survey conducted in 13 American companies operating in three different industries: chemicals, electronics and heavy machinery. The aim of the study was to find out how transfer pricing was managed in practice and to develop a theory supported by empirical evidence. An in-depth clinical approach was adopted involving extensive interviews with 144 managers.

Similar to Swieringa and Waterhouse (1982), Eccles insisted that transfer pricing must be studied in an organisational context. The cause-effect relationship between transfer pricing practices and other company characteristics is reproduced in Figure 3.1.

Four transfer pricing policies were identified: 1) exchange autonomy, 2) mandated full cost transfers, 3) mandated market-based transfers, and 4) dual-pricing. No mention

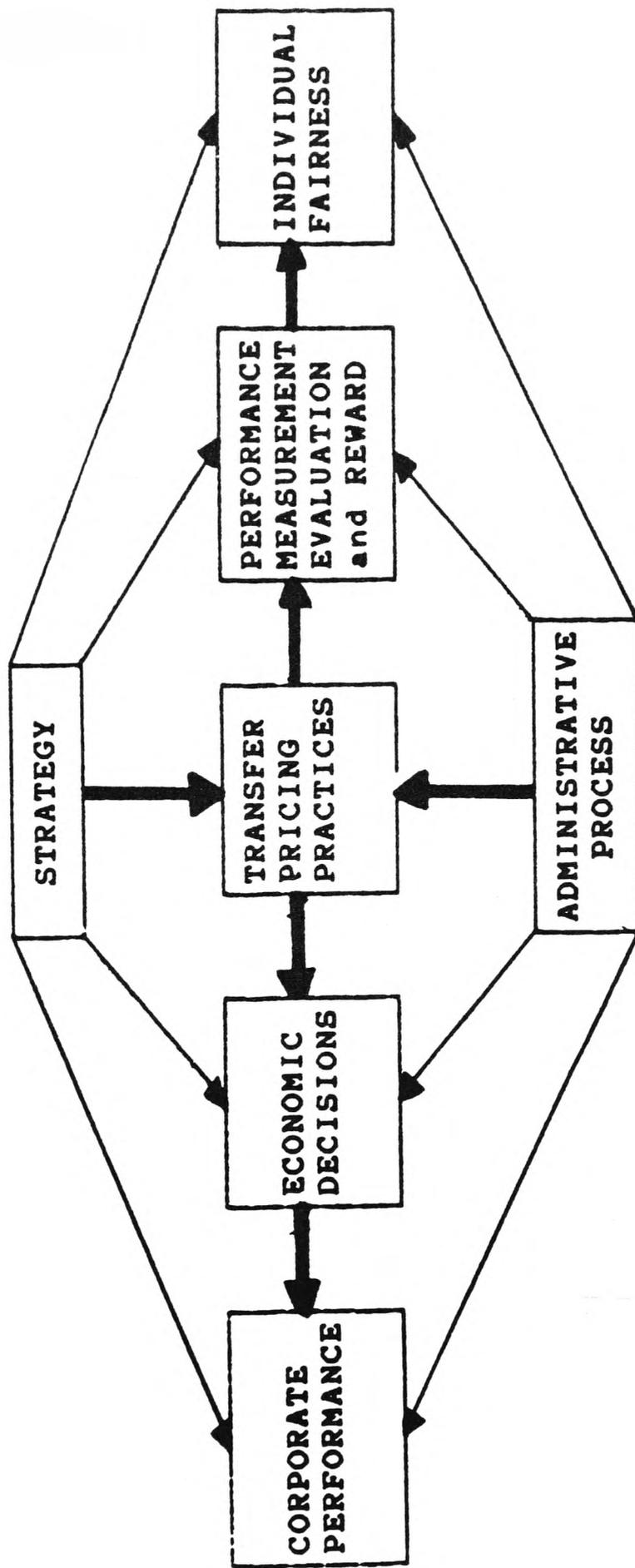


Fig. 3.1: Causes and effects of transfer pricing.  
(Eccles, 1985, p. 7).

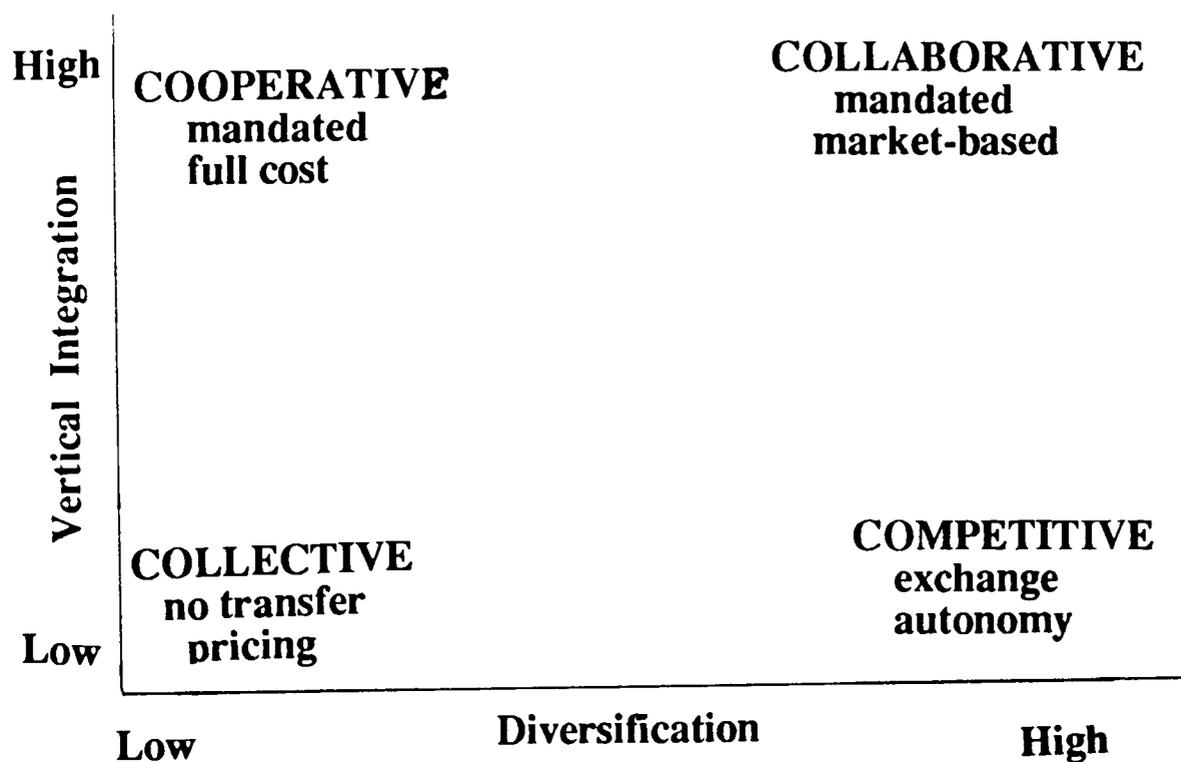
was made of marginal cost or mathematically derived transfer prices. The four policies were related to four types of organisation: a) competitive, b) cooperative, 3) collaborative and 4) collective.

Eccles developed a descriptive theory to determine which transfer price should be used in practice. The theory revolves around a two-dimensional strategy framework called the Manager's Analytical Plan (MAP). The two dimensions of strategy on which transfer pricing policies are dependent are: vertical integration (the degree of interdependence between profit centres), and diversification (the extent of product market segmentation). In Figure 3.2 Vertical integration is represented on the MAP by the Y axis, whereas the X axis represents diversification. In addition to that the following causal relationship was drawn between five organisational characteristics and transfer pricing:

The degree of integration and diversification differs from one type of organisation to another. There is low integration and low diversification in collective organisations as these consist of small and new firms with few functions and products and no formal management. However, when these one-man organisations expand and evolve from informal to more formal structures, they grow into cooperative organisations with high level of vertical integration and low diversification (with only a narrow line of products). All managers cooperate towards maximising company objectives defined by a global strategy. In contrast to this, there is the competitive organisation with high degree of diversification and low integration and where the firm's strategy is largely made up of the sub-units strategies. Lastly, a collaborative organisation is high on vertical integration (i.e. similar to the cooperative organisation). The matching of pricing policies to organisational types varied according to the degree of integration and diversification. Depending on the position of the company on the MAP, an appropriate transfer pricing policy that would suit the company's needs is proposed.

Transfer pricing is precluded in the collective organisation as this is characterised by low integration and diversification. Hence the analysis of the problem is reduced to the remaining three types of organisation. As mentioned previously, four transfer pricing policies were identified. Exchange autonomy applies to situations of no strategy of vertical

integration whereby divisional strategies are independent of each other and inter-unit transactions are not mandated. When there is vertical integration to link business units, internal trade is mandated and so are transfer prices. Mandated full cost transfers and mandated market-based transfer are more appropriate in such a situation. Dual-pricing is a hybrid policy which involves two prices: one price (full cost) to the buying division and another (market price) to the selling division.



**Figure 3.2: Transfer pricing in the MAP**  
(Eccles, 1985, p. 279)

Exchange autonomy was found in the competitive organisation as profit centre managers had substantial freedom and were dealing as if in a market place. Thus market-based pricing was the common policy. However, if the particular company intended to increase interdependence between divisions and consequently seek more vertical integration then a policy of dual-pricing was appropriate. Yet such an approach would be used only on a short-time basis due to its shortcomings.

Mandated transfers were found suitable for the cooperative and collaborative organisations because of the high degree of vertical integration. However, there is low

diversification in the cooperative organisation and supplying divisions serve as manufacturing units. On the other hand, the high diversification in the collaborative organisation implies that each division is regarded as an independent business. Hence the need for different bases of pricing transfers. Full cost transfer prices applied to the cooperative type whereas market-based transfers were practised in the collaborative organisation. Mandated full cost transfers included actual full cost, standard full cost and cost plus return on investment. One can deduce now that transfer pricing becomes a serious problem when there is more interdependence between business units and consequently more need for vertical integration. When this is coupled with a strategy of diversification, the problem becomes more complex as in the case of the collaborative organisation. More conflict is resented and thus the choice of the transfer pricing policy is delicate. In summary, Eccles argued that transfer pricing depends on strategy, and contended that *“without a policy of mandated transactions, it is difficult, if not impossible, to implement a strategy of vertical integration”* (Eccles, 1985, p. 9).

Eccles proposed a set of 38 testable hypotheses and proceeded to test them using data from a study by Vancil (1978). The results supported the theoretical framework put forward. Hoshower and Mandel (1986) have partly tested the validity of the framework for diversified American multinationals. The results of their small study also showed consistency with Eccles' proposals.

Eccles' contribution lies only in being the first study on the organisational aspects of transfer pricing based on inductive judgements. As one peruses through the voluminous literature, it becomes clear that the two dimensional strategy framework is not a new idea. The hypothesis that organisation structure follows strategy has been discussed by Chandler (1962). Naturally, it follows that the design of management planning and control systems - including transfer pricing - *“has to take into account the specific context and characteristics of each organisation's structure and operations”*. Moreover, *“the design of a transfer pricing system is as important to an organisation as are the decisions to*

*establish a divisionalised structure and to evaluate the performance of each division on profits”* (Battacharrya et al. 1979, p. 252). In other words, *“the role of transfer pricing depends largely on the organisational structure”* (Stone, 1959, p. 631).

Furthermore, Eccles was quick in dismissing much of the existing accounting and economic literature on transfer pricing. This makes his proposed theory rather less inter-disciplinary than the study of the problem requires. Nonetheless, Eccles’ work has at least set forth some guide-lines for future research. A more elaborate framework has been developed by Spicer (1988).

### **3.10.: SPICER’S ORGANISATIONAL MODEL**

Spicer (1988) draws on the works of Watson and Baumler (1975), Swieringa and Waterhouse (1982), Eccles (1985) and on the growing literature on the economics of internal organisation (particularly the works of Oliver Williamson) and suggests an organisational theory for the study of transfer pricing which is schematically represented in Figure 3.3. Basically the theory combines and elaborates the Watson and Baumler’s approach and the markets and hierarchies framework or Organisational Failures Framework (OFF) developed by Williamson (1975). A set of nine hypotheses is then suggested.

**Hypothesis 1:** *The dimensions of intra-firm transfers of intermediate product are jointly related to a firm’s diversification strategy, its product design and its organisational structure.*

**Hypothesis 2:** *The greater: (a) the degree of transaction-specific investment, (b) the frequency and volume, and (c) the degree of uncertainty and/or complexity associated with intra-firm transactions, the stronger will be the firm’s interests in centrally controlling the make-or- buy decision.*

**Hypothesis 3:** *The greater: (a) the degree of transaction-specific investment, (b) the frequency and volume, and (c) the degree of uncertainty and/or complexity associated with intra-firm transactions, the more likely it is that the firm will have well specified arbitration procedures to safeguard the firm’s interest in the make-or-buy decision.*

**Hypothesis 4:** *The greater: (a) the degree of transaction-specific investment, (b) the frequency and volume, and (c) the degree of uncertainty and/or complexity associated with intra-firm transactions, the more likely it is that the firm will de-emphasize performance measurement and incentive mechanisms that focus entirely on divisional profitability, in favour of broader measures and incentives that recognise the need for cooperation and adaptation.*

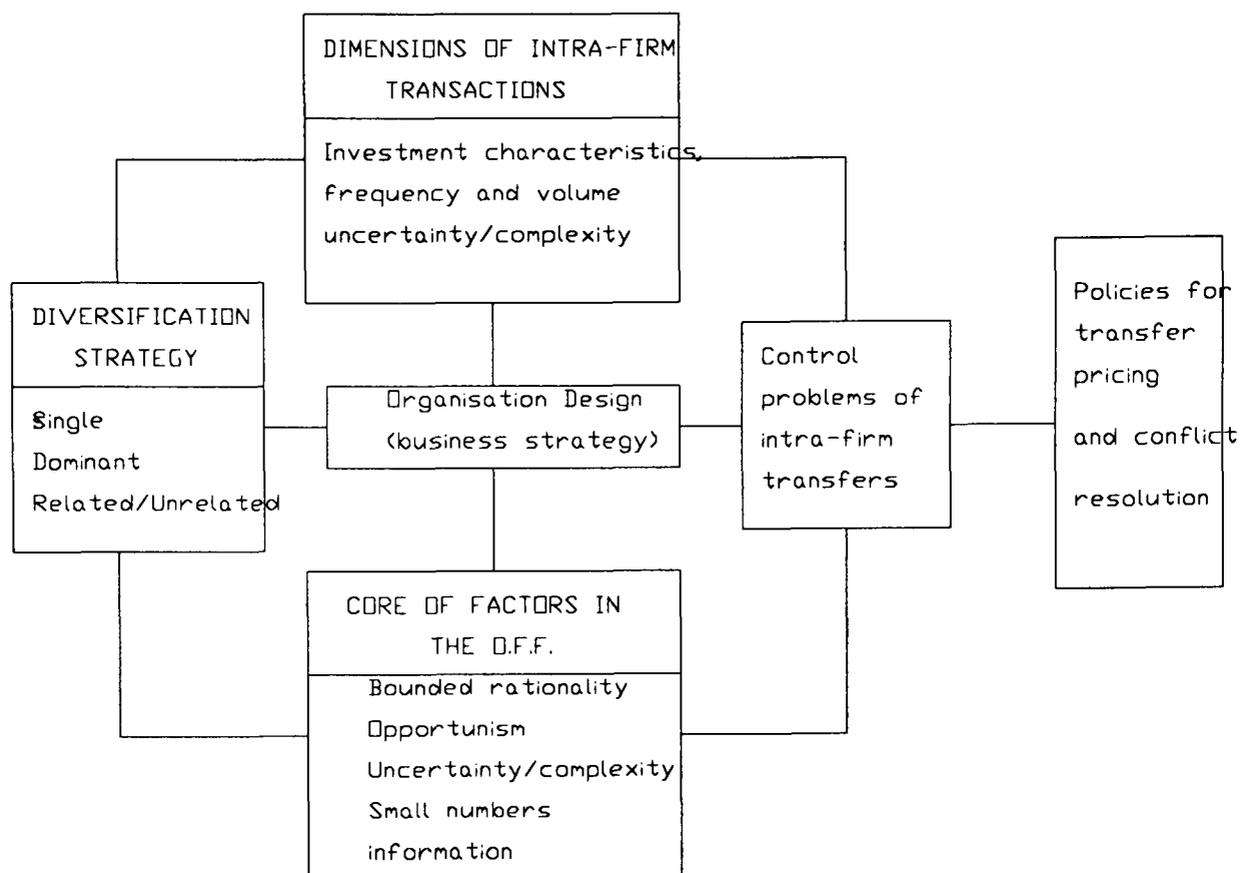


FIG. 3.3: Major factors affecting control of intra-firm transfers (Spicer, 1988, p.309).

**Hypothesis 5a:** *The greater: (a) the degree of transaction-specific investment, (b) the frequency and volume, and/or complexity associated with intrafirm transactions, the more likely is conflict between divisional managers involved in internal transfers of intermediate products.*

**Hypothesis 5b:** *Conflict between divisions involved in intra-firm transfers of intermediate product is more likely for ex-post proposals for transfer price adjustments than it is for ex- post proposals for quantity adjustments.*

**Hypothesis 6a:** *Where standardized intermediate products are the subject of the transfer, or the transfer involves products for which the degree of customization*

*is minor, market prices will be the primary basis for setting internal transfer prices and for profit center managers choosing between internal and external suppliers and customers.*

**Hypothesis 6b:** *Where the internally transferred intermediate product involves a moderate degree of customization and a material transaction-specific investment, internal manufacturing costs will play a greater role in the initial negotiations to set transfer prices and in ex-post proposals to adjust them.*

**Hypothesis 6c:** *Where the internally transferred intermediate product is idiosyncratic, and involves a large investment in transaction-specific human and/or physical capital, internal manufacturing costs will be the primary basis for setting transfer prices; and there will be strong central control over the make-or-buy decision.*

These proposals bear a lot of similarity to those suggested earlier in the current study. The first hypothesis relates internal trading to the firm's diversification strategy and organisation structure; hypothesis 2 defines the locus of decision-making responsibility; hypotheses 3, 5 and 6 relate to the conflict over transfer pricing and the need for central intervention to settle the differences for the best interests of the firm; hypothesis 4 relates to the crucial issue of performance evaluation and reward; and finally the last three hypotheses propose a set of rules for transfer price determination.

What is needed now is the appropriate field investigation of these proposals. It seems, however, that it is unlikely that one set of data will be sufficient enough to cover all the specific requirements set forth by all hypotheses. For Spicer suggests that: *“the investigation should start by looking at how the firm's various strategies affect the dimensions of transfers between specific buying and selling centers throughout the organization, and then, having done this, investigate how control problems and transfer prices differ among them. On a priori ground it seems useful to distinguish between these two parts of the investigation because, in large companies, different strategies may apply to different parts of the firm”* (Spicer, 1988, pp. 320-21).

### 3.11 CONCLUSION

Research into the behavioural and organisational context of accounting is only at its infancy. Of particular interest is challenging the common notion that transfer pricing should be treated as a technical problem. Many a formula has been advocated as the best by either economists or accountants including the application of mathematical programming technics without however paying attention to the organisational and behavioural settings of the problem. Recently there have been few attempts in this direction but apart from Eccles (1983 and 1985) who developed a theory from observations of company practice, all the works reviewed in this chapter are pure theoretical propositions or based on assumed and simulated cases. The contents of these works have now been updated and elaborated by Spicer (1988) in the light of the economics of internal organisation in yet another theoretical framework for the organisational study of transfer pricing. This latest framework is in line with the outline adopted for the present study, the results of which will be used to test the validity of Eccles' and Spicer's propositions.

## **CHAPTER 4: TRANSFER PRICING IN PRACTICE: COMPARATIVE ANALYSIS OF EMPIRICAL STUDIES ON TRANSFER PRICING AND RELATED TOPICS IN TEN COUNTRIES.**

The present chapter extends the foregoing literature review with a description of a series of empirical studies on transfer pricing practice in ten countries. The aim of this description is to substantiate, with evidence from practice, the arguments advanced in Chapter 1 on the need for an organisational and behavioural treatment of the transfer pricing problem. This chapter also illustrates the gap between accounting theory and practice and shows that accounting practice is marked by great diversity.

The first study was undertaken in the U.S.A. by the National Association of Accountants (NAA) in 1956. Table 4.1 in Appendix E<sup>1</sup> summarises all the empirical studies published to date in English. Copies of three studies by Drumm (1972), Whiting and Gee (1984) and Price Waterhouse (1984) were obtained through personal contact with the authors. Three unpublished doctoral dissertations by Bisat (1967), Okpechi (1976) and Petty (1977) are not covered by the present review.

It can be clearly seen from Table 4.2 (Appendix E) that most of the studies were carried out in the U.S.A. and the U.K. It is only in the 1970s and 1980s that the subject has received some attention in the rest of the world, particularly capitalist countries where decentralisation is based on profit responsibility. Except for a theoretical proposal by Gordon (1970), some observations made by Horwitz (1970) about the Soviet enterprise and Sacks (1983) about the Yugoslav large company, no detailed study of transfer pricing in non-capitalist countries could be found.

Nine of the studies reviewed below are published parts of doctoral dissertations (Table 4.3). On the other hand, the majority of the important surveys were sponsored by specialised institutions: (NAA, FERF, BIC, NICB, Price Waterhouse in the U.S.A.) and (BIM, MBS, ICMA, ICAEW in the U.K.).

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<sup>1</sup> at the end of the thesis on page 337

Most of the questionnaire samples were drawn from extensively used sources such as Fortune 500 in the USA and the Times 1000 in the U.K. This may partly explain the low response rates scored by many surveys. It is also observed that the more complicated and sensitive the questionnaire, the lower the response rate. This is the case of Mautz (1968), Emmanuel (1977), Yunker (1982), Mostafa (1982) and Whiting and Gee (1984).

**TABLE 4.3: PhD-BASED RESEARCH**

AUTHOR	YEAR OF COMPLETION	UNIVERSITY	COUNTRY
WHINSTON	1962	C.I.T. PITTSBURGH	U.S.A.
SHULMAN	1966	HARVARD	U.S.A.
ARVIDSSON	1971	STOCKHOLM SCHOOL OF ECONOMICS	SWEDEN
CHANNON	1972	HARVARD	U.S.A.
EMMANUEL	1976	LANCASTER	U.K.
MILBURN	1977	ILLINOIS	U.S.A.
TANG	1977	NEBRASKA	U.S.A.
YUNKER	1981	ST. LOUIS	U.S.A.
MOSTAFA	1981	BRADFORD	U.K.

Moreover, the figures indicate more participation from American companies than from their British counterparts. The reluctance of the latter to disclose information on their transfer pricing policies has grown over time whereas the American surveys have most often secured relatively high response rates. Such chronological comparison is not viable for the rest of the countries considered due to the scarcity of published empirical research.

The present comparative study examines a total of 47 surveys on transfer pricing and related subjects. Twenty eight of them dealt with domestic transfer pricing practices; twelve examined the multinational aspects of the problem; and seven looked at both dimensions.

Tables 4.4 to 4.7 depict the details of questionnaire samples and response rates by country, year and author. Tables 4.8 to 4.11 summarise the pricing policies of respondents. Two graphs are also included in Appendix F<sup>2</sup>, They represent the progress of empirical research and the distribution of this research by year and decade since 1956.

**TABLE 4.4 AMERICAN QUESTIONNAIRE-BASED SURVEYS**

YEAR	AUTHOR OR SPONSOR	TOTAL SAMPLE	RESPONDENTS			
			TOTAL	%	USABLE	%
1967	NICB	NG *	NG	NG	190	NG
1968	MAUTZ	2700	412	15.25	412	15.25
1970	GREENE and DUERR	NG	NG	NG	130	NG
1971	BURSK ET AL.	98	41	41.83	34	34.69
1972	ARPAN	145	60	41.38	60	41.38
1978	MILBURN	22	13	59.09	13	59.09
1978	VANCIL	684	313	45.76	291	42.54
1978	WU and SHARP	500	NG	NG	209	41.80
1979	TANG	300	154	51.33	145	48.33
1979	LAMBERT	200	84	42.00	61	30.50
1979	KIM and MILLER	342	52	15.20	34	9.94
1980	BURNS	210	114	54.28	62	29.52
1982	YUNKER	358	77	21.50	52	14.52
1982	SCAPENS et al.	497	247	49.70	205	41.25
1982	CZECHOWICZ et al.	300	88	29.33	88	29.33
1984	PRICE WATERHOUSE	148	74	50.00	74	50.00
1985	SOLOMON and TSAY	NG	185	NG	185	NG
1987	ABDULLAH	200	187	48.00	83	41.50

(\*) NG = Not Given.

**TABLE 4.5: BRITISH QUESTIONNAIRE-BASED SURVEYS**

YEAR	AUTHOR OR SPONSOR	TOTAL SAMPLE	RESPONDENTS			
			TOTAL	%	USABLE	%
1967	LIVESEY	400	NG*	NG	232	58.00
1969	PIPER	66	55	83.33	44	66.66
1971	ROOK	NG	293	NG	193	NG
1972	MBS	NG	44	NG	44	NG
1973	TOMKINS	200	65	32.50	44	22.00
1977	EMMANUEL	600	104	17.33	92	15.33
1978	FINNIE	NG	44	NG	42	NG
1981	TANG	290	95	32.75	80	27.58
1982	SCAPENS et al.	734	331	45.09	211	28.74
1982	MOSTAFA	250	181	72.40	46	18.40
1984	WHITING & GEE	330	NG	NG	57	17.27

(\*) NG = Not Given

**TABLE 4.6: CANADIAN QUESTIONNAIRE-BASED SURVEYS**

YEAR	AUTHOR OR SPONSOR	TOTAL SAMPLE	RESPONDENTS			
			TOTAL	%	USABLE	%
1978	MILBURN	41	20	48.78	20	48.78
1979	DRURY & BATES	129	101	78.29	95	73.64
1981	TANG	400	257	64.25	192	48.00

**TABLE 4.7: OTHER QUESTIONNAIRE-BASED SURVEYS**

YEAR AND COUNTRY	AUTHOR OR SPONSOR	TOTAL SAMPLE	RESPONDENTS			
			TOTAL	%	USABLE	%
SWEDEN 1971	ARVIDSSON	343	235	68.15	220	64.14
GERMANY 1972	DRUMM	NG*	24	NG	24	NG
JAPAN 1979	TANG	369	112	30.35	102	27.64
AUSTRALIA 1979	CHENHALL	252	218	86.50	173	68.65
INDIA 1983	GOVINDARAJAN & RAMAMURTHY	71	42	59.15	41	57.74

(\*) NG = Not Given

## 4.1 DOMESTIC TRANSFER PRICING

### 4.1.1 AMERICAN SURVEYS

#### 4.1.1.1 NATIONAL ASSOCIATION OF ACCOUNTANTS (NAA, 1956)

The NAA's *Accounting for Intracompany Transfers* is the first empirical study of transfer pricing practice known and the only one published in the 1950s. A larger scale study was undertaken by Stone (1957) as part of a doctoral research of which the only thing published was an uninformative abstract in the *Accounting Review* (October 1959).

Prior to their survey, the predecessor body of the NAA had debated the transfer pricing issue at two International Cost Conferences in 1925 and 1930 (Eccles, 1985). This provides some evidence to support the claim that transfer pricing became a practical issue when American companies adopted the divisionalised structure (Johnson, 1978; Kaplan, 1984, Eccles, 1985 and Johnson and Kaplan, 1987).

The NAA study involved 40 companies but details of their individual practices were not reported. Nonetheless, the results were interesting as they coincided with Cook's (1955) advocacy of market prices, Dean's (1955) recommendation of negotiated competitive prices and most importantly with Hirshleifer's (1956) marginal analysis.

The majority of the surveyed companies used transfer prices which exceeded cost. A profit mark-up was calculated to yield a desired rate of return on sales or investment. Transfer prices were centrally fixed and the objectives of the cost-plus pricing policies were: decentralisation of management, control of return on invested capital and minimisation of taxes. Organisational units were, in most cases, set up as quasi profit centres whereby competition was sought as an incentive to profit consciousness. Transfers at cost would not foster this aim which is better served by competitive market price as advocated by Cook (1955) and Dean (1955). Thus, Hirshleifer's marginal cost pricing does not find support even from the earliest empirical data.

TABLE 4.8: AMERICAN DOMESTIC TRANSFER PRICING PRACTICE

RESPONDING COMPANIES AND THEIR TRANSFER PRICING METHODS	AUTHOR OR SPONSOR AND YEAR OF PUBLICATION															
	WU & SHARP 1978		VANCIL 1978		TANG 1979		LAMBERT 1979		BENKE & EDWARDS 1980		PRICE WATERHSE 1984		ECCLES 1985		SOLOMON & TSAY 1986	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
<b>RESPONDENTS:</b>																
Participating	209	100%	291	100%	145	100%	61	100%	19	100%	74	100%	13	100%	185	100%
Less non-usable	-	-	52	17.9	12	8.27	-	-	-	-	23	31.1	-	-	-	-
Usable replies	209	100%	239	82.1	133	91.7	61	100%	19	100%	51	68.9	13	100%	185	100%
<b>TRANSFER PRICES:</b>																
- COST-BASED:	107	51.2	112	46.8	177	88.0	27	44.3	7	36.8	22	43.1	12	92.3	165	90.0
VARIABLE COST:	-	-	11	4.6	-	-	-	-	-	-	-	-	-	-	14	7.5
- standard	-	-	7	2.9	7	5.3	-	-	-	-	-	-	-	-	-	-
- actual	-	-	4	1.7	-	-	-	-	-	-	-	-	-	-	-	-
VARIABLE COST +	-	-	-	-	2	1.5	-	-	-	-	-	-	-	-	2	1.0
FULL COST	55	26.3	61	25.5	-	-	27	44.3	-	-	-	-	12	92.3	114	77.6
- standard	-	-	30	12.5	39	29.3	-	-	3	15.8	-	-	-	-	-	-
- actual	-	-	31	13.0	21	15.8	-	-	1	5.3	-	-	-	-	-	-
FULL COST PLUS	52	24.9	40	16.7	44	33.1	-	-	3	15.8	-	-	-	-	-	-
OTHER	-	-	-	-	4	3.0	-	-	-	-	-	-	-	-	5	2.8
- MARKET-BASED	126	60.3	74	30.9	69	51.8	22	36.1	16	84.2	42	82.3	12	92.3	20	11.2
CURRENT PRICE	83	39.7	-	-	50	37.6	-	-	4	21.0	-	-	-	-	5	2.8
ADJUSTED	43	20.6	-	-	19	14.3	-	-	6	31.6	-	-	-	-	15	8.4
OTHER	-	-	-	-	-	-	-	-	3	15.8	-	-	-	-	-	-
-NEGOTIATED	63	30.1	53	22.1	42	31.6	12	19.7	3	15.8	36	70.6	4	30.7	-	-
-DUAL PRICING	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-CENTRALLY FIXED	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-OTHER	14	6.7	-	6.7	4	3.0	-	-	-	-	-	-	3	23.1	-	-
GRAND TOTAL	310	-	239	100%	232	-	61	100%	23	-	100	-	31	-	185	100%

(\*) some companies use more than one pricing method.  
 (\*\*) percentage calculated on total number of usable replies } applies to all studies above.

Internal transfers were accounted for at established inter-unit prices so that income statements for the profit centres could be prepared directly from the accounting records. Unrealised profits generated by transfer prices were eliminated periodically when financial statements were prepared.

Some conclusions can be drawn from the above summary. First, transfer pricing in the mid-fifties was not only a concern for academics alone but also a serious subject in practice. Second, the non-disclosure of detailed company policies indicates the secrecy and uncertainty surrounding the problem. Third, central management control of the pricing decision implies that decentralisation was not a sudden organisational change but a cautious and evolving process. Fourth, divisional performance was judged in terms of overall corporate profits. The participating companies generally stressed coordination of divisional actions in the interest of the company as a whole. This objective is realised by centrally established and administered policies, for instance, central determination and control of transfer prices. Fifth, marginal cost pricing was yet to be proven acceptable for profit centre responsibility. Finally, different purposes called for different bases of pricing inter-unit transfers.

#### **4.1.1.2 WHINSTON (1964)**

Whinston reported on field work undertaken in two American companies as part of a doctoral research on price guides in decentralised institutions. Transfer goods were classified in three different groups, G1, G2 and G3:

G1 - items for which competitive prices were not available and could not be reliably approximated by comparative analysis.

G2 - split items, or items purchased from both outside supplies and company sources.

G3 - items other than split items for which competitive prices were available or could be reliably approximated by comparative analysis.

G2 and G3 were the least difficult as goods were transferred at the same price paid to the outside supplier with possible adjustments for differences in specification, volume

engineering, services, royalties, freight, etc. For G1, where no competitive prices were available, goods were priced at cost plus mark-up. The lack of outside prices implied some arbitrariness and, therefore, disputes. Company policy stipulated a 30-day time limit for settling disagreements, otherwise central management was empowered to intervene and take the cut-off decision.

Internal conflict arose because of a) dissimilarities between the internal division and the competitive producer, and b) because of judging managers on variables beyond their control. Requests by divisions for altering the pricing system were usually rejected by central management. Moreover, divisional managers were obliged to buy from inside sources whenever the company had facilities available. Capital expenditure or new investment decisions were also subject to central staff review and approval.

Given the limited number of participants “*the results can hardly be regarded as providing a representative picture of the [then] current state of corporate practices or problems*” (Whinston, 1964, p. 407).

#### **4.1.1.3 SOLOMONS (1965)**

Since it first appeared in 1965, Solomons’ book *Divisional Performance Measurement and Control* has become an indispensable reference on the subject and has attracted world-wide readership. This has prompted two recent reprints of the book in 1983 and 1985.

Solomons investigated the financial relations existing between central and divisional management in American companies. Inter-divisional relationships and transfer pricing represent an integral part of the investigation which covered 25 industrial corporations. Strong emphasis was placed on two objectives of the transfer pricing system: performance evaluation and goal congruence.

Similar to the results of the NAA’s study (1956), Solomons found that, in most cases, transfers were made at market or market price less the savings in selling costs. Marginal cost was used only by one company as a supplementary method to market price.

In other words, Hirshleifer's (1956) marginal cost rule was once again absent in practice. In the light of the above two objectives, Solomons formulated a set of prescriptions depending on different sets of general circumstances (Chapter 2, Table 2.5).

#### **4.1.1.4 NATIONAL INDUSTRIAL CONFERENCE BOARD (NICB, 1967)**

This study is similar to the NAA's (1956) and Solomons' studies of American companies and reported on the widespread use of market-based prices. However, it differs from its predecessors as it covered a larger number of companies and was limited to transfers of goods among divisions.

As the study was primarily concerned with transfer pricing methods, the results showed that it was common practice among companies to use more than one transfer pricing base. Cost-based methods were used solely or in combination with market-based prices by two thirds of the 190 surveyed firms. Market-based prices were used by more than half the companies, whether alone or in combination with some form of cost-based transfer price. Given that most of the responsibility centres were profit centres, cost-based prices always included a profit margin. Beside that, most companies allowed outside sourcing for intermediate goods.

#### **4.1.1.5 MAUTZ (1968)**

Like Solomons (1965), Mautz (1968) dealt with transfer pricing as part of a larger project on financial reporting by diversified companies. The report is based on the responses of 412 companies (i.e. 16 times the sample of Solomons) of which 341 companies (84%) had transfer pricing policies. Nearly half these companies (166) used only one pricing method, whereas only 23% used two transfer prices. The remaining 28% used more than two methods. In total 51% of the companies used more than one pricing policy.

The variety of pricing policies included full cost (19.8%), full cost plus a mark-up (21.1%), negotiated price (23.6%) and market price (26.7%). Other non-specified

methods were used by 9% of the respondents. Thus, the cost-based and market based prices were equally used by companies. This multitude of policies is in accordance with the theoretical stance that there is no one best pricing method for all situations.

#### **4.1.1.6 LARSON (1974)**

This is one of the few studies where data were collected by interviews only. Eight American firms representing wood products, industrial equipment, petroleum and electronic products, banking, beverages and clothing industries were involved. The interviewees were nine divisional controllers or assistant controllers and eight top-level managers. The subjects investigated included transfer pricing methods and policies regarding outside trading.

The results indicated that all eight companies advocated market price as the best pricing basis but none of them used it. Instead it was found that transfer pricing methods were largely arbitrary and established by top management. Beside that, the freedom to trade with the outside market was very restricted. Approval to buy externally could be obtained from top management only when the producing division lacked capacity to meet demand. Obviously it would be expected that divisional managers would not be satisfied with very restrictive transfer pricing systems that would only lead to conflict. In fact Larson (p. 32) concluded that *“the problem of conflict resolution that surrounds transfer pricing and decentralisation is of such a complex nature that it is doubtful that any present method of transfer pricing would be successful”*.

Such a pessimistic conclusion cannot be taken at face value given the size of the sample chosen for the study and the results of other more comprehensive studies in the present analysis (for instance NAA, 1956; Solomons, 1965; NICB, 1967; Wu and Sharp, 1978; Lambert, 1979; Benke and Edwards, 1980; Price Waterhouse, 1984; Eccles, 1985 and the findings of the present study of British transfer pricing presented later in Chapters 5, 6 and 7.

#### 4.1.1.7 VANCIL (1978)

Vancil's report is as important as Solomons' (1965) for researchers on decentralisation and transfer pricing. The report presents a detailed analysis of divisional interdependence and transfer pricing practices of U.S. firms. Three types of transfers were identified: 1) transfer of goods from one profit centre to another (85% of firms), 2) joint use of common facilities (71% of firms), and 3) transfer of services between profit centres (55% of firms).

Only in 27% of the 249 companies with internal trade did transfers exceed 15% of total company sales. In the majority of companies the level of internal trade between was between 1% to 15% of total sales. The pricing practices are summarised in Table 4.8 above.

The results indicated a statistically significant relationship between firm size and extent of internal transfers in that larger firms had a greater percentage of internal transfers. However, there was a negative relationship between diversification and internal transfers, with single business companies more involved in transfer pricing than more diversified companies. On the other hand, profit margins ROI and EPS were positively related to the level of internal transfers.

Transfers of goods were treated as a purchase and sale transaction in 68% of cases and thus a profit margin was included in the transfer price. This latter was market-based in 40% of companies and negotiated in one third of them. Full manufacturing cost was used in 70% of the companies that transferred goods at cost. Transfer services were priced on actual usage whereas the costs of common facilities were assigned on the basis of square foot capacity.

Vancil (and his collaborators) concluded that *"we have not been successful in our attempt to explain why a particular manufacturing firm makes use of a particular method for transfer pricing. An answer to this question would be quite useful to practitioners*

involved in transfer pricing issues, and *hence this topic offers much potential for further research*” (Vancil, 1978, p. 176). One step in this direction has been made by Eccles (1985) and the research project that comprises the present thesis.

#### **4.1.1.8 MEDNICK (1979)**

Transfer pricing disclosures were only part of Mednick’s analysis of the annual reports of 250 US companies. The main purpose of the analysis was to find out the implications of Statement 14 of the Financial Accounting Standards Boards (FASB) on segment financial reporting.

Issued in December 1976, FASB 14 called for new disclosures about a company’s operations in different industries and foreign countries in its financial statements. FASB 14 required that inter-segment transfers be accounted for on the basis used by the enterprise to price the transactions, and that accounting basis for transfers be disclosed. The pricing basis should be consistent with the objective of determining - in a realistic and practicable manner - the industry segment’s profit or loss contribution. In other words, some form of market price.

More than half the companies reported either no inter-segment sales or a negligible amount. Of the 100 or so companies that had relatively significant inter-segment transfers, 75% priced at an equivalent of fair market price. The remaining 25% priced at either cost, cost plus mark-up, market less a discount or negotiated rates. It is, however, questionable whether information supplied by a company annual report is reliable and sufficient enough for a fair and complete analysis of the complexities of the transfer pricing problem.

#### **4.1.1.9 LAMBERT (1979)**

Lambert studied a fundamental obstacle encountered in the design and administration of transfer prices: internal conflict. As seen earlier, Larson (1974) did not see any pricing method suitable for tackling the problem. The very fact that divisions are treated as profit centres where unit performance is judged in terms of divisional profits leads to disputes whenever there is interdependence and transfer prices.

The transfer pricing policies of the 61 respondent companies are shown in Table 4.7 and the results of their responses are summarised as follows:

- the main source of conflict is divisional profits. If the profits of one division are enhanced by transfer pricing this was perceived as detrimental by the other division.
- the second main factor affecting the level of conflict is the freedom of sourcing. When the customer division is not permitted to buy from the outside market items available from another division, the level of conflict is higher.
- there is less conflict with market price than with full cost or negotiated prices.

Negotiation is supposed to lead to settling internal disputes, not to aggravate them. The degree of conflict observed with negotiated prices could be explained by the lack of freedom over external sourcing and the desire and keenness of divisional managers to maximise their units' profits against which performance is measured.

#### **4.1.1.10 BENKE AND EDWARDS (1980)**

Twenty four years after initiating the first ever empirical study on transfer pricing, the NAA published its second report on the subject. It would have been more interesting if the NAA had sponsored research between 1956- 1980, as this would have enabled a chronological examination of an evolving problem. Fortunately this time gap was, to a certain extent, filled by the efforts of others.

Interviews were conducted with corporate staffs in 19 US companies in 10 different industries. The study results in suggesting the two part tariff transfer price rule which consists of the standard variable cost (SVC) and a lost contribution margin (LCM). The application of this rule depends on the particular situation and, thus, the transfer price is not uniform for all cases and companies. The rule ends up in applying different transfer prices to different situations. The primary techniques used are represented in Table 4.8. The report examined the relationship of transfer pricing to the management control

process, in terms of goal congruence (taken as profit maximisation) and performance evaluation. Most of the transfer pricing techniques used by the companies were profit-centre techniques particularly market-based prices.

#### **4.1.1.11 PRICE WATERHOUSE (1984)**

This is one of the recent surveys in the continuous research on transfer pricing in the USA. The response rate of 50% (74 companies) shows the interest of American managers in understanding the complexities of the problem, especially its managerial implications. Fifty one companies had transfer pricing policies.

One innovation of the study is the introduction of the phrase “*value added transfer pricing*” to designate transfer pricing at a mark-up. This technique was used by 69% of the 74 responding companies and included both market-based and cost plus prices. The popularity of market-based prices is represented by the high percentage of companies (82.4%) using them. This supports the findings of previous studies (Solomons, 1965 and NICB, 1967).

Companies were found to use their transfer pricing systems primarily for performance evaluation. Managerial motivation was also an important objective. This may be explained by the wide use of value added transfer pricing as divisional performance cannot be judged on costs only in profit centres. Moreover, in the majority of companies the buyer and the seller negotiated transfer prices even though external market prices were available. Despite all the disadvantages that this might incur, it could be that negotiation was aimed at stimulating managers by giving them more initiative. However, it seemed that the above objectives were geared towards maximising corporate profits as transfer prices were influenced by central management in almost every company.

Companies used two methods for eliminating intra-company (or pseudo) profit generated by transfer prices: 1) a two-record method and 2) a percentage method. The former segregates each single intra-company profit whereas the latter proceeds by estimating margin percents to bring items back to cost.

Overall this study followed the same pattern as its predecessors in examining the technical and mechanical aspects of transfer pricing. No attempt was made for finding why particular prices were used or their behavioural implications. This particular issue is one of the focal points around which the remaining chapters of the present thesis revolve.

#### **4.1.1.12 ECCLES (1985)**

This study has already been reviewed in the previous chapter but it will be recalled that Eccles' work is a stepping stone for the organisational study of transfer pricing. Spicer (1988) followed with a more comprehensive framework which will be applied later in Chapter 8 and 9 to the results of the present investigation of British transfer pricing practice.

#### **4.1.1.13 SOLOMON AND TSAY (1985)**

This survey undertaken in the USA and published in Canada provides a basis for comparison with Drury and Bates' survey (1979) of EDP charge-back systems in Canadian organisations. Solomon and Tsay received 185 replies to a questionnaire sent to US companies listed in Fortune 500. Forty percent of the responses were from manufacturing companies. The rest of the replies came from a variety of businesses, including insurance (14%), utilities (10%) and commercial banks (9%).

The majority of firms either charged-back all costs to end-users or no costs at all. Some respondents charged for only part of the costs. The charge-back schemes were mostly used by highly decentralised businesses where significant decisions were made at divisional levels. Further observation of the pricing practices indicated that goal congruence and performance evaluation were the major areas of concern for which companies experienced problems. It appeared that in 58% of the cases, companies said that their pricing practices culminated in decisions that were in the best interests of the divisions but not necessarily in the best interests of the firm as a whole. For, Solomon and Tsay (1985, p. 6) argued that *“the need for charge-back schemes arises from the necessity to measure performance of profit and investment centres”*.

These results are identical to those reported by Drury and Bates. However, the pricing schemes of the US companies showed that 77% of the respondents used full cost pricing without a provision for profit. In fact, 91% of data centre managers in companies with charge-back systems were not held responsible for profit but were only expected to break even. The motives for such a policy were not given but this explains the relatively low utilisation of market prices. Contrary to the findings of Drury and Bates, full cost plus a profit margin was the practice of only 2.8% of the respondents.

Solomon and Tsay asserted that transfer pricing requires the integration of accounting, management, economics, and behavioural skills and theories. This view is held by many specialists of the problem and consolidates the approach adopted for the present investigation and described in Chapter 1.

Solomon and Tsay's conclusion also reflects the methodological deficiency that characterises almost all of the studies reviewed above and those described below.

## 4.1.2 BRITISH SURVEYS

### 4.1.2.1 LIVESEY (1967)

This is the first concrete treatment of transfer pricing in the U.K. and is interesting for its coverage and results. The determination of transfer prices and the extent of divisional freedom were the core issues focussed upon. A questionnaire was sent to 400 companies in the Manchester area. One fourth of these companies had inter-divisional pricing.

As shown in Table 4.8, 77% of the respondents used cost-based transfer prices, predominantly full cost and full cost plus a mark-up. The mark-up was fixed arbitrarily because of the difficulty in allocating capital employed in the making of the various products.

Livesey identified a set of five objectives for the transfer pricing systems:

- fostering of a commercial attitude (earning profits),
- encouraging divisional cooperation,
- facilitating control by central management,
- maximising company profits over a short period of time,
- optimising the allocation of the company's resources.

Is there a pricing policy that would further these objectives? This depends on how much freedom divisional managers have in decision-making, an issue not included in Livesey's questionnaire because "*great reliance could not be placed on the answers to this particular question*" (Livesey, p. 101). Even the answers secured through interviews showed that whenever there was some claimed freedom it was limited and conditional. It is therefore evident that there is incompatibility among the above objectives. An organisational study of transfer pricing would yield better explanations than a simple pricing methods- objectives approach.

TABLE 4.9: BRITISH DOMESTIC TRANSFER PRICING PRACTICE

RESPONDING COMPANIES AND THEIR TRANSFER PRICING METHODS	AUTHOR OR SPONSOR AND YEAR OF PUBLICATION																				
	LIVESKY 1967		PIPER 1969		ROOK 1971		M.B.S. 1972		TOMKINS 1973		EMMANUEL 1977		FINNIE 1978		TANG 1981		MOSTAFA 1982		WHITING & GEE 1984		
	No.	%	No.	%	No.	%	No.	100%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
RESPONDENTS:																					
Participating	232	100%	44	100%	193	100%	44	100%	51	100%	92	100%	42	100%	80	100%	46	100%	57	100%	
Less non-usable	132	57.0	10	22.7	-	-	-	-	7	13.7	-	-	9	21.4	17	21.2	5	10.6	13	33.3	
Usable replies	100	43.1	34	77.3	193	100%	44	100%	44	86.3	92	100%	33	78.6	63	78.7	41	89.1	38	66.7	
TRANSFER PRICES:	.	..																			
- COST-BASED:	77	77.0	1	2.9	89	46.1	28	63.6	20	45.4	33	36.8	10	30.3	43	68.2	14	34.1	4	10.5	
VARIABLE COST:	10	10.0	-	-	-	-	3	5.8	3	6.8	2	2.9	-	-	-	-	-	-	-	-	-
- standard	-	-	-	-	-	-	-	-	-	-	2	2.9	-	-	2	3.2	-	-	-	-	-
- actual	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VARIABLE COST +	-	-	-	-	-	-	-	-	6	13.6	-	-	-	-	2	3.2	3	7.3	-	-	-
FULL COST	37	37.0	-	-	89	46.1	20	44.5	3	6.8	16	17.7	-	-	21	33.3	4	9.7	-	-	-
- standard	-	-	-	-	55	28.5	11	26.4	-	-	12	13.2	-	-	12	19.0	1	2.4	-	-	-
- actual	-	-	-	-	34	17.6	9	18.1	-	-	4	4.5	-	-	9	14.3	3	7.3	-	-	-
FULL COST PLUS	30	30.0	-	-	-	-	5	12.1	8	18.2	15	16.2	10	30.3	16	25.4	7	17.1	-	-	-
OTHER	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3.2	-	-	-	-	-
- MARKET-BASED	17	17.0	29	85.3	104	53.9	16	37.6	31	70.4	41	44.1	-	-	23	36.5	18	46.3	23	60.5	
CURRENT PRICE	-	-	-	-	43	22.3	11	26.0	22	50.0	25	26.5	-	-	20	31.7	12	28.7	-	-	-
ADJUSTED	-	-	-	-	61	31.6	5	11.6	22	50.0	16	17.6	-	-	3	4.7	5	12.2	-	-	-
OTHER	-	-	-	-	-	-	-	-	9	20.4	-	-	-	-	-	-	2	4.8	-	-	-
-NEGOTIATED	16	16.0	-	-	32	16.6	-	-	14	31.8	18	19.1	10	30.3	21	33.3	11	26.8	7	18.4	
-DUAL PRICING	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-CENTRALLY FIXED	-	-	4	11.7	-	-	-	-	-	-	-	-	16	48.5	-	-	-	-	-	-	-
-OTHER	-	-	-	-	-	-	-	-	2	4.5	-	-	-	-	4	6.3	3	7.3	2	5.2	-
GRAND TOTAL	110	-	34	100%	193	100%	44	100%	67	-	92	100%	36	-	91	-	47	-	48	-	-

(\*) some companies use more than one pricing method.  
 (\*\*) percentage calculated on total number of usable replies } applies to all studies above.

#### 4.1.2.2 PIPER (1969)

This study followed the same lines drawn by Livesey (1967). The purpose of Piper's questionnaire survey was to discover the bases of internal pricing between the units of an organisation, particularly when these units were operating as autonomous profit centres.

Contrary to Livesey's results, Piper found that the majority of companies (85%) valued transfers at full market price or market price adjusted for transport, quantity discounts, quality or similar factors (Table 4.8). In most cases there were no fixed rules for determining or enforcing transfer prices. Rather it was reported that a large number of firms allowed their divisions to negotiate a transfer price though the bargaining was only concerned with establishing a market-based price. Nevertheless, this freedom of action implied that autonomy and competition were encouraged. In other words, profit responsibility was not pseudo or artificial. Moreover, it was found that there was great "*company spirit*" in that divisional managers were motivated towards goal congruence sometimes by sacrificing their own results for the overall benefit.

Piper also noted that companies were not interested in using different prices for different purposes. Profits were split between divisions on the basis of the internal price, i.e., the market price. No evidence was found regarding the use of mathematical programming techniques much recommended in theory. Finally, Piper argued that knowledge of total variable and fixed costs and overall margins was necessary. Hence, he suggested pricing transfers in two instalments: standard variable cost per unit plus a fixed charge based upon estimated annual trade to cover fixed costs and profit. This two-part tariff method had already been suggested by Solomons (1965).

#### 4.1.2.3 ROOK (1971)

Of the 293 respondents to Rook's survey, 193 companies representing 20 industries had a system of inter-unit trading. This study which was sponsored by the British Institute of Management focused on the same issues treated by Livesey (1967) and Piper (1969) namely: decentralisation, divisional autonomy, and transfer price setting and objectives.

Internal trading accounted for less than 10% of total annual sales in just over half the 193 companies, ranged between 10-25% for 34% of them and was relatively negligible beyond 25%.

Two thirds of the companies had only one internal pricing method while the rest, particularly the largest ones, used more than two methods. This means that the more complex the organisation, the more the need for multiple pricing. Table 4.8 shows that market price was a predominant pricing basis beside full cost price. Once again Hirshleifer's marginal cost pricing was not supported by practice as no company used this method nor did companies use mathematically derived transfer prices.

As to the objectives served by the transfer pricing system, companies were concerned with the motivation of managers' performance and the legal requirements where the units were owned by different companies or were in different countries.

Findings on the extent of divisional autonomy were quite revealing. It was reported that despite the claim of high degree of decentralisation, central management exercised close control over external buying of goods. This was the case in nearly 100 companies. For 25 companies, the decision to buy externally always had to be approved by central management. The same applied to the setting and changing of inter-unit prices as, in most cases, central management had the first and final word on these policies. This is contrary to the philosophy of decentralisation. In her conclusion Rook emphasised the need for careful planning and co-ordination among divisions in order to prevent problems before they arise. Sound inter-unit trading policies which are flexible (i.e., where divisional freedom is guaranteed and preserved) are much needed for a real decentralised structure to exist.

#### **4.1.2.4 MANCHESTER BUSINESS SCHOOL (MBS, 1972)**

The MBS (in association with the Centre for Business Research) undertook a series of management control projects on performance measurement, objective setting, planning and reporting systems, and transfer pricing. The project on transfer pricing aimed at

studying the problem of managing interdependence between decentralised organisational units. Unlike previous studies (e.g. Livesey, 1967, Piper, 1969 and Rook, 1971) the MBS survey dealt also with the pricing of internal flows of services.

Interdependence was measured by the ratio of internal transfers to external sales. Main operating units as opposed to the company was the main focus of attention. The ratio was below 10% in 19 (43%) of the 44 respondents, 10 to 25% in 14 (32%) companies and over 25% in the rest. These results are comparable to those found by Rook (1971). The objectives or functions served by the TPS reported in the study were identical to those identified by Livesey (1967). The most important functions were to a) foster awareness of profit implications of decisions, and b) to identify the contribution of each main operating unit to total company performance. The importance of an objective depended on the degree of divisional interdependence. Companies with a high degree of interdependence considered objective (b) to be more important than (a) and vice versa. As to sourcing policies, it was found that no firm constrained trade internally when an external market existed and that in 20% of the firms, unit managers had freedom over external relationships. Nonetheless, this freedom was not given to main operating units for all products and services. Beside that the locus of the transfer pricing decision was usually at corporate levels. It is interesting to note that for the first time, there was some evidence on the use of shadow prices (2 firms) and marginal cost pricing (2 firms). Some companies reported that they had significant amounts of international inter-divisional transfers and most of them used pricing bases different from domestic ones. The main environmental variables considered in international transfer pricing were compliance with tax laws, customs requirements, transportation costs and profitability of both parties to the transfer price.

#### **4.1.2.5 CHANNON (1973)**

Channon's examination of British transfer pricing practice was part of a Ph.D project reminiscent of Chandler's (1966) *Strategy and Structure* study of American companies. Chapter 7 of Channon's report summarises the findings of structured interviews on the

internal characteristics of a stratified sample of 25 companies chosen from the largest 100 population.

Among the set of items investigated were 1) the degree of product integration and methods of internal pricing, 2) performance measures and 3) reward systems. Companies were grouped according to their diversification strategy into single, dominant, related and unrelated product companies. The single and unrelated product firms were excluded from the analysis as they either were not divisionalised or did not have inter-divisional activity. The findings of the remaining companies (9 dominant and 13 related product) are presented below.

The product flow between divisions was high (over 40%) in 4 of the dominant product companies and in 5 of the related product companies. The high levels of internal trade in these firms was found to be associated with the pattern of diversification and vertical integration. In most of these cases the transfer prices were centrally imposed. In companies with little inter-divisional product flow transfer prices were market-based or negotiated

Divisional performance was predominantly measured by return on investment in most companies, with differences on the divisional investment base. Some companies use additional measures like return on sales, costs, and market share.

Performance was rewarded indirectly via promotional prospects in the 9 dominant product companies and executive salaries were not tied to performance. The 13 related product companies also had similar reward policies except that two of them introduced a stock option scheme based on overall corporate performance.

On the whole executives considered profit related pay unfair and inappropriate and preferred straight salaries, often coupled with employment stability.

#### **4.1.2.6 TOMKINS (1973)**

This is one of the few comprehensive studies conducted in Britain on the subject of planning and control of activities in divisionalised corporations. Of the 200 companies approached, only 65 (32.5%) replied to the mail questionnaire. Information on transfer

pricing procedures was obtained from 44 (22%) respondents. The transfer pricing schemes adopted by these companies are presented in Table 4.8. As in previous studies there was a variety of transfer prices. Twelve companies used more than one pricing method. Over 70% of the respondents had market-based prices, compared to 45% using cost. Cost plus profit mark-up was reported in 8 companies (18%) and negotiated prices in 14 (32%). The use of cost plus was to approximate arm's length price. Current market price was the practice in 50% of the companies. There was no indication that opportunity cost, marginal cost pricing or mathematical programming methods being used. In 31 companies (70%) the ratio of internal trade to turnover was less than 10%. No obvious relationship was found between the volume of goods transferred internally and transfer pricing policies.

Another important result came from some MNCs covered by the survey. None of them reported any constraints imposed by tax authorities in making transfers across national boundaries. Moreover, none referred to profit maximisation as a major determinant of transfer pricing policy.

The above results compare with those found by Piper (1969), Rook (1971) and the MBS (1972).

#### **4.1.2.7 EMMANUEL (1977)**

The aims of Emmanuel's doctoral research were to 1) provide an initial insight of transfer pricing objectives within a corporate environment, 2) find out why particular forms of transfer pricing were used, and 3) to determine the factors influencing the choice of transfer prices. Data were collected from 104 companies responding to pilot interviews and questionnaires sent to a total of 600 large U.K. companies. Details about transfer prices used were obtained from 92 respondents.

Market-oriented and cost-based prices were used by 44% and 37% of the companies respectively. The remaining used negotiated prices, (Emmanuel and Otley, 1985). Cost-based prices were less used if an external market existed. On the other hand, no one firm used mathematical programming or marginal cost for setting transfer prices.

Divisional performance evaluation was found to be related to the transfer pricing policies. Companies using market-oriented and negotiated prices appraised divisional performance in terms of profit or contribution margin while those using cost-based transfer prices evaluated performance in terms of cost. It appears that market-based and negotiated prices were more compatible with decentralisation into profit centres. Nevertheless, Emmanuel noted that market-oriented transfer pricing could lead to dysfunctional behaviour. Only 25% of companies expressed satisfaction with the market-oriented transfer prices and this is because the amounts traded internally were relatively small. However, 40% of the respondents were dissatisfied with their transfer pricing system. This is to say that no single method could be advocated as the "best way" to set adequate transfer prices.

The decision to trade externally had to be approved by central management in 69% of the cases but transfer prices were dictated in 18 companies only. Thus, the internal pricing policy was distinguished from the divisions access to external intermediate markets. The constriction of the latter shows the priority given by companies to overall profitability.

Like Vancil (1978) Emmanuel concluded that *“the inability to explain the reasons for various transfer pricing practices may eventually be overcome by adopting more clinical and longitudinal research techniques”* (Emmanuel and Otley, 1985, p. 204)

#### **4.1.2.8 FINNIE (1978)**

Finnie reported on a survey of transfer pricing practices undertaken by the U.K. branches of the former Institute of Cost and Management Accountants. The survey intentionally concentrated on the transfer pricing of products and materials rather than on the allocation of central services.

The transfer pricing system was found to serve a set of objectives similar to those identified by Livesey (1967) and the MBS (1972). Priority was given to profit consciousness and performance measurement and control. Table 4.8 gives the frequency and percentage usage of the pricing procedures, namely, full cost plus mark-up, negotiated

and centrally fixed. No mention was made of market price but Finnie indicated that negotiation was based on list price less discounts. Negotiation was, however, subject to central supervision. Such a policy might be explained by the lengthy disagreements on prices and the tendency of unit managers to promote selfish rather than global interests. On the other hand, central office interference is more obvious in price setting as transfer prices were centrally fixed in nearly half the companies. Moreover, central management exercised control on most decisions. This is reflected in the limited number of respondents where divisions had some discretion in choosing customers and suppliers.

In summary, the survey revealed *“considerable diversity of practice but with the majority of instances stressing control and preservation of corporate interest above motivation and unit autonomy and with optimisation, whether of tax or resource allocation, a very low priority”* (Finnie, p. 497). Stated otherwise, the results do not substantiate the existence of decentralised profit responsibility.

#### **4.1.2.9 WHITING AND GEE (1984)**

The paper presented by Whiting and Gee at the Seventh Annual Congress of the European Accounting Association in Switzerland is one of the most recent comprehensive studies on cost allocations under decentralised management with divisional interdependence. Although only 57 companies (from 330) completed the detailed mail questionnaire, the response rate (17%) can be considered as acceptable compared to previous studies (see Table 4.5 for response rates in the U.K.). The findings on cost allocation showed that respondents strongly favoured charging on the basis of service or budget costs rather than upon external market prices for equivalent services.

The study of the extent of decentralisation revolved around one important dimension: divisional autonomy. This included autonomy with respect to 1) carrying out purchasing, 2) setting selling prices, 3) advertising, 4) personnel policies, 5) brand names, and 6) reporting the financial consequences of the first five functions. It was found that divisions had full purchasing authority in 32 (56%) companies and needed consultation

with central management in eight (14%) of companies. Similarly full authority in setting selling prices was reported in 42 (74%) companies and consultation with head office was required in another 10 (17%) firms.

These findings have implications on transfer pricing policies as it can be seen from Table 4.9. More than 60% of companies with significant internal trade used market-based prices and another 18% negotiated their transfer prices. Centrally fixed prices were reported in only two (3%) companies. No mention was made of marginal cost pricing or shadow prices but some practices were reported as “*a variety of methods*” without further specification.

The interdependence between divisions that generated the need for transfer prices was caused by six major factors: 1) vertical integration, 2) common customers, 3) common markets, 4) common materials, 5) using the same site, and 6) heavy usage of group services. The study reported no conflict of interests between the divisions and central management and between the divisions themselves. This may be explained by the freedom of action or autonomy that divisional managers have on the crucial operating functions of buying and selling. Moreover, as prices are negotiated in seven companies and there are no centrally imposed prices, it could be concluded that when there is real profit responsibility there is less or no conflict over transfer prices as managers would behave in a goal congruent manner.

### 4.1.3 DOMESTIC TRANSFER PRICING IN OTHER COUNTRIES

In comparison to the American and British cases there have been a number of sporadic investigations on domestic transfer pricing practice in other countries. A total of six studies could be traced and these are presented below. Table 4.10 summarises companies' practices.

#### 4.1.3.1 SWEDEN: ARVIDSSON (1971)

Arvidsson's study was originally published in Swedish. A summary in English is found in Appendix 5 (pp. 167-187) of his book [*Internal Transfer Negotiations* (1973)]. The survey was part of a doctoral thesis submitted at the Stockholm School of Economics.

A total of 343 companies were approached by postal questionnaire yielding 235 responses of which 220 contained information on transfer pricing. Details of the pricing methods were received from 194 firms and these are summarised in Table 4.10. Two-thirds of the companies used more than one method simultaneously. This implies that there is no one best method as is often suggested in the literature.

Arvidsson substantiates this comment with a number of cases drawn from the replies of the Swedish companies. Specific problems concerning transfer pricing were illustrated through those cases. For instance, in the metal and machine industries it was found that a variety of transfer pricing policies were adopted. If the selling unit was a profit centre, it was common to transfer at a market-oriented price or at cost plus. If it was a cost centre, the transaction was priced at the production cost. These prices were centrally fixed in some cases and negotiated in others.

The multi-transfer price system also applied to international transfers. The latter are much more complicated than domestic ones as many additional elements have to be taken into account. These include taxes, duties, currency fluctuation, specific competitive situations and differing business practices. As mentioned above, companies had central instructions regulating internal transfers. These regulations covered also the settlement of disputes through mediation or arbitration.

TABLE 4.10: DOMESTIC TRANSFER PRICING PRACTICES IN SIX OTHER COUNTRIES

RESPONDING COMPANIES AND THEIR TRANSFER PRICING METHODS	COUNTRY, AUTHOR AND YEAR OF PUBLICATION											
	SWEDEN		W. GERMANY		AUSTRALIA		JAPAN		CANADA		INDIA	
	No.	%	No.	%	No.	%	No.	100%	No.	%	No.	%
ARVIDSSON 1971	220	100%	24	100%	173	100%	102	100%	192	100%	41	100%
Less non-usable	26	11.8	-	-	63	40.0	28	27.4	29	15.1	4	8.7
Usable replies	194	88.2	24	100%	104	60.0	74	72.5	163	84.9	37	90.2
TRANSFER PRICES:	•	••										
- COST-BASED:	158	81.4	10	41.6	54	51.9	55	60.8	108	66.2	18	48.6
VARIABLE COST:	-	-	2	8.3	6	5.8	-	-	-	-	2	5.4
- standard	-	-	-	-	-	-	1	1.3	3	1.8	-	-
- actual	-	-	-	-	-	-	-	-	7	4.3	-	-
VARIABLE COST +	-	-	-	-	4	3.8	1	1.3	3	1.8	-	-
FULL COST	-	-	3	12.5	22	21.1	-	-	-	-	-	-
- standard	-	-	-	-	-	-	18	24.3	30	18.4	15	40.5
- actual	-	-	-	-	-	-	11	14.8	21	12.8	-	-
FULL COST PLUS	-	-	5	20.8	22	21.1	24	32.4	37	22.7	1	2.7
OTHER	-	-	-	-	-	-	-	-	7	4.3	-	-
- MARKET-BASED	109	56.2	11	45.8	56	53.8	40	54.0	82	50.3	16	43.2
CURRENT PRICE	-	-	1	4.2	-	-	21	28.4	62	38.0	9	24.3
ADJUSTED	-	-	10	41.6	-	-	19	25.7	20	12.3	-	-
OTHER	-	-	-	-	-	-	-	-	-	-	7	18.9
-NEGOTIATED	56	28.8	-	-	11	10.6	23	31.1	45	27.6	-	-
-DUAL PRICING	-	-	1	4.2	-	-	-	-	-	-	-	-
-CENTRALLY FIXED	51	26.3	-	-	-	-	-	-	-	-	-	-
-OTHER	-	-	2	8.3	-	-	1	1.3	5	3.1	-	-
GRAND TOTAL	374	-	24	100%	121	-	119	-	240	-	34	-

(•) some companies use more than one pricing method.  
 (••) percentage calculated on total number of usable replies.

It would have been more useful if a full English translation of Arvidsson's report was available. The results of the study seem very interesting but their summary in English appears not to contain most of the important details.

#### **4.1.3.2 WEST GERMANY: DRUMM (1972)**

This survey was originally published in German and only a brief English-language summary of the results can be found in Forrester (1977). The original publication as well as details in English were obtained through personal communication with Professor Drumm.

The purpose of the study was to discover the objectives and modes of transfer pricing in large German companies. Managers in 24 such companies were approached by questionnaires and interviews. Most divisions had decentralised powers of production planning and were profit centres responsible for results. One firm had centralised planning, and yet divisional results reporting. Another firm delegated neither the responsibility nor the decision making powers.

In 13 of the 24 companies the ways of price setting were similar. The transfer pricing practices are shown in Table 4.10. In all companies the main aim of the transfer pricing system was long-term profit maximisation. Other aims included optimisation of period results and resource use, apportionment of costs to responsible divisions, divisional responsibility control and minimisation of tax.

The long-term profit objective explains the limited use of marginal costs (only 2 firms) as the latter serve short-term decisions. Full cost is much more popular (8 firms) and is often supplemented with a mark-up for cost of capital or profit. Three reasons were given for full cost pricing:

- internal recipients should bear their full share of cost as though they had produced the transferred goods themselves - notional interest is applied to the capital employed in the production of the transferred goods,
- full cost is necessary for long term investment decisions.

The results of this survey could have more significance if other studies of German practice were available for comparison. The international aspects of the problem would be more interesting as some evidence was provided by Arpan (1972). Unfortunately, according to the personal message received from Professor Drumm, German literature has yet to produce such studies.

#### **4.1.3.4 AUSTRALIA: CHENHALL (1979)**

Little reference is made in the literature to Chenhall's important and very informative study may be because it was not published in one of the customarily referred to accounting journals. Whether the choice of the journal (the Australian Journal of Management) was unfortunate or not, it demonstrates that the subject of profit centres and transfer pricing is beyond the scope of the one discipline. In fact, the cross-disciplinary nature of the problem is well reflected in the areas investigated in the 173 responding divisionalised Australian companies, namely: 1) the strategy of diversification, 2) the basis of divisionalisation, 3) divisional autonomy and transfer pricing, and 4) financial methods of divisional performance evaluation.

The first striking result is the overall response rate of 87% (218 firms) secured through mail questionnaires and telephone interviews. Among all the 36 questionnaire-based surveys summarised in Tables 4.4 to 4.7, only Drury and Bates (1979) could secure a similar high rate of 73%. The latter were, however, concerned with the pricing of computer services in Canadian organisations, not internal transfers of goods and materials. Both response rates may be explained by the cultural factor and its impact on the respondents' behaviour.

The second important finding is that decentralisation into profit centres (or divisionalisation) has come through a long and evolutionary process through which the Australian companies gradually delegated authority and decision-making responsibility to unit-managers. Beside this, most companies divisionalised on product and geographical bases, and nearly half of them used multiple bases to set up their divisions. It was observed that there was a more significant relationship between the bases of divisionalisation and

the industrial classification and pattern of diversification, than with the size of the firm. Similarly there was no apparent association between size and the extent of internal transfers whereas the relationship existed with the type of industry and pattern of diversification.

Of the 173 divisionalised companies, 69 had negligible internal transfers. The transfer pricing policies of the remaining 104 are reproduced in Table 4.10. The figures include both single and multiple pricing schemes. Only 17% of the companies had multiple schemes, i.e., used more than one pricing method at the same time. It can also be seen that market price is the predominant basis, followed by full cost pricing; negotiated prices were reported by only a total of 11 companies.

This pattern of pricing is explained by many factors. The dominance of market price is related to the existence of external markets for internally transferred commodities in 118 (68%) companies. More importantly it is due to the high degrees of discretion given to divisional managers over key operating policies such as determining output quantity, selling prices, setting advertising, marketing and purchasing policies.

The autonomy enjoyed by divisional managers may further explain the low proportion of respondents using negotiation to determine transfer prices. It seems that the more freedom given to managers (together with the existence of accessible external markets), the less the amount of internal conflict. In other words, the less the disputes, the less the need for negotiation and less time is wasted in internal bargaining. The question of conflict was however not raised by Chenhall. The omission of this sensitive issue might also have stimulated the high response rate of 87%.

The discretion granted to managers over some operating decisions is offset by a tight central management control over other important decisions such as forecasting economic conditions and short and long-term borrowing. Moreover, 73% of the participants indicated that they used budgets for co-ordination and close control of divisional plans and performance. This raises questions on the appropriateness of divisional profits for performance measurement given the "budget constrained style" of evaluation (Hopwood, 1974). Performance measurement was divided into managers'

performance and performance of the division (or economic viability). Net profit was used to evaluate both in 166 and 133 companies respectively. This was followed by multiple profit indexes and return on investment. Controllable profit scored less than the above measures. This implies that managers were held responsible for variables over which they did not have control.

In conclusion, it is essential to note that Chenhall's study is the only one available on decentralisation in Australian companies. However, no attempt was made to find out why particular transfer pricing methods were used.

#### **4.1.3.5 CANADA: DRURY AND BATES (1979)**

The focus of this study was on transfer pricing of electronic data processing (EDP) services or EDP charge-back systems. Three objectives were set for the study: 1) to determine which firms used charge-back systems to control their EDP costs and which did not, 2) to determine the factors within the organisation which lead to these alternatives, and 3) to find out the conditions which determine where each scheme is most effective.

To investigate the above issues, Drury and Bates collected data by means of questionnaires and interviews from Canadian organisations. A total of 101 responses were secured, of which 95 were usable. The results indicated that the majority of firms either charged back to end-users all costs or none at all. Some organisations only charged back part of the costs.

The most important factor in determining the use (or non-use) of charge-back systems was the issue of centralisation versus decentralisation of decision-making in the organisation whereby divisional autonomy, compatibility of goals and performance evaluation were a major concern. Hence the need for *“integrative devices such as charge-back systems which assist in goal congruence throughout the organisation, permit the charging of costs to maintain autonomy, and finally as a common base for performance evaluation, lead to the merits of charge-back systems”* (Drury and Bates, p. 105). This statement is in line with Section 5 of the guide-lines set forth by the former Institute of Cost and Management Accountants in the U.K. for charging for computer services (1982).

The pricing practices reported are not compatible with a profit centre structure as 62% of the respondents used cost plus direct overhead (i.e. full cost) charge-back method. Only 14% used full cost plus a profit margin. The rest used variable cost or market prices.

#### **4.1.3.6 INDIA: GOVINDARAJAN AND RAMAMURTHY (1983)**

This is the only empirical study found so far about transfer pricing practices in a developing country. A previous study of Indian practice was reported by Chakraborty (1977) without, however, giving details of survey methodology and results. It is interesting to note that the subject was treated in a series of articles in various Indian journals (Prasad, 1970; Chandra, 1973; Zahir, 1973; Langrana, 1977; Sastry, 1978; Battacharyya et al, 1979; Aggarwal, 1980; Govindarajan and Ramamurthy, 1981; and Joshi, 1984).

The collection of data for the present study was conducted in three phases. During phase one 71 companies were carefully selected as potential respondents to a mail questionnaire despatched in the second phase. Forty one usable answers were received and 24 of the respondents were chosen for field interviews in the last phase.

The results of the study are as follows:

- the larger the companies the greater the number of profit centres,
- product diversity is a more crucial determinant of the number of profit centres than the type of ownership,
- the number of profit centres and the ownership type did not have a significant impact on transfer pricing,
- product interdependence affected the significance of internal transfers,
- market price-based transfers are the most popular among companies,
- only 17% of the companies gave unit managers freedom to sell externally whereas freedom to buy from outside sources was practised in 52% of the companies,
- 44% of the companies using a cost-based transfer price did so on actual costs.

The present study was limited to investigating the pricing methods used. The authors testified that they were not successful in explaining “*why a particular firm uses a particular transfer price*” (Govindarajan and Ramamurthy, p. 301). In other words, like many of the occidental studies, this investigation lacked the organisational and behavioural insights into the problem of internal transfers in Indian companies.

#### **4.1.3.7 YUGOSLAVIA: SACKS (1983)**

Sacks reported on Yugoslav transfer pricing practice as part of a study of divisionalisation under market socialism and worker self-management. The study covered 37 large companies of which 24 were visited. Divisionalisation was found to result from the need to weaken central control so as to achieve self management through more worker participation. This is in sharp contrast to motives of divisionalisation in Western countries where the M-form structure was adopted to improve central control in the large diversified company.

Another major finding is that divisions in the Yugoslav company have very substantial autonomy, especially on trading in the external market. Internal buying and selling of goods and services are valued at approximated market prices, mostly negotiated between the divisions. The third finding is that workers’ incomes “*depend largely on their divisions performance*”. An income sharing arrangement exists in companies and income distribution is largely determined by the market-based transfer prices.

This study is important as it is the only one found on divisionalisation and transfer pricing in non-capitalist countries.

## **4.2 MULTINATIONAL TRANSFER PRICING<sup>1</sup>**

The need for an organisational and behavioural study of transfer pricing which was stressed through the exposition of previous domestic studies equally applies to surveys of transfer pricing across national frontiers. No one study was found to address these critical issues and yet the cultural differences between countries have great influence on managers' behaviour. All the studies below are American. Other surveys on multinationals are later included in the hybrid and comparative studies in Section 4.3. Table 4.11 reproduces companies' practices reported by eight studies.

### **4.2.1 BUSINESS INTERNATIONAL CORPORATION (BIC, 1965)**

This is the earliest published study of transfer pricing in international markets. Transfer pricing practices of 30 U.S. were studied. Pricing between domestic factories and export divisions were a major preoccupation in most MNCs. The companies were examined in the light of a set of environmental factors which include anti-dumping legislation, interests of local joint venture partners, tax and customs duties considerations. No single pricing system seemed capable of meeting all possible situations and this has led to the use of multiple systems by most firms.

There were four pricing orientations: 1) arm's length or established market prices, 2) negotiated prices, 3) local manufacturing cost plus a standard mark-up, and 4) local manufacturing cost of the most efficient corporate unit plus a standard mark-up.

Many MNCs reported a distinct preference for single formula pricing because of the administrative complexity of multiple systems and the importance paid by the tax authorities to transfer prices. The most popular pricing method was production cost plus a fixed percentage mark-up as exports to subsidiaries were considered as "plus" transactions. Such a policy was meant to place all units on the same profit basis when they sold to related divisions. However, this does not provide any incentive to reduce cost and the final selling division is likely to be left with too slim a profit margin.

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<sup>1</sup> not included in this review is the latest study by Al-Eryani et al. (1990) published in the *Journal of International Business Studies*, V. 21, N. 3, pp. 409-425.

TABLE 4.11: MULTINATIONAL TRANSFER PRICING PRACTICE

RESPONDING COMPANIES AND THEIR TRANSFER PRICING METHODS	COUNTRY, AUTHOR AND YEAR OF PUBLICATION											
	U.S.A.				U.K.				JAPAN		CANADA	
	ARPAN 1972	WU & SHARP 1978	TANG 1979	HOSHOWER & MANDEL 1986	TANG 1981	MOSTAFA 1982	TANG 1979	TANG 1981	No.	%	No.	%
RESPONDENTS:	No.	%	No.	%	No.	100%	No.	%	No.	%	No.	%
Participating	60	100%	145	100%	27	100%	80	100%	132	100%	102	100%
Less non-usable	30	50%	12	8.3	2	7.4	17	21.5	86	65.1	26	27.4
Usable replies	30	50%	133	91.7	25	92.6	63	78.7	46	34.8	74	72.5
TRANSFER PRICES:	•	••										
- COST-BASED:	4	13.3	76	46.0	55	64.7	10	40.0	24	50.0	14	42.4
VARIABLE COST:	-	-	-	-	1	1.2	-	-	-	-	-	-
- standard	-	-	-	-	1	1.2	-	-	-	-	-	-
- actual	-	-	-	-	-	-	-	-	-	-	-	-
VARIABLE COST +	-	-	-	-	2	2.3	-	-	2	4.2	2	6.1
FULL COST	-	-	16	9.7	12	14.1	6	24.0	5	10.4	3	9.1
- standard	-	-	-	-	6	7.0	1	4.0	2	4.2	3	7.1
- actual	-	-	-	-	6	7.0	5	20.0	3	6.2	3	7.1
FULL COST PLUS	4	13.3	60	36.3	38	44.7	4	16.0	16	33.3	9	27.3
OTHER	-	-	-	-	2	2.3	-	-	1	2.1	-	-
- MARKET-BASED	20	66.7	87	52.7	41	48.2	10	40.0	24	50.0	11	33.3
CURRENT PRICE	17	56.7	53	32.1	24	28.2	10	40.0	17	35.4	6	19.2
ADJUSTED	3	10.0	34	20.6	17	20.0	-	-	7	14.6	2	6.1
OTHER	-	-	-	-	-	-	-	-	-	-	3	9.1
-NEGOTIATED	-	-	52	31.5	16	18.8	5	20.0	19	39.6	7	21.2
-DUAL PRICING	-	-	-	-	-	-	-	-	-	-	-	-
-CENTRALLY FIXED	-	-	-	-	-	-	-	-	-	-	-	-
-OTHER	6	20.0	13	7.9	-	-	-	-	4	8.3	4	12.1
GRAND TOTAL	30	100%	228	-	118	-	25	100%	71	-	36	-
											63	-
												105

(•) some companies use more than one pricing method. } applies to all studies above.  
 (••) percentage calculated on total number of usable replies

#### **4.2.2 SHULMAN (1969)**

Only eight large U.S. companies were involved in this interview-based study which investigated the relationships between a number of environmental variables and transfer pricing. The variables with a potential influence included: taxes, import duties, currency fluctuation, economic restrictions, unstable governments, competitive advantages, foreign partners, and public relations. Not all of these variables were taken into account in the transfer pricing decisions of the participating companies.

Cost-oriented transfer prices were found predominant and only few companies used negotiated prices or incremental cost plus a mark-up. Shulman observed that transfer pricing was a serious problem that affected the financial control system. Hence, a successful transfer pricing system should serve the control system to measure, evaluate and motivate divisional management. Highly directive transfer prices were found to cause disproportionate shares of income. Therefore the resulting poor performance is not due to management failure. To counter this problem two companies maintained two sets of books: one for external reporting and another for internal measurement and evaluation.

#### **4.2.3 GREENE and DUERR (1970)**

This is the second study sponsored by the National Industrial Conference Board. The first study (1967) reviewed earlier dealt only with domestic aspects of transfer pricing. The study is based on the views of senior executives of 130 US MNCs about their policies regarding transactions with foreign affiliates.

Corporate policies on international transfer pricing were found to be influenced by constant pressures from internal and external factors. These were mainly tax and customs considerations and the desires of domestic divisional executives and of local managers of foreign subsidiaries. The results also showed that, depending on the availability of an intermediate product market, transfers were valued either on a cost-plus basis or by negotiation. When the goods could be purchased externally, the transfer price was subject to negotiation between the involved parties. Negotiated transfer prices were claimed to be based on some concept of a competitive price resting between minimum supplying

and maximum purchasing price. In the absence of an external market, the rule was to price at cost plus a profit mark-up. Furthermore, to ensure that responsible management was maintained, the transfer pricing system had to be related to budget or profit attainment in each subsidiary.

#### **4.2.4 BURSK et al. (1971)**

This research was sponsored by the F.E.R.F. the same body that sponsored a few years earlier Solomons's study (1965). While the latter study was conducted by one person, the former was shared by four leading academics on management control. The complexities of the multinational world require rigorous and more careful attention than the domestic scene.

The report looked at the financial control of multinational companies from the point of view of the chief financial officers. Data were collected by means of questionnaires and interviews. The findings from the responses of 34 MNCs and 53 subsidiaries are as follows:

- almost all respondents had inter-subsidiary transactions,
- over 50% of transfers were priced at cost plus profit,
- 32% of transfers were valued at market or estimated market price.
- 8% of transfers were valued at variable cost,
- in 50% of the cases, the transfer price is fixed by the parent company,
- in 44% of the cases prices are set by arm's bargaining.

The use of market-based and cost plus profit imply that the most important objectives were profit optimisation and subsidiary profit performance evaluation. Thirty two of the 34 companies (94%) placed primary emphasis upon the profit performances of their foreign subsidiaries. Actual profits versus budgeted profits was the principal measure of performance. In fact, the importance of subsidiary profit is evidenced by the

reward-sanction system. In nearly 40% of the cases bonuses for the executives were based directly on profit performance and were influenced by the same factor in another 35% of the firms. They were unaffected by profit performance in only 8% of cases.

The authors noted many problems with cost plus and market based transfer prices for international operations, particularly marketing decisions. They acknowledged that there was no perfect solution to the transfer price problem but suggested the two-part tariff formula as a better alternative. This latter would consist of an amount per unit equal to the standard variable cost and a total monthly amount equal to the fixed cost plus a return on investment. This proposal was earlier suggested by Solomons (1965), Livesey (1967), Benke and Edwards (1980), and modified by Emmanuel (1977).

#### **4.2.5 ARPAN (1972)**

Arpan examined the multinational dimensions of transfer pricing in 60 wholly owned U.S. subsidiaries of foreign firms from in ten countries. The purpose of the survey was to identify non-American transfer pricing systems and compare them with American ones. The results showed that all non-American parent companies had a policy of centralised prices and these prices were mostly market-oriented. The popularity of market-based prices was due to the business environment in the U.S.A. which was characterised by a high degree of competition, tight legal restrictions, decentralisation and the large size of subsidiaries. In fact, all of the foreign subsidiaries had a high degree of autonomy except for transfer price setting.

The setting of transfer prices was the absolute prerogative of parent company executives regardless of firm nationality. Arpan noted that English and German owned subsidiaries were not as independent as the French, Dutch, Canadian and Belgian ones, and that the most independent of all were the Italian and Scandinavian owned subsidiaries. These varying degrees of autonomy were explained in terms of differences of culture as some companies were more conservative and control-oriented (e.g. English and German) than others. Italian managers were described as free-wheeling.

The wide use of market-oriented prices implied that non-US transfer pricing systems were less complex as they did not require sophisticated cost data. There were, however, national differences in the variables considered for the formulation of transfer price guidelines. Hence *“the French prefer non-market oriented systems because they can thus minimise world tax payments. The English also prefer a cost-orientation but their goal was to achieve their target return on investment rates. The Italians used market-oriented systems to minimise their tax liability. Canadians also employ market-oriented and a desire to maintain good relations with other governments. The Scandinavian firms view good relations with other governments as paramount, and consequently, they are the biggest supporters and users of market-oriented prices. The Germans are the least concerned about transfer pricing, do not seem to prefer any given orientation and do not exhibit any dominant pattern”* (Arpan, 1972, p. 105). Stated otherwise, the above findings imply that a universally optimal system of intracorporate pricing does not exist.

#### **4.2.6 KIM and MILLER (1979)**

Kim and Miller noted that previous research on international transfer pricing defined the problem in terms of short-term objectives (namely taxes) and was restricted to the problems of the more advanced countries. To overcome these limitations, they conducted a survey that focused on long term financial decision-making policy of American MNCs with at least one subsidiary in two of eight specified developing countries (Korea, Malaysia, Phillipines, Taiwan, Brazil, Colombia, Mexico and Peru). Responses to a mail questionnaire were received from 52 MNCs of which 34 were usable. Further information was collected through interviews with several partners of five accounting firms and controllers of three big US parent companies.

Companies were asked to rank on a scale of one to four the importance of nine factors with regard to their impact on the transfer pricing decision. Contrary to Greene and Duerr (1970), it was found that income tax liabilities were not the most significant factor that affected cross-border transfer pricing as they ranked fifth and sixth among the

nine factors. Instead, the results indicated that the most important factors were profit repatriation restrictions, exchange controls and joint venture constraints within the host country.

These findings imply that international transfer pricing policies are more likely shaped by long-term considerations relating to the firm's profitability objectives rather than short-term factors such as taxes and tariffs. It is therefore a matter of long-term corporate planning.

#### **4.2.7 BURNS (1980)**

Burns investigated the effects of 14 variables on transfer pricing decisions of American multinationals. Questionnaires were sent to 210 companies and usable answers were received from 62 respondents. The list of variables considered is similar to those used by previous surveys (such as Kim and Miller, 1979).

Respondents believed that intra-company prices for exports were influenced by 10 of the variables. The most influential variable was "market conditions in the foreign country", followed by "competition in the foreign country" and "reasonable profit for foreign affiliate". The least important factors were "floating exchange rates", "management of cash flows" and "other US federal taxes".

Similar to the findings of Kim and Miller (1979), "income tax liabilities" were not the major factor that affected transfer pricing decisions. The US Treasury regulations on transfer pricing contained in Section 482 of the Internal Revenue Code (IRC) stipulate that intracompany transfer prices must be fixed at arm's length determined by one of four methods to be used in the following order: 1) comparable uncontrolled price (CUP), 2) resale price (RSP), 3) cost plus (CP) and 4) reasonable profit split test (PS), (Casey, 1985). Companies' views on these regulations were not uniform as only 43% of the respondents believed that CUP was reasonable for their transfers; 30% believed that RSP was reasonable, and 64% preferred CP. Only 5% showed no preference for any of these prices for most of their intracompany export sales.

In general, as is evidenced by previous studies, there are a number of intervening variables that affect the international pricing decision. These variables have varying degrees of importance. It seems that market conditions, profitability and subsidiary performance evaluation are given priority by most MNCs.

#### **4.2.8 BAVISHI and WYMAN (1980)**

This study is broader in scope but similar in some respects to that reported by Mednick (1979). Both were concerned with the implications of FASB 14 on financial reporting and had a common database: the annual reports of large US companies. Bavishi and Wyman reviewed 296 such reports and found that 66% of the firms had intra-firm transfers. These transfers were mostly priced at market (35%) or cost plus (15%).

The break-down of information by industry showed a heavy reliance on market price by the oil industry (68% of 19 firms) whereas most of the offices products companies (55% of 11 firms) relied on cost plus. Some negotiated prices were also used by these two industries. The food, chemicals and pharmaceutical industries used both market and cost plus pricing in a balanced way.

The results indicated that companies were trying to comply with the transfer pricing provisions of FASB 14. The question, however, is whether a database provided by company reports is reliable enough for generalising the conclusions, especially when outside the context of organisational control.

#### **4.2.9 YUNKER (1982)**

The purpose of this study was to find out the relationship within and among three aspects of corporate policy of US MNCs: subsidiary autonomy, transfer pricing and performance evaluation. A total of 358 MNCs were approached by questionnaires of which 52 were completed and returned. The important findings of the study are:

- profit centre structure was predominant for both domestic and foreign subsidiaries,

- long-run profit was the leading current business orientation (71%), followed by new product development (63%), growth in sales (40%) and increase in market share (35%),
- the most important determinants of international transfer pricing included government regulations, raw material and labour costs, overall demand for commodities produced, and level of competition.
- market price was the most important single pricing method, followed by standard unit full cost plus fixed mark-up,
- there was little use of marginal cost, opportunity cost and mathematical programming optimal price.
- divisional autonomy was associated with high utilisation of market oriented transfer pricing,
- there was positive correlation between profit oriented performance evaluation criteria and market-oriented prices. It was observed that both transfer pricing and performance evaluation policies were influenced by a set of exogenous factors, mainly world sales, foreign sales ratio and environmental variability.

The comparison of Yunker's study to previous ones on American multinational transfer pricing shows that there is a variety of practices and policies and that there is no uniform transfer pricing system to cater for the needs of all companies. These needs vary according to the location of subsidiaries and the environmental conditions in the host countries.

#### **4.2.10 CZECHOWICZ et al. (1982)**

Czechowicz et al. reported on performance evaluation of foreign units of US and non-US multinational companies. The data base for the study consists of 88 completed mail questionnaires, personal and telephone interviews with financial executives in 30 firms, and three round-table discussions involving 50 US-based MNCs. The responding companies operated in 12 different industries.

Similar to previous studies on MNCs, a set of factors that affect cross-border performance evaluation were examined. These include organisational characteristics, financial and non-financial criteria, foreign exchange considerations, inflation, inter-company allocations and transfer pricing.

The findings on transfer pricing practice indicated that US companies most frequently used cost plus mark-up, followed by market or a variant of market price. This is similar to the results of most of the studies on US MNCs reviewed in the present comparative analysis. To the contrary, non-US MNCs employed market price (or a variant) and less frequently cost-oriented price. This difference of policy is explained by the fact that 88% of non-US MNCs allowed their foreign operations a substantial degree of local autonomy, compared with 72% of American MNCs. Moreover, in the majority of non-US firms (63%) prices are negotiated by unit managers whereas in the US MNCs prices are split between central determination (41%) and negotiation (38%).

Other results indicated that the vast majority of respondents (83% US and 88% non-US) used the same pricing basis for both internal reporting (performance evaluation) and external reporting (tax authorities). Beside that, 78% of US and 92% non-US companies reported the same pricing method for foreign as well as comparable domestic operations. The results also showed that most companies claimed fairness for their transfer pricing system as they felt it was representative of arm's length price. However, if this assertion might be accepted for the non-US MNCs because of their decentralised decision-making and the market-price preference, it is difficult to accept that in 83% of the US firms the transfer price does not distort the evaluation of overseas operations. Transfer prices are based on cost and centrally fixed and US subsidiaries do not enjoy the freedom of action their non-US counterparts have. Furthermore, most companies evaluated the unit and the manager on the same financial basis. This should be so only when the unit is treated totally at arm's length, i.e., when the manager has control over the criteria on which he is judged. Therefore to assert that in most cases the transfer price represents an arm's length price and is performance evaluation compatible implies that possible bias cannot be ruled out from the information disclosed by the US respondents.

#### **4.2.11 HOSHOWER and MANDEL (1986)**

The aim of this study was to test whether highly diversified multinational firms followed Eccles' (1983 and 1985) transfer pricing suggestions. Data were obtained through a questionnaire mailed to the corporate treasurers of the 37 largest diversified MNCs listed in Forbes (1983). Information was requested about:

- the amount of inter-divisional transfers,
- the locus of the decision-making,
- the general basis for setting transfer prices.

Only 25 companies responded and their answers indicated that the diversified MNCs have a relatively lower level of transfer activity than the general population of large firms. Only 8 companies reported transfers between 1 and 10% whereas the majority (17) had less than 1% transfer activity. Transfer prices were market-based in 15 companies and cost-based in the remaining ten. The transfer pricing decision was made at the divisional level in 20 companies.

The results show consistency with decentralised profit responsibility and Eccles' normative framework. However, the study is very limited in scope. The problem is more complex than the three items listed above, particularly in vertically integrated companies.

#### **4.2.12 ABDULLAH (1987)**

This survey was concerned with international cash management and fund positioning strategies of multinational companies. Usable answers to questionnaires were received from 83 US companies, a response rate of 41.5%. The following issues are among the areas covered by the study:

- the degree of centralisation of international cash management,
- the techniques used in the cash management system,
- the extent of the use of the transfer pricing mechanism,
- the factors considered in making the transfer pricing decision.

The majority of the respondents (72%) indicated that they had centralised cash management structures. Hence, most of the MNCs (around 70%) reported no or very seldom use of the transfer pricing mechanism to facilitate the transfer of funds among affiliates and from affiliates to parent. Only 8% of the respondents used it frequently.

The primary motive for transfer pricing was tax considerations (21 companies), followed by cash flow and fund positioning considerations. The priority given to tax considerations is supported by the findings of Greene and Duerr (1970), and discredited by Kim and Miller (1979), Tang (1979) and Burns (1980).

### 4.3 HYBRID AND COMPARATIVE STUDIES

The studies included in this section either examine both the domestic and multinational dimensions of transfer pricing or cover more than one country at the same time.

#### 4.3.1 GRANICK (1975): USA, BRITAIN AND FRANCE

This study is another major development in the research on transfer pricing. Although it reported on data collected in the mid 1960s, it has highlighted the relationship and impact of national differences in Britain, France and the United States on transfer pricing policies. Intensive interviews were conducted in a total of 13 firms of which 6 were British, 7 French and 2 American.

British practice showed that 5 companies set transfer prices at their best estimate of market prices. There was little interference from company headquarters in inter-unit bargaining but freedom of sourcing was found in one firm only.

French practice was much different as only 2 firms used market prices whereas 2 of the remaining 5 had systems described as anomalous and which corresponded neither to open market nor to marginal cost pricing rules. The other three approximated marginal cost.

One of the American companies had market prices and the other used marginal cost.

The national differences in transfer pricing practice was explained in terms of managerial career patterns. The British pattern was described as “*open promotion*” and the French as “*closed promotion*” (Granick, 1972, p. 362). In Britain the criteria used for managerial selection and promotion seemed to depend upon job performance, not on class or education. Managers were found to have typically moved upward through a single job function within a single narrow product group. Promotion was based on the success in the present position. Thus, those who reached top divisional or corporate levels had little experience in handling decisions in the new positions. Consequently, they adopted a policy of withdrawal and little interference with lower managers as headquarters seemed to act as holding companies rather than as coordinating units. Market prices were found

to suit such a situation. Moreover, the widespread use of open-market prices is explained by the fact that middle and upper management receive bonuses depending upon the profitability of their particular divisions rather than in accord with the results of the company as a whole.

In France the situation was quite the opposite as education was the principal criterion for managerial selection and promotion. Most of the chief executives graduated from one of the three leading educational institutions in France. Career advancement is relatively independent of their performance after entering the firm. Hence, the reliance upon marginal cost transfer pricing as large industrial firms had little need for evaluating the performance of lower level managers. This implies that the French system is not reward-based, i.e. no system of bonuses exists.

In the American case there was enough internal circulation of information between company headquarters and divisions, and top management played an active role in transfer price setting. American firms were also found having an “*open promotion*” system but with a speedy rotation of managers through very frequent transfers. Promotion is therefore determined on subjective rather objective grounds and so are financial rewards (Granick, 1972, pp. 363 and 368).

The size of the samples and the outdated information reported raise the question of whether the results and conclusions are at all representative. It remains, however, that Granick’s survey is the only one available on the French experience.

#### **4.3.2 WU and SHARP (1978): U.S. DOMESTIC and MULTINATIONAL PRACTICES**

The importance of this study lies in the issues raised on both the domestic and the international markets for over 200 large American companies. Wu and Sharp investigated whether:

- the organisational mode affected a firm’s transfer pricing policy,
- the organisational mode affected a firm’s pricing decision,

- the domestic transfer pricing practice differed from the international transfer pricing practice,
- the generally recognised pricing criteria affected the pricing decisions of business firms.

It is clear from the above that a distinction was made between the pricing policy and the pricing decision. The former meant the level of authority on the pricing of internal transfers while the latter implied the selection of the pricing policy to be adopted. Five major findings resulted from the data analysis:

- 1 - a firm's intra-company pricing policy is significantly affected by its organisation mode depending on whether the organisation was centralised, decentralised or somewhere in between (termed "neutralised"). It is interesting to note that even in decentralised organisations, transfer pricing is centralised in a large number of companies.
- 2 - a firm's pricing decision is not significantly influenced by its organisational mode regardless of whether the transfers were domestic or international and whether a market price was or was not available. However, when a market price was available, it was the predominant basis for valuing transfers. Otherwise full cost plus a profit margin was the predominant basis.
- 3 - the traditional objectives (autonomy, profit maximisation, performance evaluation and financial reporting) so often claimed for a transfer pricing system did not necessarily dictate the pricing decision.
- 4 - whether market prices were or were not available, negotiation prevailed in most companies. Further analysis indicated that negotiation was the most favoured way of settling disputes over transfer pricing.
- 5 - mathematical programming transfer prices and marginal cost pricing were largely unpopular.

In summary this study has opened two issues for further research: first, the organisational aspects of transfer pricing and second, the adequacy and importance of negotiation in settling disputes and setting the right transfer prices.

#### **4.3.3 MILBURN (1978): U.S. AND CANADIAN MULTINATIONAL PRACTICES**

Milburn's survey was concerned with the measurement of transactions between controlled affiliates of multinational companies. Data were obtained by questionnaires and interviews from 13 American and 20 Canadian partners from major accounting firms. Particular emphasis was placed on the external user of national segment financial data.

Three sets of factors were proposed for the determination of international transfer prices:

- the accounting measurement and disclosure rules prevailing in the nations of the parent company and trading affiliates,
- certain third party forces and their pricing preferences,
- corporate management's international pricing preferences.

Three types of transfers were considered: *a) regular goods*; *b) head office services*; and *c) special assets*. Respondents were also asked to rank four transfer pricing methods: arm's length equivalent, full cost, full cost plus mark-up, and marginal cost. None of these four methods was preferred by almost all the American respondents whereas the Canadian participants showed preference for arm's length equivalent with respect to special asset transfers. The Canadians also ranked the pricing methods for regular goods transfers in this order: 1) arm's length equivalent, 2) full cost plus mark-up, 3) full cost, and 4) marginal cost. Once again empirical evidence revealed the unpopularity of marginal cost pricing.

On the other hand, most respondents agreed that financial statements should include information on transfer pricing practices of subsidiaries and affiliates.

In general, one can say that international transfer pricing is far more complex than domestic pricing. This is reflected in the three sets of rules laid down by the author. If each set is considered on its own this will lead to the analysis of a multitude of issues that affect multinational transfer pricing like taxes and tariffs, anti-dumping regulations and profit repatriation. In other words, *“a multinational company must consider the interrelated economic conditions and laws of host countries in framing a transfer pricing policy”* (Cowen et al. 1979, p. 18). Therefore the problem is more of an economic and management decision than a simple accounting exercise.

#### **4.3.4 TANG (1979): U.S. AND JAPANESE PRACTICES**

This is a comparative study of domestic and international transfer pricing practice in the United States (145 firms) and Japan (102 firms).

Tables 4.8 and 4.10 in Appendix show that on the domestic level American transfer prices were more cost oriented than Japanese ones. In both cases, however, it was found that the dominant pricing bases were full production cost, full cost plus, market price, adjusted market price and negotiated price. Market-based prices accounted for 52% and 54% in the US and Japanese firms respectively.

On the international scene transfer prices were less cost oriented except for full production cost plus for which there was a significantly greater use. Further investigation revealed that the use of non-cost oriented transfer prices in Japan was related to the size of the firm. The larger the firm the less the use of cost-based prices. This relationship did not hold for the American counterparts.

The maximisation of consolidated profits was a key objective (beside performance evaluation) of the transfer pricing system in both countries. This variable received the highest ranking (among 20 variables) as a determinant of international transfer pricing.

The results of this study resemble those found by Kim and Miller (1979) and are of interest for research on US-Japanese trade relationships. It would also be of great significance if the impact of culture was introduced in the explanation of differences between the practices of these developed countries.

#### 4.3.5 TANG (1981): BRITISH AND CANADIAN PRACTICES

This is the second comparative study by Tang. It complements the previous survey in 1979 of American and Japanese transfer pricing practices. Comparison of both surveys is made possible as the author collected the data using the same questionnaire. For multinational pricing companies were asked to judge the degree of importance of the same 20 variables listed in the 1979 survey. Usable responses were obtained from 80 (28%) British and 192 (48%) Canadian companies representing more than 18 industries. More than half the responding companies had inter-divisional transfers of 10% or less of their total revenue and more than one fourth had transfers that amounted to more than 20% of total revenues.

The domestic transfer pricing practices in both countries are presented in Tables 4.9 and 4.10 where it is explicit that cost-based, market-based and negotiated prices are the dominant methods. Full cost plus and current market prices are widely used by both British and Canadian firms. Similar to the findings of the 1979 survey, the “*overall profit of the company*” is the variable that received the highest rating by the respondents with regard to inter-divisional transfer pricing. In fact the results indicated that the maximisation of consolidated profits after tax was one of two most important objectives (beside performance evaluation) of the transfer pricing system. There were, however, noticeable differences between the two countries for some of the remaining 19 variables. “*Rates of customs duties*” was the second important variable in Canada whereas it was ranked at 11th by British respondents. The “*performance evaluation of foreign subsidiaries*” was ranked seventh and third in Canada and Britain respectively. The “*interests of local partners*” was given twice as much importance by British companies than by Canadian ones.

By and large there were no big differences between the practices reported in the 1979 and this study. The wide use of market-based prices in all four countries strengthens their recommendation in theory. The four countries studied (U.S.A., U.K., Japan and Canada) are all developed countries and are each other’s trade partners (to varying

degrees) and their transfer pricing schemes have two common objectives: profit maximisation and performance evaluation. To understand the differences in some practices, a cross cultural explanation seems to be necessary.

#### **4.3.6 MOSTAFA (1982): BRITISH DOMESTIC and MULTINATIONAL PRACTICE**

This is the third survey of British transfer pricing practice conducted by a doctoral candidate. Unlike its predecessors (Channon, 1973 and Emmanuel, 1977), it covered both domestic and international markets. The objectives of the study were:

- to investigate the current state of transfer pricing practice,
- to identify the major determinants of transfer pricing policy, and their statistical significance,
- to discover the underlying relationship between these determinants,
- to evaluate quantitatively the relationship between the determinants and the pricing methods.

A questionnaire containing details on the above issues was sent to 250 companies from all over the U.K. Usable answers were received from only 46 respondents. The major findings are:

- the majority of companies used one transfer pricing method,
- most companies indicated that divisional managers were responsible for setting transfer prices,
- Table 4.9 shows that domestic market-based prices were predominant, followed by cost-based and negotiated prices. There was difficulty of acquiring information about true market price,
- there was very limited use of mathematical programming techniques,
- marginal cost pricing was not found in any company,

- current market price is the most popular for domestic transfers compared to manufacturing cost plus for international transfers,
- the most important determinants for the domestic market are: divisional autonomy, performance evaluation, divisional and corporate profits, and the preparation of financial statements. Beside these determinants, international pricing was influenced by foreign tax and tariffs regulations.

Further statistical analysis revealed that UK companies considered decentralisation as the most important factor in domestic transfers, whereas government regulations were given priority for international transfers.

#### **4.3.7 SCAPENS et al. (1982): U.S. and U.K. PRACTICES**

Scapens et al. reported on the preliminary findings of a large scale study on financial control in divisionalised companies in both the U.K. and the U.S.A. Similar studies have already been mentioned in the U.S.A. by Solomons (1965), Mautz (1968) and Vancil (1978) and in the U.K. by Tomkins (1973). Divisional autonomy and divisional inter-relationships form a major section of the report.

Inter-divisional transfers of finished and semi-finished products counted as one of the most widely acknowledged interdependencies in 91.7% and 85.6% of the U.K. and U.S. respondents respectively. The use of group services is also an important factor, with response rates of 75.2% in the U.K. and 83.1% in the U.S.A. The ratio of inter-divisional transfers to sales is, however, generally small. Only 14.5% British and 17.7% American respondents have internal trade over 20% of external sales. The majority of inter-divisional transfers represent between 5% to 19% of sales.

No details of specific pricing policies were reported as the survey was primarily concerned with the degree of autonomy over transfer pricing policies. The results indicated that transfer prices were centrally fixed in 15% of the U.K. responding firms, compared to 29.8% U.S. firms. However, in the majority of companies transfer prices are negotiated between divisional managers. In most cases (68.6% in the U.K. and 50.9% in the U.S.A.) negotiation is guided by available market prices but the transfer price is

not necessarily a negotiated market price. When a compromise cannot be reached, external sourcing might be permitted. If divisions are not allowed to trade externally or no external intermediate market exists, prices are determined by central arbitration.

It was also observed that the majority of companies gave divisional managers responsibility for day-to-day purchases, or for external purchases up to a certain amount. Therefore, there was limited freedom for trading externally items available internally, and more freedom for other daily operating activity. As the authors put it “*divisional managers have autonomy within guidelines*” or “*controlled autonomy*” (Scapens et al., 1982, p. 42).

#### 4.4 SUMMARY AND CONCLUSION

The foregoing presentation of the 47 surveys has provided some insight into the various aspects of transfer pricing. Although some samples are too small for their conclusions to be generalised, it remains that the complexities of the problem are well reflected in the variety of practices reported by participating companies and the environmental variables influencing international transfer pricing.

There is no best pricing method for all situations whether on the domestic or international level. Taxes represent the touchstone in multinational transfer pricing. As different countries have varied taxation systems there have been instances of MNCs using transfer pricing to maximise profit in low-tax rate countries (or tax havens) at the expense of profit in high-tax countries. This has caused potential losses of tax revenues for some governments. These latter have, however, become more aware of the dangers of transfer price manipulation and have reacted by tight legislation on cross-border trade between affiliates. For example, in May 1979 the OECD Committee on Fiscal Affairs issued a report proposing the adoption of the arm's-length principle for establishing taxable profits. Similarly, Section 482 of the US Internal Revenue Code, Section 485 of the ICTA (corporation tax) and the 1975 Finance Act in the U.K. empowered tax authorities to scrutinize cross-border transfer pricing more closely. This has resulted in some instances in tax reevaluation and led to prosecutions. Many such cases are reported by Choi and

Mueller (1978), Mason (1979), Eiteman and Stonehill (1979), Reekie and Weber (1979), Stopford et al. (1980), Flory (1984), Moore and Strefeler (1984), Globerman (1986) and Sargent (1987). The case reported by Choi and Mueller (1978), Reekie and Weber (1979), Stopford et al. (1980) and Sargent (1987) involved the Swiss pharmaceutical firm Hoffman-LaRoche which was fined £ 1.85 billions in back taxes by the British government. Globerman (1986) mentions a similar case in Canada where the Amway company was made to pay the huge sum of £ 25 million for tax evasion through transfer pricing abuse. These few cases indicate that the OECD guidelines have been endorsed in many countries. In the U.K. they are found to be compatible with the jurisdiction of the Inland Revenue (Sargent, 1987).

A close examination of survey methodologies has revealed that only a few studies have adopted a comprehensive approach. Most of the studies were limited to exposing companies' practices but fell short of finding out why particular policies were used. It is only recently that the organisational aspects of transfer pricing have become the focus of analytical (Swieringa and Waterhouse, 1982, Grabski, 1985 and Spicer, 1988) and empirical (Chenhall, 1979 and Eccles, 1985) research. Stone (1959) drew the attention to this point when he stated that *“the role of transfer pricing depends largely on the organisational structure. Management demands upon transfer pricing have increased over the past 20 years - [over 50 years now] - and it is likely that its role will assume increasing importance as a control device in the future”* (pp. 631-32).

An organisational approach is, however, hampered - at least for the time being - by some obstacles including the secretive nature of transfer pricing, the sensitivity of detailed questionnaires and the wide gap between the academic and business circles. This makes relevant information not readily available because companies are *“tight-lipped and do not readily divulge the criteria which underly their pricing policies, both on sales to outside customers and for intra-group purposes”* (Plasschaert, 1983, p. 439). Therefore what the problem requires is an investigation from within the companies concerned, i.e. research stimulated by people who have access to vital and well protected information. Unless companies are encouraged to sponsor such initiatives, theory and practice will

always grow in a parallel rather than a converging pattern. Consequently, the tremendous differences and controversies observed over the last three decades (1956-1987) will only persist and the problem will remain a puzzle.

The next chapter describes the questionnaire and interview based survey conducted on a sample of large decentralised companies in the U.K. as part of the present organisational and behavioural insight into the transfer pricing problem.

## **CHAPTER 5: THE PRESENT STUDY**

### **5.1 SCOPE AND SURVEY OBJECTIVES**

The overall objective of the survey is to depart from the traditional descriptive approach of companies' practices as discussed in the previous chapter, to an organisational and behavioural approach of the transfer pricing problem.

More particularly, the questionnaire and interview survey conducted for this study focuses on the managerial aspects of transfer pricing in a decentralised, profit responsibility set-up in order to find explanations as to why companies adopt particular pricing policies. While the technical side of the problem is not ignored, most attention however is given to the internal and external factors that affect the internal transaction and the implications of the latter on the business organisation and the people it employs. These factors have been summarised in the framework suggested in Chapter 1, Section 1.4.2.2. It should be stressed again that, insofar as empirical studies are concerned, there is a noticeable lack of emphasis on the reciprocal relationship between transfer pricing systems and human behaviour. As the results of any enterprise reflect the efforts of the person(s) managing it, it becomes obvious that the neglect of the human factor in the study of business phenomena means the neglect of the driving force behind the success or failure of the organisation.

The study purposely targeted large decentralised companies organised on a divisional basis. The predominance of the large company in the U.K. economic, social and political scenes makes the study of transfer pricing more complicated and hence more interesting. With high levels of market concentration (few large competitors), product diversification, vertical integration and technological interdependence, more market transactions are "internalised." For instance, eight of the companies participating in this survey reported high volumes of internal transfers. Of particular importance are an aluminium company and a tobacco company which reported the respective figures of 80% and 90% internal trade, i.e sales to third parties represent only a small fraction of

the total volume of transactions. This means that the 80% and 90% internalised transactions are not governed by the market but are subjected to the transfer pricing systems of these two companies which operate in different industries and have different organisational structures and cultures as it will be seen from their individual case studies in Chapter 8. In these and similar cases, it would obviously be wrong to just enquire about what transfer prices are used and ignore the interwoven relationships and implications that surround the internal pricing policy. Accounting data are therefore not sufficient for a full analysis of the problem. There is need for explanations from other disciplines like the economics of the firm, organisational behaviour, contingency theory and agency theory. The present survey has been designed with these requirements in mind in order to find out why companies adopt particular transfer pricing policies.

As the data to be generated are for testing the validity of the five hypotheses formulated in the introductory chapter, the following objectives have been assigned to the present survey:

- 1 - to investigate the degree of decentralisation in British companies by examining:
  - the organisational structure and business strategy,
  - the degree of divisional autonomy over various aspects of decision-making especially those affecting divisional performance.
- 2 - to examine current British transfer pricing practices by looking at:
  - the different pricing policies of companies,
  - the locus of the transfer pricing decision,
  - the determinants affecting the particular transfer pricing policies,
  - the relationships between transfer pricing and companies characteristics such as size, industry and base of divisionalisation,

- the problems related to the transfer pricing practices or the degree of satisfaction with these practices.
- 3 - to explore the relationships between the organisational structure, the transfer pricing policy and the human factor by finding out:
- the companies performance measurement and evaluation policies of both divisions and their managers,
  - the nature of the information used in the performance evaluation process,
  - the principal-agent relationship through looking at the managerial incentives and compensation schemes in British management,
  - the causes and resolution procedures of internal conflict over transfer pricing.
- 4 - to be able to infer from the data satisfactory explanations as to why companies adopt particular policies and highlight the areas where corrective action may need to be taken.

## **5.2 SURVEY DESIGN**

### **5.2.1 THE COMPANIES STUDIED**

The subjects of this study were large decentralised public companies from 20 industrial sectors. They were randomly drawn from the Times 1000 and the KBE (Key British Enterprise) in terms of their turnovers and number of employees. Except for a few companies in the service sectors, most respondents are manufacturing companies.

### **5.2.2 DATA COLLECTION METHODOLOGY**

In order to obtain a sufficient usable amount of data, the following methodology was adopted:

- 1) designing, testing and administering a suitable mail questionnaire to a sizable number of companies,

- 2) field and telephone interviews,
- 3) review of published annual reports and accounts of participating companies,
- 4) get access to other useful (internal) documents from companies,
- 5) review books, periodicals and newspapers for possible case studies to be developed on selected companies.

### 5.2.3 QUESTIONNAIRE DESIGN AND STRUCTURE

After reviewing the literature (and especially the previous empirical studies in Chapter 4), defining the objectives and formulating the six-factor framework and the hypotheses, it was necessary to draw up a mail questionnaire that would satisfy the following requirements:

- 1) to be comprehensive enough to provide sufficient and relevant information,
- 2) to be as simple and clear as possible in order not to confuse the respondent
- 3) not to be lengthy and cumbersome as this would discourage participation.

Several drafts were necessary before an acceptable version entitled “*Questionnaire on domestic transfer pricing in decentralised U.K. companies*” was tested in two pilot surveys. The questionnaire which is reproduced in Appendix G<sup>1</sup> is comprised of seven sections. Each section consists of a series of open-ended and/or closed questions, check-lists and rating scales depending on the type of information required. As the emphasis is on the organisational and behavioural contexts of transfer pricing in decentralised companies, only a few numerical questions were asked. Most items queried lend themselves to multiple choice judgement on their relative importance in corporate strategy or company operations. Hence the extensive use of open-ended questions, check-lists and rating scales. Moreover, given the sensitive nature of the subject, the

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<sup>1</sup> at the end of the thesis on page 343

questions were arranged in a sequence that should stimulate the respondent's interest and confidence in the study and consequently make likely the obtaining of the relevant data needed.

The first section of the questionnaire requested general information on the company in order to facilitate classification of participants. Information was also sought on the company's organisational and business strategies.

Section B on "decision making responsibility" aimed at providing an insight into the extent of decentralisation and divisional autonomy in British companies.

Section C contained eight questions on transfer pricing. The first question focused on the locus of the transfer pricing decision. Questions two, three and four asked for details about the dominant pricing basis, the particular pricing methods and how frequently they were used. Question five and six aimed at finding whether companies had different internal pricing policies for like transfers and the reasons for such policies. The pricing policies are then assessed in terms of dominance criteria and objectives in two rating scales in the last two questions.

In Section D six questions are asked on performance measurement, evaluation and reward. A distinction is made between division's and manager's performance in order to find out whether non-controllable factors are taken into account when evaluating and compensating managers. The previous sections, and particularly Sections B and D, are complemented with Section E on causes and remedies of conflict.

Section F examined the causes, frequency and consequences of reviews and adjustments to the transfer pricing systems.

To increase the reliability of answers to the above sections, nine cross-checking open-ended questions were added in the final section called "general observations".

#### **5.2.4 QUESTIONNAIRE PACKAGE**

The questionnaire package mailed to each company consisted of the following items which are reproduced in Appendix G:

- 1 - a cover letter explaining the objectives of the study,
- 2 - a letter of introduction with project title, addresses and qualifications of both the researcher and his supervisors.
- 3 - explanatory notes for completing the survey forms,
- 4 - the 8-page questionnaire,
- 5 - a prepaid return envelope.

This package was personally addressed to the finance directors whose names were obtained from the KBE and the companies' published reports. If the name was not listed, the package was simply addressed to the Finance Director. The questionnaire survey was divided into two pilot and one full scale studies backed by follow-up letters and telephone enquiries.

### **5.3 THE PILOT STUDIES**

#### **5.3.1 SAMPLES AND RESPONSE**

Two pilot studies were conducted during the Summer and Autumn 1987. The first pilot study consisted of 15 of the largest companies from the top 100 list of the Times 1000 (1987) to which the original questionnaire was mailed. Only four companies completed the forms and one company offered a 30-minute interview instead but declined to provide any useful information. After a preliminary analysis of the answers a similar pilot survey was conducted with smaller size companies from the bottom of the Times 1000 list. Fifteen firms were sent the questionnaire but only one responded positively after a follow-up contact. By the end of October 1987 a total of 5 positive replies was received from both samples.

### 5.3.2 PRELIMINARY RESULTS

- 1) transfer pricing is a very sensitive issue and surveys need to be carefully designed to guarantee a good response rate,
- 2) the pilot surveys produced a 17 % response rate,
- 3) all sections of the questionnaire were completed, except for question QE1 on causes of conflict, as the words *OVERT* and *LATENT* were found ambiguous by three of the respondents. Telephone conversations with the rest of the participants confirmed this ambiguity which had to be corrected for the full scale survey.
- 4) all five companies had relatively small amounts of internal trade (from 2.5 % to 6 %),
- 5) the volume of internal transactions did not depend on the size of the company as the first four respondents were among the largest companies but with little internal trade,
- 6) the not-very-large company (second pilot study) was more cautious about disclosing information on its transfer policies than the very large one (first pilot study),
- 7) the response rate and the completion rate indicated that a full scale study was feasible after slight modifications to the questionnaire.

### 5.4 QUESTIONNAIRE REFINEMENT

Prior to starting the full scale survey the following amendments were made to the questionnaire package on the basis of written and verbal comments made by some of the respondents from the pilot studies:

- 1) the words *OVERT* and *LATENT* in question QE1 on conflict were changed to *FREQUENT* and *INFREQUENT*. The wording of the rest of the questionnaire as well as its original format remained the same, thus preserving consistency of answers,
- 2) the cover letter was redrafted to improve participation (Appendix I),

- 3) the colour of the paper was also changed from white to golden.

## **5.5 THE FULL SCALE STUDY**

### **5.5.1 THE SAMPLE**

The improved package was then despatched in February 1988 to 120 companies chosen at random from the Times 1000 and the KBE. Due to the sensitive nature of the issues raised and the length of the questionnaire, no specific deadline was set for returning the questionnaire, as a time constraint would only prompt quick excuses for non-participation as well as non-elaborate answers, if any. Nonetheless the closing date for questionnaire collection was informally fixed to the end of June 1988.

### **5.5.2 THE RESPONSE**

By the end of March 1988, eight companies had completed the questionnaire, 25 refused to participate and 87 abstained from replying. A follow-up letter (Appendix G) was then sent in the first week of April to these latter. This produced a further five usable and four negative replies. Given the slow response, it was then decided to contact the remaining 78 companies by telephone. Eleven of them were not accessible by phone and 20 others were not willing to participate. The remaining 47 asked for another copy of the questionnaire (noting that 11 of them gave new addresses different from those listed by the Times 1000 or the KBE). By the end of June, another 15 completed questionnaires were received, 12 companies gave excuses for not being able to help and 20 abstained from replying. Thus the full scale survey yielded 28 completed forms. The five questionnaires from the pilot surveys were then reviewed and updated through telephone conversations with the respondents. This leaves a total number of responses of 33 (22%) a fairly acceptable result compared to previous questionnaire-based studies discussed in Chapter 4, (Table 4.4).

## **5.6 FIELD AND TELEPHONE INTERVIEWS**

A total of six companies were visited at different stages of the questionnaire survey. The first interview was the initiative - during pilot phase one - of a multinational tobacco company as an alternative to completing the 8-page questionnaire. However, no useful

information could be obtained as the interviewee preferred to focus in the 30 minutes allocated on cross-border transfer pricing problems, issues not covered by the present study. It was concluded from this first encounter that future interviews would have to be anticipated and solicited only from those companies that satisfied the following criteria:

- 1) the company had fully completed and returned the questionnaire,
- 2) the company had a substantial amount of internal trade (no company from either pilot study had more than 6%),
- 3) at least one hour would be allocated for the interview. Eight companies - all respondents to the main survey - reported volumes of transfers between 33% and 90% of total company sales. Each of these companies was first contacted by telephone and access was obtained to five of them (Table 5.1).

**TABLE 5.1: PERSONAL VISITS TO COMPANIES**

COMPANY	INDUSTRY	DATE	TIME	PERSON INTERVIEWED
A	ALUMINIUM	04-10-88	3 HRS	FINANCIAL ANALYST, GROUP ACCOUNTANT AND PLANNING MANAGER
B	PHARMACEUTICALS	03-11-88	2 HRS	GROUP BUDGET MANAGER
C	TOBACCO	08-01-89	2 HRS	FINANCIAL DIRECTOR
D	ELECTRONICS	27-02-89	1 HR	GROUP FINANCIAL CONTROLLER
E	ELECTRONICS	09-08-89	1 HR	STRATEGIC PLANNING MANAGER *

(\*) not the person that completed the questionnaire.

Except for one company located outside London, the interviews were conducted in the companies headquarters office in the London area with the person who had completed the questionnaire and/or some other person in the control and planning functions (Table 5.1 above). An interview agenda based on the completed questionnaire was prepared for each case, although the actual meetings were open ended. Copies of the companies' annual report and accounts and organisational chart were provided in each case. Further written

information was obtained on request from the pharmaceuticals company, the tobacco company, the aluminium company and one of the electronics companies. A number of small telephone interviews were also conducted with some of the respondents to clarify some of their answers or to obtain further information.

## **5.7 QUESTIONNAIRE CODING AND STATISTICAL METHODS USED FOR INFERENCE IN THE STUDY**

### **5.7.1 QUESTIONNAIRE CODING**

To facilitate the analysis of the answers, the questionnaire entries (or variables) have been abbreviated in acronym forms (Appendix H<sup>2</sup>). Moreover, every main question is assigned a code that refers to its sequence in the questionnaire. For example QA2 is question 2 (Basis of Divisionalisation) in section A (Organisational Characteristics). This numbering sequence is particularly used to designate tables that aggregate the questionnaire data. For example Table 5.5 (QA2) refers to the fifth table in Chapter 5 that summarises responses to Question QA2.

### **5.7.2 STATISTICAL METHODS USED**

Although the overall response rate of 22% is acceptable for a sensitive issue like transfer pricing, the limited number of participating firms is a restriction on the level of statistical analysis. Nonetheless, the following statistical techniques were used wherever appropriate to analyse the data and provide some ground for testing the research hypotheses:

- 1 - numerical coding of responses,
- 2 - use of mean response and standard deviation of response as descriptive statistics,
- 3 - Chi-square contingency tables,
- 4 - correlation analysis.

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**2** at the end of the thesis on page 356

The Chi-square statistic (symbolized by  $X^2$ ) is applied to computations of frequencies classified according to two factors in order to discover whether the factors are related and how strong the association is. The  $X^2$  test of independence applied here departs from the null hypothesis that the two criteria of classification are statistically independent, i.e. there is no association between them. The  $X^2$  distribution is linked to the measurement of deviations between observed and expected frequencies, the latter being the frequencies that would be expected if the null hypothesis was true. The  $X^2$  distribution expresses sample size in terms of degrees of freedom (df) which reflect the amount of usable information in sample and are related to the sample size. In the contingency table the df are determined by the number of rows and columns. For example in a 4x5 table, the  $df = (4-1)(5-1) = 12$  df, that is once the twelve cells are freely specified in the table, the remaining eight cells are predetermined or conveniently calculated by difference since the row and column totals are known. The decision rule is to reject the null hypothesis of non-association if the computed value  $X^2$  is  $\geq$  to the probable or critical value in the  $X^2$  table. The significance level is the probability of deciding for the alternative hypothesis when the null hypothesis is true, i.e. the probability of rejecting a true null hypothesis, or what is called a Type I error.

Correlation is a measure of linear association (or the strength of the relationship) and not necessarily indicative of cause-effect relationships. As each check-list and rating scale in the questionnaire consists of more than two variables, multiple correlation is applied where appropriate and the results are reproduced in correlation matrices in Chapter 5 and 6. Significance levels up to 5% are designated by ( ) and those between 5% and 10% are marked with (°). The statistical analysis was limited to the above because of the difficulty involved in applying statistical methods to cross-tabulated data. The statistical calculus was performed using the STATGRAPHICS software package (version 1987 by Statistical Graphics Corporation, U.S.A.), a powerful PC package that integrates a wide variety of statistical functions with high resolution colour graphics.

## **5.8 SUMMARY OF RESULTS.**

### **5.8.1 SAMPLE CHARACTERISTICS AND RESPONSE.**

Altogether 150 companies from twenty industries were contacted, producing 108 (72%) replies (73 non-participating and 35 questionnaires). Two of the 35 questionnaires were only partially completed and all attempts to obtain further information failed. This leaves a total of 75 (50%) non-participating companies and 33 (22%) usable responses. Forty two companies (28%) abstained from replying to either the mail or telephone correspondence. Table 5.2 below gives the industrial classification of the whole sample. The 75 companies that did not wish to participate in the survey gave four major reasons (Table 5.4):

- a) it is company policy not to participate in non-statutory surveys (24%),
- b) the time required cannot be spared (17%),
- c) the issues raised by the questionnaire are commercially sensitive and cannot be disclosed (19%), and
- d) the survey is not relevant to the activities of the company (40%), i.e. not concerned with transfer pricing.

However, after consulting the published annual reports of the 30 companies that claimed no transfer pricing, it was found that 18 (60%) had internal transactions but eliminate them from the group turnover figure. Only three of these companies indicated in their annual reports the amount of internal trade and their pricing policies. Thus it may be assumed that these 18 companies - as well as the 42 non-responding - did not want to participate in the survey due to its sensitivity.

**TABLE 5.2: INDUSTRIAL GROUPING OF ALL COMPANIES \***

INDUSTRY	TOTAL	Non- responding	RESPONDING FIRMS	
			NON- USABLE	USABLE
1) AEROSPACE	4	2	2**	-
2) AUTOMOTIVE PRODUCTS	6	1	3	2
3) BUILDING MATERIALS	7	-	5	2
4) CHEMICALS AND PHARMACEUTICALS	19	4	9	6
5) CONSTRUCTION AND CIVIL ENGINEERING	5 2	1 2	1 -	3 -
6) DISTRIBUTIVE TRADES	17	1	12**	4
7) ELECTRICAL ENGINEERING AND ELECTRONICS				
8) FOOD, DRINK AND TOBACCO	19	4	10	5
9) GLASS	2	1	-	1
10) INFORMATION SYSTEMS	4	-	3	1
11) INSTRUMENT ENGINEERING	11	6	3	2
12) MECHANICAL ENGINEERING	7	3	4	-
13) METAL GOODS	3	2	-	1
14) MINING AND METAL MANUFACTURE	7	2	4	1
15) MOTOR VEHICLES	5	3	1	1
16) OIL AND GAS	5	2	3	-
17) OTHER MANUFACTURING INDUSTRIES	8	3	2	-
18) PAPER, PRINTING AND PUBLISHING	8	2	5	1
19) TEXTILES	8	2	3	3
20) TIMBER AND WOOD PRODUCTS	3	1	2	-
<b>TOTAL</b>	<b>150</b>	<b>42</b>	<b>75</b>	<b>33***</b>
	<b>%</b>	<b>100%</b>	<b>28%</b>	<b>50%</b>
				<b>22 %</b>

(\*) Classification adopted from Huggett and Meyer (1981, pp. 4-5) in conformity with the Standard Industrial Classification (SIC, 1980). Companies are classified according to their major industrial activity.

(\*\*) One of these companies returned the questionnaire incomplete and all attempts to obtain further information from the company were not successful.

(\*\*\*) The responding companies represent 14 industries. The companies representing the remaining six industrial sectors did not wish to participate in the survey.

It was also learnt from some companies that they refuse to participate in non-statutory surveys because they most often do not receive feed-back reports from the researcher. This may also be a motive for the 42 companies that abstained from replying. Finally, as the questionnaire was addressed to the Finance Directors, usually busy executives, the time factor may have been the major reason for no reply from these 42 companies.

**TABLE 5.3: COMPANIES RESPONDING BUT NOT PARTICIPATING.**

REASON FOR NOT PARTICIPATING	NO.	%
COMPANY POLICY	18	24%
TIME	13	17%
SENSITIVITY	14	19%
RELEVANCE	30 *	40%
TOTAL	75	100%

(\* ) included are the two companies that returned the questionnaire incomplete.

### 5.8.2 POSITION OF PERSON FILLING THE QUESTIONNAIRE

Although the questionnaires were addressed to the Financial Directors only 10 were completed by them, but altogether 29 (85%) of the 33 usable replies were from senior corporate finance and accounting staff (Table 5.4). The remaining four questionnaires were filled in by non-accounting and finance staff. This indicates that transfer pricing is a pervasive subject that concerns all functions of the divisionalised company and not just an accounting exercise.

**TABLE 5.4: (QA1) CORPORATE POSITION OF PERSON COMPLETING THE QUESTIONNAIRE**

POSITION	NO.	%
<b>A) FINANCE:</b>	<b>23</b>	<b>70%</b>
1) FINANCE DIRECTOR	10	
2) FINANCIAL CONTROLLER	11	
3) FINANCIAL ANALYST	2	
<b>B) ACCOUNTING:</b>	<b>6</b>	<b>18%</b>
1) GROUP CHIEF ACCOUNTANT	5	
2) GROUP MANAGEMENT ACCOUNTANT	1	
<b>C) VARIOUS:</b>	<b>4</b>	<b>12%</b>
1) GROUP BUDGET MANAGER *	1	
2) MANAGER, CORPORATE DEVELOPMENT	1	
3) GROUP ASSISTANT SECRETARY	1	
4) TAXATION SPECIALIST	1	
<b>TOTAL</b>	<b>33</b>	<b>100%</b>

(\*) chartered accountant by training.

### 5.8.3 LEGAL STATUS OF THE PARTICIPATING COMPANIES

Although all questionnaires were sent to companies' headquarters, five of them were returned from subsidiaries incorporated in the U.K. as private companies. Moreover, thirteen of the participants were listed in the Stock Exchange Year Book as holding companies and the remaining fifteen as public companies.

### 5.8.4 INDUSTRIAL CLASSIFICATION OF THE PARTICIPATING COMPANIES

The following table gives an industrial classification of the participating companies. A high proportion of companies represented industrial sectors 3, 5 and 6. The combined positive replies from these groups amount to 15, almost half the total number of participants. Seven of the eight companies with the highest volumes of transfers come from these three sectors (electrical/electronics, chemicals/pharmaceuticals, and food stuffs). The rest of the participants are evenly spread among 11 industrial sectors.

**TABLE 5.5: INDUSTRIAL CLASSIFICATION OF THE PARTICIPATING COMPANIES**

<b>INDUSTRY</b>	<b>TOTAL</b>	<b>%</b>
1) AUTOMOTIVE PRODUCTS	2	6%
2) BUILDING MATERIALS	2	6%
3) CHEMICALS AND PHARMACEUTICALS	6	18%
4) CONSTRUCTION AND CIVIL ENGINEERING	3	9%
5) ELECTRICAL AND ELECTRONICS	4	12%
6) FOOD, DRINK AND TOBACCO	5	15%
7) GLASS	1	3%
8) INFORMATION SYSTEMS	1	3%
9) INSTRUMENT ENGINEERING	2	6%
10) METAL GOODS	1	3%
11) MINING AND METAL MANUFACTURE	1	3%
12) MOTOR VEHICLES	1	3%
13) PAPER, PRINTING AND PUBLISHING	1	3%
14) TEXTILES	3	9%
<b>TOTAL</b>	<b>33</b>	<b>100%</b>

(\*) percentage may not add up to totals because of rounding.

## **5.8.5 PROFILE OF THE PARTICIPATING COMPANIES**

### **5.8.5.1 COMPANY SIZE**

According to the criteria set by the 1985 Companies Act, none of the participants can be considered as small or medium company. Section 248 (2) of the Act limits the balance sheet total (or capital employed) of a medium company to £ 2.8 million, its turnover to £ 5.75 million and its average number of employees to 250. The smallest company in the sample has a market value of £ 45 million, a turnover of £ 96 million and almost 2000 employees as is depicted in the two tables below. This implies that, with respect to size in absolute terms, the companies studied form a homogenous group.

**TABLE 5.6: COMPANY SIZE: TURNOVER AND CAPITAL EMPLOYED (1988)**

RANGE (£ million)	TURNOVER *		CAPITAL ** EMPLOYED	
	No.	%	No.	%
Less than £ 100m	1	3%	8	24%
£ 100m - £ 250m	6	18%	4	12%
£ 250m - £ 500m	3	15%	5	15%
£ 500m - £ 1,000m	8	24%	6	18%
£ 1,000m - £ 2,000m	8	24%	8	24%
£ 2,000m - £ 4,000m	5	15%	1	3%
Over £ 4,000m	2	6%	1	3%
<b>TOTAL</b>	<b>33</b>	<b>100%</b>	<b>33</b>	<b>100%</b>

(\* ) from £ 96 million to £ 12 billion. (\*\* ) from £ 45 million to £ 6 billion.

**TABLE 5.7: COMPANY SIZE: NUMBER OF EMPLOYEES (1988\*)**

RANGE	NO.	%
Less than 2,000	1	3%
2,000 to 5,000	6	18%
5,000 to 10,000	2	6%
10,000 to 20,000	10	30%
20,000 to 40,000	8	24%
40,000 to 80,000	4	12%
Over 80,000	2	12%
<b>TOTAL</b>	<b>33</b>	<b>100%</b>

(\* ) includes overseas employment.

#### 5.8.5.2 TIMES 1000 RANKING

Fifteen of the 33 responding companies are ranked among the top 100 by the Times 1000 (1988/89) both in terms of annual turnover and market capitalisation (Table 5.8). In aggregate more than 90% of the participating companies come from the top 500 of the Times 1000 whether in terms of turnover or capital employed as shown in the table below.

**TABLE 5.8: TIMES 1000 (1988/1989) RANKING**

RANK RANGE	TURNOVER		CAPITAL EMPLOYED	
	No.	%	No.	%
TOP 100	15	46%	15	46%
100 - 200	7	21%	6	18%
200 - 300	2	9%	2	6%
300 - 400	5	15%	5	15%
400 - 500	1	3%	3	9%
500 - 600	2	6%	1	3%
600 - 700	0	0%	1	3%
700 - 1000	1	3%	0	0%

### **5.8.6 DIVERSIFICATION STRATEGY AND DIVISIONALISATION STRUCTURE OF THE PARTICIPATING COMPANIES**

#### **5.8.6.1 DIVERSIFICATION STRATEGY**

Using the information contained in company annual reports and EXTEL cards the following diversification pattern was adopted from Rumelt's (1974) categorization:

- 1) Low diversification:
  - a) Single business: companies committed to a single product line which represents at least 95% of total revenues.
  - b) Dominant business: companies that have diversified to some extent but obtain at least 70% but not more than 95% of their revenues from a single business. If the company is vertically integrated it is referred to as Vertical Dominant (VD).
- 2) Medium diversification: companies that diversified into businesses related to the original product line whereby no one product line accounts for more than 70% of total revenues. Related Constrained (RC) designates companies in which each business activity is related to almost all of the other business activities. Related Linked (RL) companies are those diversified into widely disparate businesses which are related only by some already possessed skill or strength.

- 3) **High diversification:** companies that diversified by more than 30% of sales into businesses unrelated to the original product-market. These are mostly conglomerates.

Some of the companies in the present survey have already been classified by Channon (1973) and re-classified by Luffman and Reed (1984). Whenever there was doubt about how to classify a company, the firm was contacted by telephone to get a better judgement of its diversity and adjustments were made to the Luffman and Reed's pattern when necessary. Telephone conversations with Professors Channon, Pickering and Luffman were also very helpful in this respect. Overall, the result indicates that even among this relatively small number of companies, diversification - especially the dominant and related markets types - is predominant.

**TABLE 5.9: DIVERSIFICATION PATTERN OF THE RESPONDING COMPANIES**

<b>DEGREE OF DIVERSIFICATION</b>	<b>No.</b>	<b>%</b>
<b>LOW DIVERSIFICATION</b>	14	42%
S - single business	5	
D - dominant market	6	
VD- vertical dominant *	3	
<b>MEDIUM DIVERSIFICATION</b>	17	52%
RC- related constrained	10	
RL- related linked	7	
<b>HIGH DIVERSIFICATION</b>		
U - unrelated businesses	2	6%
<b>TOTAL</b>	<b>33</b>	<b>100%</b>

(\* ) only one of these is fully vertically integrated.

Among the three vertical dominant (VD) companies only one (aluminium company with 80% transfers) is fully vertically integrated. The other two (a textile company and a building materials company with 10% and 8% transfers respectively) have partial integration in one of their businesses. This tends to imply that the trend towards diversification by large companies and the Government's programme for small business enterprise is resulting in gradual dissolution of vertical integration.

**TABLE 5.10 DIVERSITY BY INDUSTRY GROUPING**

INDUSTRY GROUP	DEGREE OF DIVERSITY			
	LOW	MEDIUM	HIGH	TOTAL
<b>CAPITAL GOODS:</b>				
BUILDING MATERIALS	1	1	-	2
GLASS	1	-	-	1
PROPERTY DEVELOPMENT	2	1	-	3
CHEMICAL- INDUSTRIAL	2	1	1	4
ENGINEERING- metal	1*	-	-	1
ENGINEERING- heavy	-	1	-	1
ENGINEERING- light	1	1	1	3
<b>TOTAL</b>	<b>8</b>	<b>5</b>	<b>2</b>	<b>15</b>
<b>CONSUMER DURABLES</b>				
AUTOMOBILE MANUFACTURE	1	1	-	2
ELECTRICAL/ELECTRONICS	3	2	-	5
CHEMICAL - consumer	-	2	-	2
<b>TOTAL</b>	<b>4</b>	<b>5</b>	<b>-</b>	<b>9</b>
<b>CONSUMER NON-DURABLES</b>				
FOOD STUFFS	1	4	-	5
TEXTILES	1	2	-	3
PAPER/PACKING/PUBLISHING	-	1	-	1
<b>TOTAL</b>	<b>2</b>	<b>7</b>	<b>-</b>	<b>9</b>
<b>GRAND TOTAL</b>	<b>14</b>	<b>17</b>	<b>2</b>	<b>33</b>

(\* fully integrated (VD) aluminium company.

The relationship between diversity and industrial sector is drawn in Table 5.10 where it is apparent that the consumer non-durables companies are more diversified than the consumer durables and capital goods companies. Low diversification is most common in the capital goods group.

### 5.8.6.2 DIVISIONALISATION STRUCTURE

Among the 33 respondents, 21 (64%) used single bases for setting their divisions, compared to 12 (36%) with multiple bases (Table 5.11). No distinction could be made between holding and non-holding companies with regard to divisionalisation. The 13 holding companies (HC) in the sample have the same bases of divisionalisation as non-holding companies. The existence of the transfer price mechanism in the HC is contrary to what is believed in theory that in these companies the executive board does not attempt to devise an overall enterprise strategy and there is no formal inter-divisional co-ordination- (Channon, 1982 and Johnson, 1985). However, the M-form company may act as HC because of “*a lack of detailed planning control by the headquarters organisation*” (Johnson, 1985), i.e. when the centre is not fulfilling its role of resource allocation between the divisions. The holding company structure of these companies may be viewed as a transition to full divisional structure (Channon, 1973 and Hannah, 1976).

TABLE 5.11 (QA2): DIVISIONALISATION STRUCTURE OF COMPANIES

BASES *	ALL **	SINGLE BASE	MULTIPLE BASE
DIVB1	27	15	MB1=B1+B3 3
DIVB2	4	1	MB2=B1+B4 4
DIVB3	8	1	MB3=B1+B2+B3 1
DIVB4	12	4	MB4=B1+B2+B4 1
			MB5=B1+B3+B4 2
			MB6=B1+B2+B3+B4 1
<b>TOTALS</b>	<b>51</b>	<b>21</b>	<b>12</b>

(\*) B1=product/service; B2=production process  
B3=region; B4=market

(\*\*) Number of times base is mentioned.

Table 5.11 reveals that the dominant divisionalisation base is product/service (DIVB1) used as a sole base in 15 (45%) companies or as part of a blend of bases in another 12 (36%) companies. The predominance of DIVB1 confirms the findings of an earlier study by Hill and Pickering (1986).

The remaining bases, especially production process (DIVB2) and region (DIVB3) are mostly used in combination with other bases. The two exceptions are an aluminium and a construction company which divisionalised on the single basis of production process and region respectively. The combination of (DIVB3) with other bases indicates that geographical dispersal - especially beyond national frontiers - complicates the co-ordination problem. Hence the search for a global strategy through a matrix or multi-base structure which combines both product and regional co-ordination (Channon, 1982). This results in functional and divisional decentralisation. This is the case of the three construction companies whose property development programmes are entrusted to area project managers.

It is also found that DIVB1 predominates in all companies regardless of their level of diversification. Table 5.12 shows that the two highly diversified companies prefer the single product/service base for their unrelated businesses. This base is also dominant in the low and diversified companies. Multiple bases are found only in companies with single (S), dominant (D) and related constrained (RC) businesses.

**TABLE 5.12: DIVERSIFICATION PATTERN VS. DIVISIONALISATION BASE**

DIVERSITY	DIVISION BASE		TOTAL
	SINGLE	MULTIPLE	
LOW	8 *	6	14
MEDIUM	11 **	6	17
HIGH	2 ***	-	2
<b>TOTAL</b>	<b>21</b>	<b>12</b>	<b>33</b>

(\* ) 5 with DIVB1; (\*\* ) 8 with DIVB1  
 (\*\*\*) both with DIVB1.

The single-base companies represent altogether 12 of the 14 industrial sectors (Table 5.13). Only two companies (glass and information systems) do not divisionalise on a single base. On the other hand the multiple-base companies represent 8 industries and 7 of these companies have a two-base divisional strategy (MB1 + MB2). Table 5.13 shows that industrial sectors 2 and 9 to 13 are represented solely by single-base companies. Previous studies on strategy and structure summarised by Hill (1984) concluded that diversity entails organisational changes in that companies move from functional structures to decentralised ones, namely multi-division structures.

Divisions are usually further split into business units which in turn consist of a number of profit centres. Consequently, responsibility is pushed down from the centre to divisional, business unit or profit centre levels.

All the participating companies consider their operating divisions as profit centres. Only two companies mentioned investment centres and both these companies have multiple-base divisions. Since investment centres are profit centres with additional responsibility for investments, it may be assumed that the “profit centre” concept is conveniently used by companies to designate investment centres. Anthony (1988) contends that this is common practice. Moreover, The widespread use of return on capital employed as a measure of divisional performance provides sufficient evidence to support this belief. This provides further evidence to refute Goetz’ (1967 and 1969) and Wells’ (1968) treatment of profit centres as fictions and mystical inventions. Moreover all 33 companies consider both short-run and long-run profit targets as high priority objectives.

TABLE 5.13 (QA1 & QA2): BASE OF DIVISIONALISATION BY INDUSTRY

INDUSTRY	SINGLE BASE •				MULTIPLE BASE ••						GRAND TOTAL		
	B1	B2	B3	B4	TOTAL	MB1	MB2	MB3	MB4	MB5		MB6	TOTAL
	1) AUTOMOTIVE PRODUCTS	1	-	-	-	1	-	-	-	1		-	-
2) BUILDING MATERIALS	2	-	-	-	2	-	-	-	-	-	-	-	2
3) CHEMICALS & PHARMACEUTICALS	4	-	-	1	5	-	1	-	-	-	-	1	6
4) CONSTRUCTION	-	-	1	-	1	1	1	-	-	-	-	2	3
5) ELECTRICAL & ELECTRONICS	1	-	-	1	2	-	1	-	-	-	1	2	4
6) FOOD, DRINK & TOBACCO	1	-	-	1	2	2	-	-	-	1	-	3	5
7) GLASS	-	-	-	-	-	-	-	1	-	-	-	1	1
8) INFORMATION SYSTEMS	-	-	-	-	-	-	1	-	-	-	-	1	1
9) INSTRUMENT ENGINEERING	2	-	-	-	2	-	-	-	-	-	-	-	2
10) METAL GOODS	1	-	-	-	1	-	-	-	-	-	-	-	1
11) MINING & METAL MANUFACTURE	-	1	-	-	1	-	-	-	-	-	-	-	1
12) MOTOR VEHICLES	1	-	-	-	1	-	-	-	-	-	-	-	1
13) PAPER, PRINTING & PUBLISHING	1	-	-	-	1	-	-	-	-	-	-	-	1
14) TEXTILES	1	-	-	1	2	-	-	-	-	1	-	1	3
<b>TOTAL</b>	<b>15</b>	<b>1</b>	<b>1</b>	<b>4</b>	<b>21</b>	<b>3</b>	<b>4</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>12</b>	<b>33</b>

(°) B1=Product/Service B2=Production process B3=Region B4=Markets served  
 (°°) MB1=B1+B3 MB2=B1+B4 MB3=B1+B2+B3 MB4=B1+B2+B4 MB5=B1+B3+B4 MB6=B1+B2+B3+B4

### 5.8.7 CORPORATE PRIORITY OF OBJECTIVES

Two major objectives were given top priority (a “Very High” tick) by the respondents (Table 5.14). These are long-run profit (CHPM2, 75%) and customer relationship (CHPM6, 61%). Second in importance (a “High” tick) were technological modernisation (CHPM7, 61%), short-run profit (CHPM1, 55%), increase in market share (CHPM4, 52%), new product development (CHPM5, 52%) and employment stability and welfare (CHPM8, 42%). This shows that, on the whole, the responding companies are essentially preoccupied with gaining competitive strength. The noticeable relationship in Table 5.15 between sales growth (CHPM3) and increase in market share (CHPM4) highlights this.

The absence of significant correlations between many of the objectives - and especially short-run profit - points to the possibility of conflict between them. Knowing that these are the “current high priority” objectives, it is probable that the lack of association between them results from a not very well defined pattern of priorities. Nonetheless, the observed pattern may be justified in the sense that, to remain profitable in the long term (CHPM2), the responding companies know well that a policy of continuous renewal (CHPM5, CHPM7) is critical. Therefore, the importance of profitability as a top priority objective lies in the ability of management to foresee future events and establish long-term objectives. Similarly, profitability is considered the fundamental priority because it conditions long-term objectives. New investments (CHPM5, CHPM7) depend on the financial flows that can be produced by satisfactory economic results.

TABLE 5.14 (QA4): CURRENT HIGH PRIORITY MANAGEMENT

C O R P O R A T E O B J E C T I V E S	D E G R E E O F P R I O R I T Y					M E A N $\bar{x}$	S T A N D A R D D E V I A T I O N	R A N K
	V E R Y H I G H (5)	H I G H (4)	N O T H I G H (3)	L O W (2)	V E R Y L O W (1)			
CHPM1-Short-run profit	10*	18	5	0	0	4.15	0.67	4
CHPM2-Long-run profit	25	8	0	0	0	4.76	0.44	1
CHPM3-Sales growth	6	12	15	0	0	3.73	0.76	7
CHPM4-Increase in market share	8	17	7	1	0	3.97	0.77	6
CHPM5-New product development	13	16	4	0	0	4.27	0.67	3
CHPM6-Customer relationship	20	12	1	0	0	4.57	0.56	2
CHPM7-Technological modernisation	9	20	3	1	0	4.12	0.69	5
CHPM8-Employment stability/welfare	2	13	13	4	1	3.33	0.89	8

(\*) number of respondents to question. Sample size is 33 companies.

TABLE 5.15: (QA4) SAMPLE CORRELATION COEFFICIENTS AMONG MANAGEMENT OBJECTIVES

C O R P O R A T E OBJECTIVES	CHPM1	CHPM2	CHPM3	CHPM4	CHPM5	CHPM6	CHPM7	CHPM8
CHPM1-Short-run profit	1.000							
CHPM2-Long-run profit	.2381 (.1821)	1.000						
CHPM3-Sales growth	.0839 (.6425)	-.1115 (.5368)	1.000					
CHPM4-Increase in market share	.1309 (.4678)	.0707 (.6960)	.7319* (.0000)	1.000				
CHPM5-New product development	-.2337 (.1906)	.2324 (.1931)	.1494 (.4065)	.2572 (.1484)	1.000			
CHPM6-Customer relationship	.1772 (.3239)	.2057 (.2508)	.0865 (.6321)	.1141 (.5274)	.2330 (.1920)	1.000		
CHPM7-Technological modernisation	.0938 (.6037)	.3062* (.0830)	.1822 (.3101)	.2402 (.1781)	.3268* (.0634)	.3759* (.0311)	1.000	
CHPM8-Employment stability	.3861* (.0265)	.1345 (.4555)	.2307 (.1965)	.3801* (.0291)	.0521 (.7734)	.2923* (.0988)	.4876* (.0040)	1.000

Sample size is 33 companies. Significance level in brackets. Levels below 5% are marked with (\*) and those between 5% and 10% are marked with (°).

### 5.8.8 DECISION-MAKING RESPONSIBILITY

Divisional managers were reported to have substantial decision-making responsibility over most of the decision items listed in the questionnaire (Table 5.16). A combined “very high” and “high” scores show that on average 80% of the companies claimed a high level of decision-making delegation to division managers. In particular, divisional managers were reported to be highly involved in budget setting (DMRS4) by all companies, and have high discretion (97%) on advertising and marketing (DMRS10) and recruiting or dismissing personnel (DMRS12). Divisional managers also play an important role on setting divisional objectives (DMRS1, 76%), investment decisions (DMRS2, 76%), make or buy decisions (DMRS5, 82%), setting transfer prices (DMRS7, 64%), external sourcing (DMRS9, 64%), bargaining (DMRS11, 67%) and paying staff. (DMRS13, 73%). Only 16 companies (48%) indicated that divisional managers have high discretion on setting divisional performance evaluation measures (DMRS3). This appears to contradict DMRS1 and the obvious explanation for the high score of DMRS1 are the reported high levels of participation in budget setting (DMRS4). However, the correlation analysis suggests that there is no significant association between DMRS1 and DMRS4 (Table 5.17). Therefore, it can be deduced that divisional managers have more discretion (or rather, influence) on decisions that are not directly related to their economic achievement. The more the decision directly affects the performance, the less discretion divisional managers have on the decision making process. Therefore the decision-making authority is more centralised when it relates directly to the performance measurement and reward system. As Table 5.16 reveals, the least divisional influence is on setting performance measures (DMRS3), transfer prices (DMRS7), joint-cost allocations (DMRS6) and altering transfer pricing policies (DMRS8).

TABLE 5.16 (QB1): DECISION-MAKING RESPONSIBILITY OF DIVISIONAL MANAGERS

D E C I S I O N S	DEGREE OF DISCRETION					MEAN $\bar{X}$	STANDARD DEVIATION	RANK
	VERY HIGH (5)	HIGH (4)	NOT HIGH (3)	LOW (2)	VERY LOW (1)			
DMRS1- Setting divisional objectives	6 <sup>o</sup>	19	8	0	0	3.94	0.66	5
DMRS2- Investment decisions	3	22	7	1	0	3.82	0.63	7
DMRS3- Setting performance evaluation measures	5	11	12	5	0	3.48	0.94	10
DMRS4- Participating in budget setting	18	15	0	0	0	4.54	0.50	1
DMRS5- Make or buy decisions	10	17	2	0	4	3.88	1.22	6
DMRS6- Joint cost allocation	3	13	10	4	3	3.27	1.09	12
DMRS7- Setting transfer prices	4	17	3	4	5	3.33	1.29	11
DMRS8- Reviewing and adjusting transfer prices	4	8	8	7	6	2.91	1.31	13
DMRS9- Buying externally items available internally	6	15	5	5	2	3.54	1.15	9
DMRS10-Advertising and marketing	15	17	1	0	0	4.42	0.56	3
DMRS11-Bargaining with other divisions	6	16	5	3	3	3.57	1.17	8
DMRS12-Recruiting and dismissing personnel	20	10	2	1	0	4.48	0.75	2
DMRS13-Paying personnel	14	12	5	2	0	4.15	0.90	4

(<sup>o</sup>) number of respondents to question. Sample size is 33 companies.

TABLE 5.17 (Q81): SAMPLE CORRELATION COEFFICIENTS AMONG DEGREES OF MANAGERIAL DISCRETION ON DECISIONS

D E C I S I O N S	DMRS1	DMRS2	DMRS3	DMRS4	DMRS5	DMRS6	DMRS7	DMRS8	DMRS9	DMRS10	DMRS11	DMRS12	DMRS13
DMRS1-Setting divisional objectives	1.000												
DMRS2-Investment decisions	.5705* (.0005)	1.000											
DMRS3-Performance evaluation measures	.2005 (.2632)	.0476 (.7925)	1.000										
DMRS4-Participating in budget setting	.1024 (.5708)	.0265 (.8835)	.3469* (.0480)	1.000									
DMRS5-Make of buy decisions	.3410* (.0521)	.4955* (.0034)	-.2200 (.2185)	-.0922 (.6098)	1.000								
DMRS6-Joint-cont allocation	.1101 (.5421)	.3872* (.0260)	-.2838 (.1095)	-.2201 (.2184)	.5396* (.0012)	1.000							
DMRS7-Setting transfer prices	.3553* (.0424)	.4954* (.0034)	.0172 (.9244)	-.0479 (.7914)	.5231* (.0018)	.3308* (.0600)	1.000						
DMRS8-Reviewing/adjusting transfer prices	.3200* (.0695)	.4310* (.0123)	.0116 (.9491)	.0301 (.8681)	.6008* (.0002)	.4533* (.0081)	.7959* (.0000)	1.000					
DMRS9-Buying externally	.1277 (.4787)	.2260 (.2061)	-.1370 (.4472)	-.0440 (.8077)	.2721 (.1255)	.1511 (.4014)	.2741 (.1227)	.3879* (.0257)	1.000				
DMRS10-Advertising and marketing	.2411 (.1766)	.2234 (.2115)	.1312 (.4666)	.3707* (.0337)	.2606 (.1430)	.1108 (.5393)	.2734 (.1237)	.2247 (.2087)	.0177 (.9223)	1.000			
DMRS11-Bargaining with other divisions	.1274 (.4797)	.3964* (.0224)	-.2895 (.1022)	-.2298 (.1982)	.5749* (.0005)	.3838* (.0274)	.7151* (.0000)	.7479* (.0000)	.4787* (.0048)	.0446 (.8053)	1.000		
DMRS12-Recruiting/dismis- sing personnel	.1866 (.2984)	.2547 (.1525)	.2750 (.1214)	.1042 (.5640)	-.0021 (.9909)	-.2400 (.1786)	.2137 (.2324)	.1726 (.3367)	.2622 (.1405)	.2371 (.1840)	.1336 (.4585)	1.000	
DMRS13-Paying personnel	.2255 (.2071)	.2667 (.1335)	.3517* (.0447)	.3598* (.0397)	-.0112 (.9509)	-.1372 (.4464)	.2495 (.1615)	.2495 (.1615)	.3689* (.0346)	.2387 (.1809)	.0036 (.9843)	.7119* (.0000)	1.000

Sample size is 33 companies. Significance level in brackets. Levels below 5% are marked with (\*) and those between 5% and 10% are marked with (°).

### **5.8.9 INTER-DIVISIONAL TRANSFERS AND PRICING POLICIES**

The magnitude of internal transfers for the typical trade differed from one company to another from as low as 2.5% to as high as 90% of total volume sales.

In 20 companies (61%) transfer prices are determined between divisions and in 8 cases (24%) consultation with top management is necessary. Companies reported a variety of pricing practices but it is noticed that market-based transfer prices are predominant. In most cases (70%), the dominant (market-oriented) transfer price was always used.

The dominance of a particular transfer pricing policy is mostly dictated by six criteria: pin-pointing divisional responsibility (CDTP5, 82%), performance evaluation (CDTP6, 82%), achievement of corporate goals (CDTP2, 79%), fairness and conflict resolution (CDTP4, 79%), maximisation of divisional autonomy (CDTP3, 67%), effects on economic decisions (CDTP8, 61%), better knowledge of market conditions (CDTP9, 52%) and simplicity and ease of implementation (CDTP1, 49%). The importance of these criteria is substantiated by the objectives assigned to the transfer pricing system in general. Companies reported high scores on performance evaluation (OBTP1, 76% and OBTP2, 70%), profit maximisation (OBTP3, 67%), divisional autonomy (OBTP4, 64%), managerial motivation (OBTP5, 67%) and market-drive (OBTP7, 55%).

The frequency of transfer pricing review varies between companies but in 23 (70%) of them the review is done on a periodical basis: monthly (FTRP1, 6%), quarterly (FTRP2, 15%), semi-annually (FTRP3, 18%) and annually (FTRP4, 30%). The remaining companies have casual revisions. The reasons given for reviewing transfer prices spread from “very high” to “very low” for all the 14 factors listed in the questionnaire (QF2). There was no particular high influence by any factor on the decision to review/adjust transfer prices. This section will be detailed in the next chapter.

### **5.8.10 PERFORMANCE EVALUATION AND REWARD**

Twenty seven companies (82%) measure and evaluate both the division's and the manager's performance on the same bases. Only 6 companies (18%) take into account noncontrollable factors that affect the performance of the divisional manager. Among the 12 measures listed in question QD3, five were reported predominant for the measurement of both divisions' results and managers' performance. These are absolute profits (PERM1, 70% and 67% respectively), adherence to budgets (PERM8, 70% and 67%), ratio of profits to total assets (PERM3, 61%), ratio of profits to sales (PERM4, 61% and 58%) and cash flow (PERM6, 55% and 45%). Managers' reactions to financial measures - as perceived by top management - vary from total satisfaction to different levels of manifest dissatisfaction.

Satisfactory performance is rewarded with bonuses (PRWD3) in 29 (88%) companies, by promotion (PRWD1) in 18 (55%) companies and by pay increase (PRWD2) in 16 companies (48%). Depending on the severity of unsatisfactory performance the divisional manager could be dismissed (PSCN1, 55%), transferred (PSCN2, 61%), advised/trained (PSCN3, 58%) or helped to overcome weaknesses and improve performance (PSCN4, 55%). More discussion of these points will follow in Chapter 7.

### **5.8.11 CONFLICT CAUSES AND SOLUTIONS**

All companies reported low levels of conflict and, apart from the importance of the internal transaction to the division (measured in volumes of transfers), no other factor seemed to have any causal relationship with internal conflict on transfer prices. As to conflict resolution, companies appear to favour negotiation and compromise to settle differences. Only in 9 (27%) companies is conflict resolved by corporate management alone. Full analysis of the crucial issue of conflict is covered in the next chapter.

### **5.8.12 GENERAL OBSERVATION**

All the companies that replied favourably to the survey showed keen interest in getting a feed-back report on the results of this research project. Some of the companies were also much concerned with the multinational aspects of transfer pricing; hence the opportunity for future research.

The five companies visited during and after the main survey provided further information, sometimes of a very confidential nature and expressed their readiness to assist whenever requested to do so. The information gathered before, during and after the interviews is presented in the form of case studies in Chapter 8.

The organisational analysis of the transfer pricing processes of the participating companies is presented in the next chapter.

## **CHAPTER 6: TRANSFER PRICING IN THE BRITISH CONTEXT**

This chapter describes and discusses British transfer pricing practice as reported by the participating companies. An interactive approach is adopted to establish the relationships between the transfer pricing system and company characteristics. Particular emphasis is placed on the behavioural dimensions of transfer pricing by examining the divisional manager's role in the transfer pricing process; and conflict potential and resolution in situations of joint responsibility.

All the 33 participating companies reported having inter-divisional transfers and internal pricing systems (TPS) to account for these transfers. The existence of transfers indicates that there is joint economic and financial responsibility in the British M-form company and that this responsibility is an essential element in the control systems. Similarly, the existence of TPS indicates that there is formal co-ordination of decentralised but interdependent responsibility centres and reflects the need for integration between organisational areas in a highly concentrated economy.

### **6.1 MAGNITUDE OF INTER-DIVISIONAL TRANSFERS**

The magnitude of internal trade as used in this chapter is measured in terms of both its importance - in volume terms - to the company as a whole and to the transferor and transferee divisions. The data are summarised from answers to sections QA1 and QB5 of the questionnaire.

#### **6.1.1 SIGNIFICANCE OF TRANSFERS TO COMPANY**

The volume of internal transfers varied from below 5% of total annual sales to 90% for the whole company. More than half of the respondents have transfers exceeding 10% of total company sales but less than a third have transfers over 20% (Table 6.1). This finding substantiates the results of the studies by Channon (1982), Luffman and Reed (1984) and Goold and Campbell (1987) that British companies are more and more

diversifying into unrelated markets. This considerably reduces the effects of vertical integration and hence, the small number of companies reporting significant levels of internal trade. High volumes of transfers are usually associated with high levels of vertical integration and particular industrial sectors as it will be seen in Sections 6.1.4, 6.1.5 and 6.1.6.

**TABLE 6.1 (QA1): MAGNITUDE OF INTER-DIVISIONAL TRANSFERS  
(AS A PERCENTAGE OF TOTAL COMPANY VOLUME SALES)**

RANGE	No.	%	CUMULATIVE	
			No.	%
Under 5%	6	18%	6	18 %
Between 5% to 10%	12	36%	18	54 %
Between 10% to 25%	7	21%	25	75 %
Between 25% to 50%	6	18%	31	93 %
Over 50%	2	6%	33	100 %*

(\*) percentage may not add up to totals because of rounding.

### 6.1.2 SIGNIFICANCE OF TRANSFERS TO DIVISIONS

A global look at Table 6.2 shows that internal transactions for the typical trade have similar significance to either the transferor or transferee division. Again it is only in highly vertically integrated companies, technologically sensitive companies and companies with speciality products with no intermediate market that the transfer accounts for more than 50% for the division.

**TABLE 6.2 (QB5): SIGNIFICANCE OF INTERNAL TRADE TO DIVISIONS**

DIVISION	% TRANSFERS					TOTAL
	<5%	5% to 10%	10% to 25%	25% to 50%	>50%	
TRANSFEROR	8	8	7	5	5	33
TRANSFEE	7	11	4	6	5	33

Chi-square test of homogeneity:  $X^2 = 1.45$  with 4 degrees of freedom and is not significant at the 5% to 10% levels.

### 6.1.3 COMPANY SIZE AND MAGNITUDE OF INTERNAL TRANSFERS

Despite the fact that the majority of companies are quite large, 18 companies (46%) have transfers of 10% or less and only 8 have more than 25 % (Table 6.1 above). This implies that there is no apparent association between the size of companies and the extent of internal trade. This is clear from the two contingency tables below.

**TABLE 6.3: INTERNAL TRADE VS. SIZE (TURNOVER)**

SIZE RANGE (TURNOVER)	% TRANSFERS					TOTAL
	<5%	5% to 10%	10% to 25%	25% to 50%	>50%	
Less than £ 100m	1	-	-	-	-	1
£ 100m - £ 250m	1	2	1	2	-	6
£ 250m - £ 500m	-	2	-	1	-	3
£ 500m - £ 1000m	-	5	2	-	1	8
£ 1000m - £ 2000m	2	1	2	2	1	8
£ 2000m - £ 4000m	2	1	1	1	-	5
over £ 4000m	-	1	1	-	-	2
TOTAL	6	12	7	6	2	33

For transfers less than 10% and more than 10% and size range less than £ 1000m and more than £ 1000m,  $X^2 = 0.23$  (with Yates correction) with one degree of freedom and is not significant at levels up to 10%.

The largest responding company (a multinational chemical company with over 127,000 employees world-wide and £ 12 billion turnover) had only 10% internal trade. The highest volumes of transfers of 80% and 90% were reported by an aluminium company and a tobacco company which employ 10,000 and 3000 people each and have respective turnovers of £ 700 and £ 500 million. The chemical company consists of highly decentralised subsidiaries whereas the aluminium company is highly vertically integrated such that the manufactured product flows downstream with each division adding value right from the mining of the raw material (bauxite) through to the distribution of the final products. Moreover, the aluminium company is a subsidiary of a foreign multinational which is one of the few that exercise complete monopoly on the aluminium market. The

**TABLE 6.4: INTERNAL TRADE VS. SIZE (CAPITAL EMPLOYED)**

SIZE RANGE (CAPITAL EMPLOYED)	% TRANSFERS					TOTAL
	5%	5% to 10%	10% to 25%	25% to 50%	>50%	
Less than £ 100m	2	2	1	3	-	8
£ 100m - £ 250m	-	4	-	-	-	4
£ 250m - £ 500m	-	3	1	-	1	5
£ 500m - £ 1000m	3	-	1	2	-	6
£ 1000m - £ 2000m	1	2	3	1	1	8
£ 2000m - £ 4000m	-	1	-	-	-	1
over £ 4000m	-	-	1	-	-	1
<b>TOTAL</b>	<b>6</b>	<b>12</b>	<b>7</b>	<b>6</b>	<b>2</b>	<b>33</b>

For transfers less than 10% and more than 10% and size range less than £ 1000m and more than £ 1000m,  $X^2 = 0.53$  (with Yates correction) with one degree of freedom and is not significant at levels up to 10%.

tobacco company - which has the highest level of internal trade of 90% in the sample - operates in a single product market and specialises in luxury consumer products which account for 38% of its annual turnover for which there is no intermediate market.

**Finding 1: Transfer pricing is more a question of organisation, strategy, business orientation and market position than of size.**

#### 6.1.4 INDUSTRIAL CATEGORY AND INTERNAL TRADE

Table 6.5 below shows that the highest volumes of transfers (over 25%) were reported by eight companies representing five industries. Five of these companies are chemicals-pharmaceuticals and electrical-electronics companies. All the other companies have less than 25 % transfers and represent a total of 12 industries.

**TABLE 6.5: VOLUME OF INTERNAL TRADE BY INDUSTRY**

INDUSTRY	NUMBER OF RESPONDENTS BY VOLUME OF TRANSFERS					TOTAL
	5%	5% to 10%	10% to 25%	25% to 50%	>50%	
1) AUTOMOTIVE PRODUCTS	-	-	2	-	-	2
2) BUILDING MATERIALS	-	2	-	-	-	2
3) CHEMICALS AND PHARMACEUTICALS	2	1	1	2	-	6
4) CONSTRUCTION & CIVIL ENGINEERING	-	2	1	-	-	3
5) ELECTRICAL ENGINEERING AND ELECTRONICS	1	-	-	3	-	4
6) FOOD, DRINK & TOBACCO	2	2	-	-	1	5
7) GLASS	-	-	1	-	-	1
8) INFORMATION SYSTEMS	-	-	-	1	-	1
9) INSTRUMENT ENGINEERING	-	2	-	-	-	2
10) METAL GOODS	-	-	1	-	-	1
11) MINING & METAL MANUFACTURE	-	-	-	-	1	1
12) MOTOR VEHICLES	1	-	-	-	-	1
13) PAPER, PRINTING AND PUBLISHING	-	1	-	-	-	1
14) TEXTILES	-	2	1	-	-	3
<b>TOTAL</b>	<b>6</b>	<b>12</b>	<b>7</b>	<b>6</b>	<b>2</b>	<b>33</b>

Some of the information contained in Table 6.5 should be treated with some reservation for possible bias. In particular it is surprising that the food companies reported very low levels of internal trade. Normally it should be expected that companies in this sector have high levels of vertical integration due to the nature of their business (easily perishable products) which requires continuous processing until the final product.

A similar case is the motor company with less than 5% transfers. This is, however, an exception to the rule due to a policy of minimum (lateral) vertical integration in this capital-intensive sector and reliance instead on the external market for the supply of vehicle components as this is customary in the British motor industry (Allen, 1970; Pickering, 1974; and Rhys, 1988). This was confirmed on the phone by the financial

**TABLE 6.6: INTERNAL TRANSFERS BY INDUSTRY GROUPING**

INDUSTRY GROUP	<5%	5% to 10%	10% to 25%	25% to 50%	>50%	TOTAL
<b>CAPITAL GOODS:</b>						
BUILDING MATERIALS	-	2	-	-	-	2
GLASS	-	-	1	-	-	1
PROPERTY DEVELOPMENT	-	2	1	-	-	3
CHEMICAL - INDUSTRIAL	2	1	1	-	-	4
ENGINEERING - metal manufacture	-	-	-	-	1	1
ENGINEERING - heavy	-	-	1	-	-	1
ENGINEERING - light	-	2	1	-	-	3
<b>TOTAL</b>	<b>2</b>	<b>7</b>	<b>5</b>	<b>-</b>	<b>1</b>	<b>15</b>
<b>CONSUMER DURABLES:</b>						
AUTOMOBILE	1	-	1	-	-	2
MANUFACTURE	1	-	-	4	-	5
ELECTRICAL/ELECTRONICS*	-	-	-	2	-	2
CHEMICAL - consumer						
<b>TOTAL</b>	<b>2</b>	<b>-</b>	<b>1</b>	<b>6</b>	<b>-</b>	<b>9</b>
<b>CONSUMER NON-DURABLES:</b>						
FOOD STUFFS	2	2	-	-	1	5
TEXTILES	-	2	1	-	-	3
PAPER/PACKING/PUBLISHING	-	1	-	-	-	1
<b>TOTAL</b>	<b>2</b>	<b>5</b>	<b>1</b>	<b>-</b>	<b>1</b>	<b>9</b>
<b>GRAND TOTAL</b>	<b>6</b>	<b>12</b>	<b>7</b>	<b>6</b>	<b>2</b>	<b>33</b>

(\* ) including information systems.  $X^2 = 5.93$  with 2 degrees of freedom and is significant at 0.10 level for transfers less than 10% and more than 10% for the three industry groups above.

controller who completed the questionnaire. Hence the use of negotiated adjusted market price by this car company for valuing the reported 4% typical internal trade which is likely to consist of speciality components. Nonetheless it should not be ruled out that the reliance on independent suppliers is a policy of survival because of a declining product life cycle in a fiercely competitive and vulnerable market dominated by foreign cars.

The relationship between industry and internal trade is further highlighted in the Table below where companies are classified into three industry groups: a) capital goods, b) consumer durables, and c) consumer non durables.

It is noteworthy that 13 of the 15 companies with transfers in excess of 10 % are from the capital goods and consumer durables groups. Moreover, 7 of the 8 companies with the highest volumes of transfers (over 25 %) are from these two groups as well; they are mainly the electrical/electronics and chemicals sectors. It is also interesting to note that, except for one, the companies in the electrical and electronics group have similar amounts of high internal trade (Table 6.7).

**TABLE 6.7: HIGHEST VOLUMES OF TRANSFERS**

<b>COMPANY</b>	<b>INDUSTRY</b>	<b>% transfers</b>
<b>A</b>	<b>ELECTRICAL/ELECTRONICS</b>	<b>33 %</b>
<b>B</b>	<b>ELECTRICAL/ELECTRONICS</b>	<b>40 %</b>
<b>C</b>	<b>ELECTRICAL/ELECTRONICS</b>	<b>40 %</b>
<b>D</b>	<b>ELECTRICAL/ELECTRONICS</b>	<b>40 %</b>
<b>E</b>	<b>CHEMICALS</b>	<b>40 %</b>
<b>F</b>	<b>PHARMACEUTICALS</b>	<b>50 %</b>
<b>G</b>	<b>ALUMINIUM</b>	<b>80 %</b>
<b>H</b>	<b>TOBACCO</b>	<b>90 %</b>

The high volumes of transfers observed above relate to high vertical integration only in the aluminium company. In the other companies - which also have some vertical integration or lateral integration - the high level of transfers results either from a

protectionist policy because of technological and volume intelligence (e.g. electrical and electronic companies) or because of speciality products with no intermediate markets (e.g. pharmaceuticals and tobacco companies).

The remaining 18 respondents have relatively low internal product flow (less than 10%) and, as can be seen from Table 6.6 above, most of these companies fall into the capital goods (construction and light industries) and consumer non-durables categories.

**Finding 2: the magnitude of internal transfers tends to depend on the type of industry or the business activity.**

A further explanation to the above conclusion can be gleaned from the pattern of diversification and divisionalisation structure of the companies.

**6.1.5 RELATIONSHIP BETWEEN DIVERSITY AND INTERNAL TRADE**

The table below illustrates the association between the pattern of diversification and the extent of internal trade.

**TABLE 6.8: INTERNAL TRANSFERS\* BY DEGREE OF DIVERSITY**

DIVERSIFICATION CATEGORY	5%	5% to 10%	10% to 25%	25% to 50%	>50%	TOTAL
LOW:						
S -single business	2	-	1	1	1	5
D -dominant market	1	2	2	1	-	6
VD-vertical dominant	-	2	-	-	1	3
<b>TOTAL</b>	<b>3</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>14</b>
MEDIUM:						
RC- related constrained	2	4	3	1	-	10
RL- related linked	-	3	1	3	-	7
<b>TOTAL</b>	<b>2</b>	<b>7</b>	<b>4</b>	<b>4</b>	<b>-</b>	<b>17</b>
HIGH:						
U -unrelated businesses	1	1	-	-	-	2
<b>GRAND TOTAL</b>	<b>6</b>	<b>12</b>	<b>7</b>	<b>6</b>	<b>2</b>	<b>33</b>

(\* ) in volume terms for the company as a whole.

The data above indicate that high volumes of transfers are associated with low and moderate diversity. The two companies with unrelated businesses have the least volumes of internal product/service transfers and this further shows that the more diversified the company the less the interdependence between its divisions. This implies that, if the actual diversification trend in British companies continues as is suggested in the literature (Channon, 1982, Luffman and Reed, 1984 and Goold and Campbell, 1987), this will result in a drastic reduction in the volume of inter-divisional trade as companies would move from the M-form to the conglomerate structure with disparate and autonomous activities.

#### **6.1.6 RELATIONSHIP BETWEEN DIVISIONALISATION STRUCTURE ON MAGNITUDE OF INTERNAL TRADE**

All the consumer durable companies described above set up their divisions either on product/service, markets served or a matrix of bases. However, the noticeable predominance of the product/service base (Chapter 5, Section 5.8.6) does not necessarily imply high levels of inter-divisional trade. Table 6.9 shows that half of the 12 companies with market-based divisions have transfers exceeding 25 % of total sales compared to only 19% of the 27 companies with product/service divisions.

Companies divisionalised on production process have technological interdependence between their divisions and this dictates the downstream flow to divisions as the product develops from one phase to another. This is particularly true if the production process is the sole base of divisionalisation as in the case of the aluminium company with 80% internal trade. The production process base suits the sequential processing of the raw material (bauxite) from the mining stage through to the finished aluminium products. In the three companies where the production process is used in combination with other bases, the volume of transfers is also significant.

**TABLE 6.9: (QA1 & QA2) DIVISIONALISATION BASE vs. INTERNAL TRADE  
(AS % OF TOTAL COMPANY VOLUME SALES)**

DIVISIONAL BASE	<5%	5% to 10%	10% to 25%	25% to 50%	>50%	TOTAL
DIVB1-PRODUCT/SERVICE	5	10	7	4	1	27
DIVB2- PRODUCTION PROCESS	-	-	2	1	1	4
DIVB3- REGION	1	2	3	1	1	9
DIVB4- MARKETS	2	2	2	5	1	12
<b>TOTAL</b>	<b>8</b>	<b>14</b>	<b>14</b>	<b>11</b>	<b>4</b>	<b>51*</b>

(\*) number of times base mentioned.

In contrast, most companies with region-based (or geographical) divisions have less than 25% transfers (Table 6.10).

The differences observed above derive from the effect of the divisionalisation structure in the large company on the pattern of information channelling which in turn affects the decision-making and problem-solving processes. For example, in a geographically decentralised company each plant reports to a regional office and solutions to problems are sought within the region of responsibility and not on an inter-regional basis (Gibson, 1973 and Watts, 1980). This explains the minimum internal flows of products and services between region-based divisions observed above. Moreover, management accounting systems also depend on the way the company is divisionalised. For example, job-order costing may identify more with DIVB1, DIVB3 and DIVB4 than with DIVB2 where process costing is more appropriate.

**TABLE 6.10: (QA1 & QA2) INTERNAL TRADE (AS % OF TOTAL COMPANY SALES) VS. SINGLE AND MULTIPLE BASES OF DIVISIONALISATION**

SINGLE BASE	<5%	5% to 10%	10% to 25%	25% to 50%	>50%	TOTAL
DIVB1	3	8	3	1	-	15
DIVB2	-	-	-	-	1	1
DIVB3	-	1	-	-	-	1
DIVB4	1	1	-	2	-	4
<b>TOTAL</b>	<b>4</b>	<b>10</b>	<b>3</b>	<b>3</b>	<b>1</b>	<b>21</b>
<b>MULTIPLE BASE</b>						
MB1B1+B3	1	1	1	-	-	3
MB2B1+B4	1	1	-	2	-	4
MB3B1+B2+B3	-	-	1	-	-	1
MB4B1+B2+B4	-	-	1	-	-	1
MB5B1+B3+B4	-	-	1	-	1	2
MB6B1+B2+B3+B4	-	-	-	1	-	1
<b>TOTAL</b>	<b>2</b>	<b>2</b>	<b>4</b>	<b>3</b>	<b>1</b>	<b>12</b>
<b>GRAND TOTAL</b>	<b>6</b>	<b>12</b>	<b>7</b>	<b>6</b>	<b>2</b>	<b>33</b>

For-single base firms and multiple-base firms with transfers less than 10% and more than 10%,  $X^2 = 2.21$  (with Yates correction) with one degree of freedom and is significant at 0.14 level (or at 0.06 level without correction).

**Finding 3: the degree of divisional interdependence, and thus the level of internal trade, depends on the degree of diversification and the divisionalisation structure of the company.**

## **6.2 TRANSFER PRICING POLICIES**

### **6.2.1 OBJECTIVES OF THE TRANSFER PRICING SYSTEM**

Companies were asked to rank eight possible objectives for their transfer pricing systems. The frequency distribution of the responses together with the ranked mean ratings are summarised in Table 6.11. The sample correlation coefficients among the eight objectives are reproduced in Table 6.12.

The priority given by companies to profit maximisation (OBTP3) substantiates the earlier finding (Chapter 5, Section 5.8.7) that long-run profit is the most important corporate objective pursued by the responding companies. This observation is logical given that transfer pricing in itself has been introduced to further the objectives of divisionalisation. It is therefore not surprising to find that the second major objective is performance evaluation (OBTP1) of divisions or the economic entities that comprise the divisionalised company.

Not less important a factor are the divisional managers whose motivation (OBTP5) determines their efficiency (OBTP2) but that is to the extent they have authority (or influence) on resources and decisions (OBTP4) that affect their performance. Table 6.12 shows that all the significant correlation coefficients are positive. Particularly strong relationships are found between OBTP1 (performance evaluation of divisions) and OBTP2 (performance evaluation of managers); OBTP4 (divisional autonomy) and OBTP5 (managerial autonomy); and OBTP6 (price-driven) and OBTP7 (market-driven).

TABLE 6.11 (QCB): OBJECTIVES OF THE TRANSFER PRICING SYSTEM

O B J E C T I V E S	D E G R E E O F D O M I N A N C E					M E A N $\bar{x}$	S T A N D A R D D E V I A T I O N	R A N K
	VERY HIGH (5)	HIGH (4)	NOT HIGH (3)	LOW (2)	VERY LOW (1)			
OBTP1-Performance evaluation of divisions	10*	16	1	3	3	3.82	1.23	2
OBTP2-Performance evaluation of managers	7	16	2	6	2	3.61	1.20	4
OBTP3-Profit maximisation in long term	11	11	7	2	2	3.82	1.16	1
OBTP4-Divisional autonomy	7	14	5	3	4	3.51	1.28	5
OBTP5-Managerial motivation	6	15	8	2	2	3.64	1.05	3
OBTP6-Price-driven	5	7	5	11	5	2.88	1.34	7
OBTP7-Market-driven	11	7	6	2	7	3.39	1.54	6
OBTP8-Resource allocation	2	9	8	7	7	2.76	1.25	8

(\*) number of respondents to question. Sample size is 33 companies.

TABLE 6.12 (QCB): SAMPLE CORRELATION COEFFICIENTS AMONG TRANSFER PRICING OBJECTIVES

O B J E C T I V E S	OBTP1	OBTP2	OBTP3	OBTP4	OBTP5	OBTP6	OBTP7	OBTP8
OBTP1-Performance evaluation of divisions	1.000							
OBTP2-Performance evaluation of managers	.8790* (.0000)	1.000						
OBTP3-Profit maximising in the long term	-.0238 (.8953)	.0369 (.8385)	1.000					
OBTP4-Divisional autonomy	.1403 (.4362)	.1572 (.3822)	.1286 (.4755)	1.000				
OBTP5-Managerial motivation	.3310* (.0599)	.3283* (.0622)	.1744 (.3318)	.6995* (.0000)	1.000			
OBTP6-Price-driven	.0240 (.8945)	.1056 (.5587)	.3880* (.0257)	.4207* (.0148)	.3875* (.0259)	1.000		
OBTP7-Market-driven	.0060 (.9737)	.1546 (.3903)	.1816 (.3117)	.4336* (.0117)	.4178* (.0155)	.7353* (.0000)	1.000	
OBTP8-Resource allocation	.1525 (.3969)	.2890 (.1029)	.2707 (.1276)	.1784 (.3207)	.4993* (.0031)	.3174* (.0719)	.3919* (.0241)	1.000

Sample size is 33 companies. Significance level in brackets. Levels below 5% are marked with (\*) and those between 5% and 10% are marked with (°).

## 6.2.2 COMPANIES' TRANSFER PRICING PRACTICES

Companies' transfer pricing practices are summarised in Table 6.13 which shows the predominance of market-based pricing. This confirms the results of previous studies (Chapter 4, Table 4.9). Therefore the participating companies can be classified according to their pricing policies into two groups:

- 1 - those encouraging competition between their divisions through the market-based transfer price and free access to the external market for the internal trade,
- 2 - those encouraging collaboration through negotiated prices and mandated cost prices.

**TABLE 6.13: (QC2 & QC3) TRANSFER PRICING METHODS**

METHOD	NO.	% = N/33
<b>MARKET-BASED:</b>	<b>26</b>	<b>78.8</b>
CURRENT MARKET PRICE	9	27.3
ADJUSTED MARKET PRICE	6	18.2
NEGOTIATED MARKET PRICE	11	33.3
<b>COST-BASED:</b>	<b>15</b>	<b>45.4</b>
STANDARD VARIABLE COST PLUS	2	6.1
STANDARD FULL COST	5*	15.1
STANDARD FULL COST PLUS	5	15.1
NEGOTIATED COST PRICES	3	9.1
<b>TOTAL</b>	<b>41**</b>	<b>-</b>

(\*) all from the group of 8 companies with the highest levels of transfers (Table 6.5)

(\*\*) six companies use more than one method and thus, in relative terms, the total exceeds 100%.

The predominance of market prices, together with the few cases of full cost plus profit margin and the negotiated cost prices, indicate that the transfers of goods and services are treated as purchase and sale transactions in many companies. Therefore, for many of the reported transfer prices it can be said that they are not "pseudo" transfer

prices that would serve for cost allocations only. Consequently, the profit centre concept is a practical issue in the British company, not a fictitious or mystical invention as was claimed by Goetz (1967 and 1969) and Wells (1968). Moreover, the use of a cost-based transfer price does not necessarily mean that a market price does not exist. Evidence will be provided later in Section 6.4.3 that the market price existed for some of the companies that reported cost-based transfer prices and recently reverted to market-based pricing.

In addition to this is the large number of companies (27 or 82%) which use single transfer prices. In 19 (57%) of these the transfer price is market-based. Only six companies reported multiple transfer prices. These companies did not specify whether the multiple prices relate to a single transfer or are different prices for different internal transactions. However, three of these companies indicated that they used to operate single cost pricing which they later found either difficult to administer or lacking the necessary motivational effect on divisional managers. Now they either supplemented the cost price with market price or changed to multiple market pricing. One of the six companies introduced negotiation in its existing multiple-cost pricing to cater for market conditions and to stop the transferor division manipulating the transferee division.

No company reported the use of marginal costing, dual pricing, two-part tariff price or mathematical programming techniques to derive optimal transfer prices. The preference of simplicity over sophistication was confirmed in the five field interviews conducted. The simplicity resides mostly in the availability of the market price for many of the companies and the availability of the internal cost data.

**Finding 4: British transfer pricing is profit conscious, market-oriented, and simplicity is preferred in determining the specific transfer prices.**

### 6.2.3 NEGOTIATED TRANSFER PRICES

Similar to the results of previous studies (Chapter 4) is the large proportion (34%) of negotiated transfer prices (Table 6.14). From answers to question QB1 divisions seem to enjoy moderate levels of freedom on bargaining with each other. In all but one case negotiation is based on the available market price.

**TABLE 6.14: NEGOTIATED TRANSFER PRICES (QA1 & QC2)**

COMPANY	INDUSTRY	VOLUME OF INTERNAL TRADE	PRICING BASE
1	FOOD	2.5%	MARKET
2	FOOD	< 5.0%	COST
3	FOOD	6.0%	MARKET
4	CHEMICALS	10.0%	MARKET
5	TEXTILE	15.0%	MARKET
6	GLASS	12.0%	MARKET
7	INSTRUMENT ENGINEERING	10.0%	MARKET
8	CONSTRUCTION	5.4%	MARKET
9	BUILDING MATERIALS	5.0%	MARKET
10	MOTOR VEHICLES	4.0%	MARKET
11	METAL GOODS	20.0%	MARKET
12	AUTOMOTIVE	20.0%	MARKET

The one exception is a food company which uses three cost pricing methods. The company - one of the largest in the U.K. - introduced negotiation to stop the transferor division manipulating the transfer price to boost its financial performance to the detriment of the buying division.

The more important finding here is that negotiation takes place only in companies with not more than 20% total internal trade. Negotiation is not mentioned in the eight companies with the highest volumes of transfers described earlier (Section 6.1.4, Table 6.7).

**Finding 5: transfer prices are negotiated ONLY in companies where the internal transaction is not very important.**

No apparent relationship was found between divisionalisation strategy and negotiation as half the twelve companies with negotiated prices have single-base divisions and the other half multiple-base divisions. The relationship between negotiation and other variables will be further highlighted in due course.

#### 6.2.4 TRANSFER PRICE VARIATION

The transfer price is the same for the same commodity when sold to different internal buyers in 18 companies and different in the remaining fifteen. The reasons given by the responding companies for such policies are summarised below in Table 6.15. For the companies that varied their pricing, market consciousness (RSTP3) was the major reason for doing so. The companies that had a uniform pricing policy were mainly concerned with encouraging internal trade (RSTP2) and consistency and comparability of the performance (RSTP4).

**TABLE 6.15: (QC5 AND QC6) REASONS FOR SAME OR VARIED PRICING FOR SAME TRANSFER TO DIFFERENT INTERNAL BUYERS**

REASONS	PRICING		
	SAME	NO	TOTAL
RSTP1 - because of additional costs	5	5	10
RSTP2 - to encourage internal trade	7	-	7
RSTP3 - depends on type of customer		10	10
RSTP4 - consistence & comparability	6	-	6
<b>TOTAL</b>	<b>18</b>	<b>15</b>	<b>33</b>
<b>%</b>	<b>54.5</b>	<b>45.5</b>	<b>100%</b>

It is also observed that in the 10 companies that varied their pricing policy depending “on the type of customer” (RSTP3) the transfer price is based on market and in nine of these it is negotiated as is evident in the Table below.

**TABLE 6.16: (QC2 & QC6) TRANSFER PRICE VARIATION VS. PRICING BASE**

PRICE	TRANSFER PRICING BASE			
	MARKET	COST	BOTH	TOTAL
SAME	10	8	-	18
DIFFERENT	10*	2	3	15
TOTAL	20	10	3	33

(\*) price is negotiated in 9 of these and the major motive for transfer price differentiation is market consciousness (RSTP3).

Except in two companies, when the transfer price is based purely on cost the same price for the same transfer commodity is charged to different internal buyers. The incurring of additional costs for selling to different internal buyers is the reason for transfer price variation in the two exceptions. Negotiation is mentioned in only two of the 18 companies with uniform pricing policies.

**Finding 6: the evidence from Tables 6.15 and 6.16 suggests that the transfer price for the same commodity when sold to different transferees is varied only in companies where the internal transaction is not important (i.e. the companies with negotiated market transfer prices).**

## **6.2.5 PREVALENCE OF PARTICULAR TRANSFER PRICING POLICIES**

### **6.2.5.1 FREQUENCY OF USING DOMINANT TRANSFER PRICING BASE.**

Replying to an open-ended question (QG2) on whether they considered their present transfer pricing systems efficient and satisfactory, 31 companies replied in the affirmative and the remaining two did not give any comment. This overall high level of apparent (corporate) satisfaction may explain the noticeable stability of the transfer pricing policies in operation as is detailed below.

The dominant transfer pricing base is very frequently used (FTPB1 & FTPB2) in 30 (91%) companies and in 19 of these the transfer price is market-based. It is evident that market-based prices have a longer term usage than cost-based prices. Only 3 companies reported using the transfer price as long as there was an external market (Table 6.17).

**TABLE 6.17: (QC2 AND QC4)  
TRANSFER PRICING BASE VS USAGE FREQUENCY**

FREQUENCY	PRICING BASE			
	MARKET	COST	BOTH	TOTAL
FTPB1-Always	16	6	1	23
FTPB2-Often	1	4	2	7
FTPB3-when external market exists	3	-	-	3
<b>TOTAL</b>	<b>20</b>	<b>10</b>	<b>3</b>	<b>33</b>

**Finding 7: It may therefore be deduced that the existence (or non-existence) of an external intermediate market affects the transfer price stability.**

#### **6.2.5.2 CRITERIA FOR THE PREVALENCE OF PARTICULAR TRANSFER PRICING POLICIES**

Companies were asked to rate nine criteria or determinants for the dominance of a particular transfer pricing policy (Table 6.18). All nine elements were found important but priority was given to five criteria: 1) evaluation of divisional performance (CDTP6), 2) pin-pointing divisional responsibility (CDTP5), 3) fairness and conflict resolution (CDTP4), 4) achievement of corporate goals (CDTP2), and 5) maximising divisional autonomy (CDTP3). Some significant correlations were also found between some of these criteria (Table 6.19). Simplicity and ease of implementation of the system was not an important criterion as no company reported the use of complicated pricing formulae. The

TABLE 6.18 (QC7): CRITERIA FOR THE DOMINANCE OF A PARTICULAR TRANSFER PRICING POLICY

C R I T E R I A	DEGREE OF IMPORTANCE					MEAN $\bar{X}$	STANDARD DEVIATION	RANK
	VERY HIGH (5)	HIGH (4)	NOT HIGH (3)	LOW (2)	VERY LOW (1)			
CDTP1 - Simplicity and ease of implementation	4 <sup>o</sup>	11	12	4	2	3.33	1.05	7
CDTP2 - Achieve corporate goals	6	20	5	2	0	3.91	0.76	4
CDTP3 - Maximise divisional autonomy	7	14	9	3	0	3.76	0.90	5
CDTP4 - Fairness and conflict resolution	6	22	4	1	0	4.00	0.66	3
CDTP5 - Pinpoint divisional responsibility	8	20	5	0	0	4.09	0.63	2
CDTP6 - Better performance evaluation	12	15	5	1	0	4.15	0.79	1
CDTP7 - Information economies	1	1	19	8	4	2.61	0.86	9
CDTP8 - Positive effects on economic decisions	7	13	10	3	0	3.73	0.91	6
CDTP9 - Better knowledge of market conditions	5	11	9	5	3	3.30	1.18	8

(<sup>o</sup>) number of respondents to question. Sample size is 33 companies.

TABLE 6.19 (QC7): SAMPLE CORRELATION COEFFICIENTS AMONG CRITERIA FOR DOMINANCE OF A PARTICULAR TRANSFER PRICING POLICY

C R I T E R I A	CDTP1	CDTP2	CDTP3	CDTP4	CDTP5	CDTP6	CDTP7	CDTP8	CDTP9
CDTP1-Simplicity & ease of implementation	1.000								
CDTP2-Achieve corporate goals	.0389 (.8299)	1.000							
CDTP3-Maximize divisional autonomy	-.2746 (.1219)	-.0329 (.8557)	1.000						
CDTP4-Fairness and conflict resolution	.0450 (.8038)	.0618 (.7328)	.1571 (.3827)	1.000					
CDTP5-Pinpoint divisional responsibility	-.3301* (.0606)	.2120 (.2363)	.3694* (.0344)	.0749 (.6786)	1.000				
CDTP6-Better performance evaluation	-.2867 (.1058)	.3315* (.0595)	.1399 (.4376)	.4752* (.0052)	.5324* (.0014)	1.000			
CDTP7-Information economies	.3213* (.0682)	-.0086 (.9621)	-.0462 (.7987)	.2188 (.2213)	-.2190 (.2207)	-.0923 (.6093)	1.000		
CDTP8-Positive effects on economic decisions	-.2286 (.2008)	.3221* (.0675)	.0311 (.8636)	.2075 (.2466)	.2077 (.2460)	.4039* (.0197)	.2166 (.2259)	1.000	
CDTP9-Better knowledge of market	-.2341 (.1897)	.1002 (.5789)	.1584 (.3785)	.0000 (1.000)	.1710 (.3414)	.1486 (.4090)	.3949* (.0230)	.4841* (.0043)	1.000

Sample size is 33 companies. Significance level in brackets. Levels below 5% are marked with (\*) and those between 5% and 10% are marked with (°).

priority of these criteria perfectly overlaps with the most important objectives assigned to the transfer pricing systems (Section 6.2.1.). It also adds substance to the fourth finding above that British transfer pricing is profit conscious and market oriented.

The dominance of market-based prices, their long-term stability and the predominance of the above five criteria reinforce the much acclaimed advantages of market-based pricing as reviewed in Chapter 2.

**Finding 8: when available, market prices seem ideal for decentralised profit responsibility and the acceptability of the transfer pricing system.**

### **6.3 LOCUS OF TRANSFER-PRICING DECISION-MAKING**

#### **6.3.1 EXTERNAL SOURCING DECISION**

The dominance of market-based transfer prices indicates that, for the majority of the companies, external markets exist for the commodities traded internally. However, it was previously stated that divisions do not have complete freedom on buying externally items available from within their own company (Chapter 5, Table 5.16). Among the 13 items listed in question QB1, divisional discretion on external procurement was ranked nine. Authority on this decision has significant impact on the entire transfer pricing system and the fairness of the divisional performance evaluation measures. These causal relationships are investigated below.

##### **6.3.1.1 CENTRAL APPROVAL AND TRANSFER PRICING BASE**

Approval for trading in the external intermediate market is required in 13 (39%) firms. Companies gave no reasons for centralising the sourcing decision. Research, however, suggests that the *“re-centralisation” of certain functions in the divisionalised company results from loss of economies of scale and reduction of synergies*” (Ansoff,

1984, p. 297). In terms of the Markets and Hierarchies approach (Williamson, 1975) the approval requirement in these 13 firms indicates a choice of hierarchies over markets for the transfer transactions.

The approval is always (APXS1) needed in 6 of the 13 firms; only when the transfer is significant (APXS2) in another six, and when the difference between the transfer price and the external price is large (APXS3) in one company. No such approval is needed (APXS4) in the other 20 (61%) companies. In 14 of these latter the transfer price is market-based (Table 6.20).

**TABLE 6.20: (QC2, QB2 & QB3) PRICING BASE vs. APPROVAL FOR EXTERNAL SOURCING**

CENTRAL APPROVAL FOR EXTERNAL SOURCING IS:	PRICING BASE			TOTAL	
	MARKET	COST	BOTH	NO.	%
APXS1-always required	1	5	-	6	18%
APXS2-only if transfer is significant	6	-	-	6	18%
APXS3-only if price difference is big	-	-	1	1	3%
APXS4-not required	13	5	2	20	61%
<b>TOTAL</b>	<b>20</b>	<b>5</b>	<b>2</b>	<b>33</b>	<b>100%</b>

In addition to this, four companies reported having regulations for the enforcement of buy/sell agreements. Three of these were among the 13 which require approval for external sourcing. Only one company from the 20 which do not require approval reported having arbitration by the main-board on this matter. This company operates in the civil engineering and construction sector. Inter-divisional transfers are in the form of sub-contract services supplied by one division to another, acting as main contractor.

**Finding 9: it can be concluded from the above analysis that the transfer price is generally cost-based when approval for external procurement is always required; and market-based when no approval is required or when the approval is only required if the transaction is important.**

### 6.3.1.2 CENTRAL APPROVAL AND NEGOTIATED PRICES

No approval for external sourcing is required in eight of the 12 companies with negotiated transfer prices (Sections 6.2.1 and 6.2.3). Approval is required in the remaining four companies but is always needed (APXS1) in only one of them and if the transaction is significant (APXS2) in the other three (Table 6.21). The one company that always requires central approval for trading in the intermediate market operates in the instrument engineering industry which involves highly sensitive technology.

**TABLE 6.21: (QB1, QB2 & QB3): CENTRAL APPROVAL FOR EXTERNAL SOURCING IN COMPANIES WITH NEGOTIATED TRANSFER PRICES.**

COMPANY	INDUSTRY	VOLUME OF INTERNAL TRADE	PRICING BASE	APPROVAL	
				----- YES	NO
1	FOOD	2.5%	MARKET		NO
2	FOOD	< 5.0%	COST		NO
3	FOOD	6.0%	MARKET		NO
4	CHEMICALS *	10.0%	MARKET	YES	
5	TEXTILE	15.0%	MARKET		NO
6	GLASS *	12.0%	MARKET	YES	
7	INSTRUMENT ** ENGINEERING	10.0%	MARKET	YES	
8	CONSTRUCTION	5.4%	MARKET		NO
9	BUILDING MATERIALS	5.0%	MARKET		NO
10	MOTOR VEHICLES	4.0%	MARKET		NO
11	METAL GOODS	20.0%	MARKET		NO
12	AUTOMOTIVE *	20.0%	MARKET	YES	NO

(\*) only if transaction is significant (APXS1)

(\*\*) approval always required (APXS2)

### 6.3.1.3 CENTRAL APPROVAL AND THE MAGNITUDE OF THE TYPICAL INTERNAL TRADE

It is also observed that the internal transaction does not have a high corporate significance in most of the 20 companies which do not require approval for external sourcing whereas the transfer accounts for more than 10% in 9 (69%) of the 13 companies that require central approval (Table 6.22). Thus, the behavioural implications in the latter should be expected to be considerable.

**TABLE 6.22 (QA1, QB2 & QB3): SIGNIFICANCE OF INTERNAL TRADE TO COMPANY VS. APPROVAL FOR EXTERNAL SOURCING.**

APPROVAL	% TRANSFERS						TOTAL
	<5%	5% to 10%	10% to 25%	25% to 50%	50% to 75%	>75%	
YES	2	2	4	1	3	1	13 *
NO	4	10	3	2	-	1	20
TOTAL	6	12	7	3	3	2	33

(\*) 5 of these are among the eight companies which reported the highest volumes of transfers (Section 6.1.4).

$X^2 = 3.43$  (with Yates correction) with 1 degree of freedom and significant at 0.063 level for transfers less than 10% and greater than 10%.

The same observation holds true as well for the significance of the typical transfer to the transferor divisions as is shown below.

**TABLE 6.23: (QB5, QB2 & QB3) SIGNIFICANCE OF INTERNAL TRADE TO TRANSFEROR DIVISION VS. APPROVAL FOR EXTERNAL SOURCING**

APPROVAL	% TRANSFERS						TOTAL
	<5%	5% to 10%	10% to 25%	25% to 50%	50% to 75%	> 75%	
YES	3	1	3	2	1	3	13
NO	5	7	4	3	-	1	20
TOTAL	8	8	7	5	1	4	33

For transfers less than 10% and greater than 10%  $X^2 = 1.65$  (with Yates correction) with 1 degree of freedom and is not significant at levels up to 10% (or significant at 0.10 without correction).

For the transferee division, the approval is not required for most high volume transfers (Table 6.24).

**TABLE 6.24: (QB5, QB2 & QB3) SIGNIFICANCE OF INTERNAL TRADE TO TRANSFEREE DIVISION VS. APPROVAL FOR EXTERNAL SOURCING**

APPROVAL	% TRANSFERS						TOTAL
	<5%	5% to 10%	10% to 25%	25% to 50%	50% to 75%	>75%	
YES	2	4	2	3	-	2	13
NO	5	7	2	3	2	1	20
TOTAL	7	11	4	6	2	3	33

For transfers less than 10% and greater than 10%:  $X^2 = 0.18$  (with Yates correction) with 1 degree of freedom and is not significant at levels up to 10%.

### 6.3.2 THE TRANSFER PRICING DECISION

Twenty one companies (64%) claimed that transfer prices were determined and reviewed by or between the divisions (TPSG3 and TPSG4). The transfer price is entirely centrally fixed (TPSG1) or through consultation of divisions (TPSG2) in the remaining 12 companies. When the transfer price is determined between the divisions (TPSG3) the volume of the transfer is always below 25% of total company sales, and it is likely that the price is negotiated, especially if it is based on market. Eleven of the 12 negotiation cases mentioned earlier (Section 6.2.3) identify with TPSG3 (Table 6.25).

**TABLE 6.25: (QC1 & QC2) PRICING DECISION VS. PRICING BASE**

LOCUS OF TRANSFER PRICING DECISION	PRICING BASE			
	MARKET	COST	BOTH	TOTAL
TPSG1-Top management	1	3	-	4
TPSG2-Top management and consultation of divisions	4 *	4	-	8
TPSG3-Between divisions	15 **	2 *	3 *	20
TPSG4-Selling division	-	1	-	1
<b>TOTAL</b>	<b>20</b>	<b>10</b>	<b>3</b>	<b>33</b>

(\*) one of these is negotiated transfer price.

(\*\*) nine of these are negotiated prices.

It was also found that top management intervenes in fixing the transfer price (TPSG1 and TPSG2) mostly when the volume of internal trade is quite high (over 25% of total sales).

Transfer prices are fixed solely by corporate management (TPSG1 or fully mandated) in only 4 companies. Three of these companies require approval for external sourcing and have cost-based transfer prices (Table 6.26). It may be presumed that central management also decides on the optimum amounts of commodities to be transferred in these four companies.

**TABLE 6.26: (QB2 & QC1) TRANSFER PRICING DECISION  
VS. APPROVAL FOR EXTERNAL SOURCING**

LOCUS OF TRANSFER PRICING DECISION	APPROVAL		
	YES	NO	TOTAL
TPSG1-Top management	3	1	4
TPSG2-Top management and consultation of divisions	4 *	4	8
TPSG3-Between divisions	5**	15 ***	20
TPSG4-Selling division	1	-	1
<b>TOTAL</b>	<b>13</b>	<b>20</b>	<b>33</b>

(\*) one of these is negotiated price.

(\*\*) three of these are negotiated prices.

(\*\*\*) eight of these are negotiated prices.

It is also worth noting that in the one company (electronics with 40% transfers) where the transfer price is decided by the selling division (TPSG4), it is cost-based and approval is required for trading in the intermediate market. It was later learnt in a field interview conducted in the company that this was a deliberate corporate policy because of technological and volume intelligence in a highly sensitive industrial sector. However, the company is now considering arm's length pricing as the imposed cost-pricing system and restrictions on external sourcing have led to internal conflict and problems in divisional performance evaluation.

In the eight companies where the transfer price is centrally fixed but through consultation of divisions (TPSG2), there is only one case of negotiation. It involves the glass company which, interestingly, has market-based divisions and transfer prices, and requires approval for external sourcing if the transaction is significant. In the remaining seven companies the price is cost-based if the trading in the external market was subject to central approval. This concerns three of the companies with the highest level of transfers. This tends to imply that the consultation of divisional managers over price determination in these seven companies is just for information, not for participative decision-making. This may be described as a one-way relationship whereby information

follows a top-down channel for decisions to be made and enforced by top management. This does not further the objectives of decentralised profit responsibility. Therefore the transfer price can be said to be centrally fixed.

Another point worth making here is that the central determination of the transfer price implies that central management has sufficient information about the revenue and cost functions of the divisions. This presumes that divisional managers report accurate and unbiased information about their operations to central management. Knowing that the transfer price affects divisional results - especially if the transfer is very important to the division - it is likely that divisional managers retain some information or bias the reported information because of the implications on performance evaluation and reward. This issue will be addressed in detail in the next chapter.

**Finding 10: When the transfer price is purely based on the existing market price, divisions are likely to have free access to that market, the transfer pricing decision is delegated to divisional managers and the transfer price is likely to be negotiated.**

**Finding 11: central intervention and inter-divisional coordination is associated with high levels of inter-divisional trade.**

## 6.4 TRANSFER PRICING CHANGE AND CONSEQUENCES

### 6.4.1 FREQUENCY OF REVIEW AND ADJUSTMENT OF TRANSFER PRICES.

In 25 companies the transfer price review is done on a periodical basis and in most of these it takes place every three to twelve months (Table 6.27).

**TABLE 6.27 (QF1) FREQUENCY OF TRANSFER PRICING REVIEW**

<b>FREQUENCY</b>	<b>NO.</b>
<b>PERIODICAL:</b>	<b>25</b>
MONTHLY (FTRP1)	2
QUARTERLY (FTRP2)	5
SEMI-ANNUALLY (FTRP3)	6
ANNUALLY (FTRP4)	10
WITH BUDGET (FTRP6)	2
<b>OCCASIONAL:</b>	<b>8</b>
DIVISIONS' REQUEST (FTRP5)	3
CORPORATE DECISION (FTRP7)	1
FOR EACH CONTRACT (FTRP8)	2
MARKET CHANGES (FTRP9)	2
<b>TOTAL</b>	<b>33</b>

(\* ) civil engineering and construction companies

The pattern of transfer pricing change observed above together with the companies' various transfer pricing practices (Section 6.2.2.) reinforce the belief that there is no generalised formula that can suit every situation.

#### **6.4.2 FACTORS INFLUENCING THE REVIEW AND ADJUSTMENT OF TRANSFER PRICES.**

There is no consensus among the participants on the effect of the factors listed in question QF2 on the need for revising transfer prices. However, a ranking of the mean ratings shows that factor FCTR2 (*changes in raw materials and labour costs*) plays the major role on transfer price adjustment (Table 6.28). This is followed by *budget cycle* (FCTR11), *structural and strategic changes* (FCTR1), *new product development* (FCTR9), *rates of inflation* (FCTR6) and *market changes* (FCTR14). The reevaluation of standard costs (FCTR3) is considered an important factor only in companies with standard cost-based transfer prices. The low rating scored by factor 13 (government regulations) is because there is not yet an enforcing transfer pricing legislation on domestic transfer pricing in the U.K.

The influence of the above factors on transfer pricing change indicate that just as the variables involved in the internal transactions change over time, transfer prices must be adapted to changing circumstances. Being a crucial element in the management information system (MIS) the transfer pricing system (TPS) needs, to fulfil its managerial role, not only the review of the direct factors like FCTR2 but also the internal rules governing the transfer pricing process.

What is noticeable, however, are the high positive correlations among the various factors that influence the transfer pricing change (Table 6.29).

TABLE 6.28 (QF2): FACTORS INFLUENCING THE REVIEW/ADJUSTMENT OF TRANSFER PRICES

F A C T O R S	DEGREE OF INFLUENCE					MEAN — X	STANDARD DEVIATION	RANK
	VERY HIGH (5)	HIGH (4)	NOT HIGH (3)	LOW (2)	VERY LOW (1)			
FCTR1- Reorganisation and changes in strategy	4 <sup>o</sup>	7	5	4	13	2.54	1.50	3
FCTR2- Changes in raw material and labour costs	4	11	5	5	8	2.94	1.41	1
FCTR3- Reevaluation of standard costs	2	7	8	4	12	2.48	1.35	8
FCTR4- Volume variances	1	3	10	9	10	2.27	1.09	10
FCTR5- Cost of capital	1	2	8	6	16	1.97	1.13	13
FCTR6- Rates of inflation	2	6	10	4	11	2.51	1.30	5
FCTR7- Level of competition	1	10	5	5	12	2.48	1.35	7
FCTR8- Fiscal year end	1	4	2	6	20	1.78	1.19	14
FCTR9- New product development	4	8	4	3	14	2.54	1.54	4
FCTR10-Technological conditions	3	4	6	5	15	2.24	1.39	11
FCTR11-Budget cycle	3	8	6	4	12	2.57	1.44	2
FCTR12-Development of operating plan	0	7	9	5	12	2.33	1.19	9
FCTR13-Government regulations	1	3	7	6	16	2.00	1.17	12
FCTR14-Market changes	6	5	5	1	16	2.51	1.64	6

(<sup>o</sup>) number of respondents to question. Sample size is 33 companies.

TABLE 6.29 (OF 2): SAMPLE CORRELATION COEFFICIENTS AMONG FACTORS INFLUENCING THE REVIEW AND ADJUSTMENT OF TRANSFER PRICES

F A C T O R S	FCTR1	FCTR2	FCTR3	FCTR4	FCTR5	FCTR6	FCTR7	FCTR8	FCTR9	FCTR10	FCTR11	FCTR12	FCTR13	FCTR14
FCTR1-Reorganisation and changes in strategy	1.000													
FCTR2-Changes in labour & raw material costs	.1633 (.3638)	1.000												
FCTR3-Reevaluation of standard costs	.4206 (.0148)	.7209 (.0000)	1.000											
FCTR4-Volume variances	.4378 (.0108)	.5954 (.0003)	.8154 (.0000)	1.000										
FCTR5-Cost of capital	.3043 (.0852)	.2920 (.0991)	.4194 (.0151)	.5353 (.0013)	1.000									
FCTR6-Rates of inflation	.2993 (.0906)	.5781 (.0004)	.7963 (.0000)	.7515 (.0000)	.5200 (.0019)	1.000								
FCTR7-Level of competition	.1584 (.3785)	.0323 (.8584)	-.0302 (.8676)	.1612 (.3702)	.5012 (.0030)	.2270 (.2040)	1.000							
FCTR8-Fiscal year end	-.0032 (.9860)	.3260 (.0641)	.4349 (.0114)	.2604 (.1432)	-.0744 (.6808)	.1531 (.3951)	-.1866 (.2985)	1.000						
FCTR9-New product development	.3126 (.0765)	.4744 (.0053)	.6496 (.0000)	.4815 (.0046)	.3141 (.0751)	.5869 (.0003)	.1392 (.4397)	.0988 (.5843)	1.000					
FCTR10-Technological conditions	.4727 (.0055)	.5159 (.0021)	.7838 (.0000)	.6710 (.0000)	.4808 (.0046)	.6012 (.0002)	.1018 (.5729)	.2765 (.1193)	.7655 (.0000)	1.000				
FCTR11-Budget cycle	.1830 (.3080)	.4488 (.0088)	.7059 (.0000)	.5909 (.0003)	.3186 (.0707)	.6216 (.0001)	.1417 (.4316)	.5659 (.0006)	.5869 (.0003)	.6621 (.0000)	1.000			
FCTR12-Development of operating plan	.1748 (.3305)	.2354 (.1873)	.4022 (.0203)	.3828 (.0279)	.3326 (.0586)	.4504 (.0085)	.3244 (.0655)	.6238 (.0001)	.2382 (.1819)	.2137 (.2325)	.5604 (.0007)	1.000		
FCTR13-Government regulations	.4614 (.0069)	.1886 (.2931)	.3358 (.0561)	.3885 (.0255)	.3062 (.0831)	.4299 (.0125)	.2766 (.1192)	.0223 (.9018)	.3454 (.0490)	.2488 (.1627)	.4266 (.0133)	.5150 (.0022)	1.000	
FCTR14-Market changes	.0472 (.7940)	.1890 (.2921)	-.0034 (.9849)	.1624 (.3665)	.2947 (.0960)	.1059 (.5575)	.3775 (.0303)	-.1499 (.4049)	.2434 (.1723)	.1077 (.5508)	-.0899 (.6187)	.2132 (.2335)	.1299 (.4713)	1.000

Sample size is 33 companies. Significance level in brackets. Levels below 5% are marked with (\*) and those between 5% and 10% are marked with (°).

### 6.4.3 AFTERMATH OF TRANSFER PRICING CHANGE

When asked about the resulting outcome of the review and adjustment of their transfer pricing policies, companies replies were as follows:

**TABLE 6.30 (QF3): RESULTS OF REVIEWING OR ADJUSTING TRANSFER PRICING POLICIES**

RESULT	NO.	%
RESL1-better efficiency of the transfer pricing system	10	30.3
RESL2-reduced conflict over transfer prices	14	42.4
RESL3-better control and performance evaluation	18	54.5
RESL4-optimal resource allocation	6	18.2
RESL5-improved fairness of the system	13	39.4
RESL6-led to goal congruence	11	33.3
RESL7-increased conflict	-	-
RESL8-increased dissatisfaction	-	-
RESL9-not applicable *	8	24.2

(\*) all with market-based transfer prices.

Eight companies claimed that the existing policies have been in operation for a long time, and as such, no significant change has taken place. In seven of these companies transfer prices are determined between the divisions and are market-based and the internal transaction is not significant. All seven companies claimed full satisfaction with their present TPS. One company was an exception. It is a subsidiary of a foreign electronics MNC; has a high volume of internal trade (33%); a centrally fixed adjusted market price and restrictions on external sourcing. This respondent made no comment as to whether the present TPS is efficient and satisfactory but hinted at the potential of conflict because of the impact of the TPS on divisional performance. Combining these elements suggests

TABLE 6.31 (QF3): SAMPLE CORRELATION COEFFICIENTS AMONG RESULTS OF TRANSFER PRICING CHANGE

R E S U L T S	RESL1	RESL2	RESL3	RESL4	RESL5	RESL6
RESL1-Better efficiency of the TPS	1.000					
RESL2-Reduction of conflict	.5013* (.0030)	1.000				
RESL3-Better performance evaluation	.4695* (.0058)	.5373* (.0013)	1.000			
RESL4-Optimal resource allocation	.2020 (.2595)	.2312 (.1954)	.2725 (.1249)	1.000		
RESL5-Improved fairness of the TPS	.4130* (.0169)	.6883* (.0000)	.3623* (.0382)	.2631 (.1390)	1.000	
RESL6-Led to goal congruence	.3240* (.0659)	1159 (.5208)	.4370* (.0110)	.1336 (.4585)	.2930* (.0980)	1.000

Sample size is 33 companies. Significance level in brackets. Significance levels below 5% are marked with (\*) and those between 5% and 10% are marked with (\*).

the possible lack of acceptability of the TPS by the divisions. Therefore changes may be needed, for example, removing restrictions on external sourcing and more divisional involvement in transfer price setting and review.

For the 25 companies that altered their transfer pricing policies, it appears that they were concerned with the impact of the transfer prices on divisional performance (RESL3), conflict over transfer prices (RESL2), fairness of the system (RESL5) and compatibility of corporate and divisional objectives (RESL6). There is obvious concordance between these results and the criteria for the dominance of particular pricing policies (Section 6.2.5.2). The correlation matrix (Table 6.31) shows very strong relationships between many of the results of the transfer pricing change, especially between the reduction of conflict (RESL1) and improved performance evaluation (RESL3) and improved fairness of the TPS (RESL5)

What can be deduced from the above finding is that prior to review and adjustment, the prevailing transfer pricing systems were not adequate for performance evaluation as they lacked fairness to the parties involved in the internal transaction and caused inter-divisional conflict. Similarly it can be predicted that whenever a company feels that its transfer pricing system is not fulfilling these main functions, it will very likely decide to alter it. One such case is the electronics company mentioned in Section 6.3.2 which is now in the process of changing from cost-based to market-based pricing. The main motives for this company's decision are competitive pressures, internal conflict reduction and better performance evaluation. The company is also distancing itself from serving the Government sector (defence) which usually requires detailed cost information of the purchased products. This move will facilitate the switch to market-based transfer prices for the consumer electronics and components lines of business that the company wants to concentrate on. Other examples are discussed below.

Four companies operating in different industries reported to have changed from cost-based to market-based transfer prices. The reasons given by these companies in response to question QG1 are reproduced in Table 6.32 (companies F, G, I and L). All four companies were concerned with having a transfer price that would reflect market

realities so that no party to the transfer transaction was put at a disadvantage. On the other hand, one company (E) added market-price to its existing cost-plus transfer price because of “*market pressures in relation to final product*”. Various other changes were operated by the remaining seven companies in Table 6.32. They include the abolition of arbitration and introduction of negotiation, the removal of the profit mark-up from the cost-based price to stop the transferor accumulating profits to the detriment of the transferee, and obsolescence of the transfer pricing system in the face of internal and external changes.

In sum, it can be concluded from Table 6.32 that the companies that have improved their transfer pricing policies did so because of either an administrative reason and/or a motivational purpose. Either factor plays a fundamental role on the effectiveness and efficiency of the transfer pricing system. In fact, the twelve companies in Table 6.32 believe that the changes they have operated on their pricing systems have yielded two main results: 1) reduction of conflict over transfer prices (RESL2) and 2) better control and performance evaluation (RESL3). This is particularly the case of companies that reversed from cost to market-based prices and companies that removed the profit mark-up from the cost-based price to stop manipulation.

The reasons and the results of changing or adjusting the TPS in many of the companies cited above provide sufficient evidence that these companies were concerned with more than mere technicalities. The changes operated reflect the complex and interactive nature of transfer pricing. Stated otherwise, given the inextricable factors that affect and are affected by the transfer pricing system (TPS), transfer pricing requires careful strategic consideration in the divisionalised company.

**Finding 12: without constant monitoring to provide for changing circumstances transfer pricing systems can always result in both overt and dormant problems which affect the acceptance of the TPS.**

TABLE 6.32 (OO1): SUMMARY OF REASONS FOR AND RESULTS OF CHANGING/IMPROVING PREVIOUS TRANSFER PRICING SYSTEMS

COMPANY	INDUSTRY	% Transfer	PRICING POLICY		REASONS GIVEN FOR CHANGING TRANSFER PRICING POLICIES	RESULTS *
			OLD	NEW		
A	CHEMICALS	10%	MARKET	NEGOTIATED MARKET	Central arbitration abolished, forcing divisional managers to agree among themselves.	RESL9
B	CHEMICALS	<5%	SFC + *	SFC	Stock values included unrealized profits.	RESL2
C	CHEMICALS	5%	MARKET	MARKET	Moved from centrally fixed to divisionally fixed as divisional managers lacked control over their costs so total budgeting/responsibility was at risk.	RESL1, RESL2 RESL3, RESL4 RESL5, RESL6
D	CHEMICALS	< 5%	M.G. *	MARKET & COST PLUS	An outdated system that was difficult to understand and administer.	RESL1, RESL2 RESL3, RESL5
E	AUTOMOTIVE PRODUCTS	20%	COST +	COST PLUS & MARKET	Market pressures in relation to final product.	RESL2, RESL3 RESL4, RESL5 RESL6
F	AUTOMOTIVE PRODUCTS	12%	SFC +	MARKET & ADJUSTED	Old system did not encourage supplier to cut costs, the purchaser was at a disadvantage if he could buy cheaper elsewhere. The supplier (transferor) has now to compete with market prices or lose the order.	RESL1, RESL2 RESL3
G	MOTOR VHCLS	4%	COST	MARKET	Because old system ignored market realities.	RESL6
H	FOOD	< 5%	COST	NEGOTIATED COST	Old system allowed no room for negotiation with regard to market conditions. In some cases the producing division was making substantial profits on transfer business but there was no financial benefit in the business for the selling division (transferee)	RESL1, RESL3 RESL6
I	FOOD	5%	COST	MARKET	Old system ignored market realities	RESL2, RESL3 RESL5
J	TOBACCO	90%	SVC *	SFC	Growth of business and capacity excesses required precise definitions and better knowledge of market.	RESL2, RESL3 RESL5
K	ELECTRONICS	40%	SFC +	SFC	We used to operate at cost plus a mark-up to recover development cost. The mark-up became a vehicle to achieve desired margins (i.e. manipulated), and to give marketing messages. This resulted in pricing to customers being cost-based rather than market based. It was felt that better commercial decisions would be made based on 'real' transfer prices	RESL1, RESL2 RESL3, RESL4 RESL5, RESL6
L	GLASS	12%	COST	MARKET	Now added value products are more realistically priced and independent processors are not at a disadvantage with regard to market conditions.	RESL1, RESL2 RESL3, RESL5 RESL6

(\*) SFC-Standard Full Cost. SVC-Standard Variable Cost. + = mark-up. M.G.-Not Given as in Table 6.30 & 6.31

In the light of all the previous findings it becomes clear that this conclusion is only the confirmation of hypothesis five formulated in different words:

**Hypothesis Five:** *Changes in organisational structure and strategy result in changes (or need for change) in transfer pricing policies.*

#### **6.4.4 DIVISIONAL ROLE IN TRANSFER PRICING POLICY CHANGE**

In Section 6.3.2 it was observed that transfer prices were determined and reviewed between divisions without central intervention in 20 (61%) companies. Divisions also had a consultative role in price determination and change in another eight companies, but this role was more supplying information to the corporate office rather than a sign of divisional authority on the transfer pricing decision.

The dichotomy between price fixing and divisional authority is confirmed by an earlier result on corporate attitudes towards the decision-making responsibility of divisional managers (Chapter 5, Section 5.8.8). On comparing the different levels of discretion that divisional managers were reported to have on various decisions it was found that they exercised the least authority on the determination of transfer prices and much less on their revision and adjustment. This is particularly true in cases where the transfer transaction is very important to the company.

Obviously some companies cannot be expected to adhere to the arguments advanced in Section 6.3.2 given the sensitivity of the transfer pricing issue. In fact when replying to a further question (QG5) on whether divisional managers could re-negotiate transfer prices because of significant changes (as in QF2), 26 (79%) companies simply said *yes*, 2 companies (with 80% and 90% transfers) insisted on *central intervention*, and 5 companies gave no answer. This means that companies claimed that negotiation over transfer pricing would more than double its present level of 34% (see Section 6.2.3). This also implies that central intervention would decrease drastically. Justification may be

found for those companies already operating market and negotiated prices and those companies that have changed their policies for the better (Table 6.28) but not for all the 26 companies that responded by the affirmative.

The contingency approach applied so far to the analysis of British transfer pricing practice suggests otherwise. The 26 companies above (in QG5) include many of those firms with centrally fixed prices and sourcing decisions. Therefore it can be envisaged, other things being equal, that corporate attitudes towards divisional authority on transfer price changes will, in many companies, follow a different pattern from that outlined by the answers to question QG5. Many reasons support this belief. First, the preponderance of the profit objective in a highly concentrated economy; second, the low level of discretion that divisional managers have on decisions that directly affect their economic performance; and third, the centralised transfer price determination and the required approval for external sourcing in over one third of the companies. These reasons are further highlighted in the discussion of conflict over transfer prices.

## **6.5 CONFLICT OVER TRANSFER PRICING**

### **6.5.1 CAUSES OF CONFLICT**

In general, companies reported very low levels of conflict over transfer pricing. The summarised information contained in Table 6.33 may be interpreted in two quite different ways. It is either giving a fair picture of reality or companies deliberately pretended having negligible internal conflict. However, in the light of the analysis of the rest of the questionnaire sections, it appears that to some extent the first interpretation can be subscribed to. Nevertheless, since this critical issue has not yet received enough attention in the management control research, it deserves further in-depth investigation, probably on a case-study basis involving selected companies.

The reported low levels of conflict seem to be justified as most companies have market-based transfers, divisionally fixed prices, do not require approval for external sourcing and expressed great satisfaction with their present TPS. This rules out a general

TABLE 6.33 (QE1): CAUSES OF CONFLICT OVER TRANSFER PRICING

C A U S E S	POTENTIAL OF CONFLICT					MEAN $\bar{X}$	STANDARD DEVIATION	RANK
	VERY HIGH (5)	HIGH HIGH (4)	NOT HIGH (3)	LOW (2)	VERY LOW (1)			
CSFC1- General dissatisfaction with the transfer pricing system	0*	1	4	12	16	1.69	0.81	8
CSFC2- Centralisation of transfer pricing policy making	0	2	9	9	13	2.00	0.97	5
CSFC3- Lack of trust between divisions	0	2	10	9	12	2.06	0.96	4
CSFC4- Restricted information flow	0	2	3	9	19	1.63	0.89	9
CSFC5- Lack of fairness of the system	1	1	3	15	13	1.85	0.94	6
CSFC6- Negotiation of transfer prices	1	6	9	8	9	2.45	1.38	3
CSFC7- Impact of the transfer pricing system on divisional profits	4	8	7	5	9	2.79	1.41	2
CSFC8- Importance of the transferred commodity to the division	4	9	7	4	9	2.85	1.42	1
CSFC9- External market does not exist	0	3	3	4	23	1.57	1.00	10
CSFC10- External market exists but trading in it is restricted	0	5	0	8	20	1.69	1.05	7

(\*) number of respondents to question. Sample size is 33 companies.

TABLE 6.34 (QEI): SAMPLE CORRELATION COEFFICIENTS AMONG CAUSES OF CONFLICT OVER TRANSFER PRICING

CAUSES OF CONFLICT	CSFC1	CSFC2	CSFC3	CSFC4	CSFC5	CSFC6	CSFC7	CSFC8	CSFC9	CSFC10
CSFC1-General dissatis- faction with system	1.000									
CSFC2-Centralisation of T.P. system	.3987* (.0215)	1.000								
CSFC3-Lack of trust between divisions	.5436* (.0011)	.5010* (.0030)	1.000							
CSFC4-Restricted infor- mation flow	.4901* (.0038)	.1803 (.3154)	.6405* (.0001)	1.000						
CSFC5-Lack of fairness of the T.P. system	.6774* (.0000)	.5497* (.0009)	.6989* (.0000)	.6385* (.0001)	1.000					
CSFC6-Negotiation of transfer prices	.4122* (.0172)	.3571* (.0414)	.3603* (.0394)	.2809 (.1133)	.2059 (.2504)	1.000				
CSFC7-Impact on divisio- nal profits	.4899* (.0038)	.4124* (.0171)	-.4918* (.0037)	.2839 (.1094)	.6361* (.0001)	.2866 (.1059)	1.000			
CSFC8-Importance of tran- sfer to division	.6126* (.0002)	.5239* (.0018)	.4862* (.0041)	.3987* (.0215)	.5457* (.0010)	.4744* (.0053)	.8288* (.0000)	1.000		
CSFC9-External market does not exist	.4535* (.0080)	.1612 (.3701)	.2859 (.1068)	.4503* (.0086)	.3948* (.0230)	.1957 (.2752)	.3996* (.0212)	.4380* (.0108)	1.000	
CSFC10-Restrictions on external market	.3581* (.0408)	.6306* (.0001)	.2289 (.2002)	.1093 (.5450)	.4173* (.0157)	.4094* (.0180)	.2039 (.2551)	.2767 (.1190)	.2767 (.7778)	1.000

Sample size is 33 companies. Significance level in brackets. Levels below 5% are marked with (\*) and those between 5% and 10% are marked with (°).

rejection of the TPS (CSFC1). Therefore, any significant levels of conflict should only be present in companies which do not satisfy these requirements, i.e., companies with cost-based prices, centrally fixed prices, and those requiring approval for trading in the external intermediate market. Surprisingly, however, restrictions on external sourcing (CSFC10) are not considered an important cause of conflict. This may be interpreted as follows. The restrictions on external sourcing are part of corporate policy as a response to market imperfections (quality problems, unreliability of supply, incompleteness of price, etc.) or as a protectionist policy in some companies due to sensitivity. In any case, the restrictions on external sourcing seem to be accepted at divisional levels. In other words, it has become part of company culture, thus the reported low level of conflict.

The “*non-existence of an intermediate market*” (CSFC9) is almost disregarded as a potential source of conflict. Obviously the dominance of market-based transfers imply that the existence of markets is taken for granted. Corporate management also discards CSFC4 (restricted information flow) as a source of conflict. This may be explained by one of the following reasons:

- 1 - the predominance of the market price and accessibility of market information,
- 2 - the TPS is part of a well designed management information system which ensures good communication,
- 3 - this is only a corporate view that does not rule out information asymmetry. The correlation Table shows some strong association between CSFC4 and CSFC5 (lack of fairness of the TPS), CSFC8 (importance of transfer to division) and CSFC9 (non-existence of external market).

Most companies agree on three elements as being the prime causes of conflict. These are (in ranking order): 1) the importance of the transfer commodity to the division (CSFC8), 2) the impact of the transfer pricing system on divisional profits (CSFC7), and 3) negotiation of transfer prices (CSFC6). Table 6.34 shows an almost perfect positive

correlation between CSFC7 and CSFC8. With regard to CSFC6 companies only mentioned the existence (or non-existence) of negotiation but not the rules of the bargaining process and which of these rules is the major source of disagreement. Therefore, negotiation is treated here in general terms as a potential conflict factor. Nevertheless, the importance of the above three elements (CSFC6, CSFC7 and CSFC8) substantiates the claims advanced in theoretical models about the factors that cause organisational conflict (for instance Pondy, 1967 and Walton and Dutton, 1969). Mainly interdependence (or mutual task dependence) and goal incompatibility lead to different levels of conflict. In other words, the observed potential of conflict of these three factors implies that there is more inter-divisional conflict than centre-division conflict. In the context of separated ownership and control - which characterises the sample companies - this implies that divisional managers seem to pursue their own interests (or expectations) to quite a considerable extent when their performance is at stake. This is supported by the earlier finding that British transfer pricing is profit conscious and profit is the prime corporate objective. Conflict in the M-form company is, therefore, characterised by the heterogeneity of goals which leads to heterogeneity of decisions, or what is called by the behaviorists as “*bounded rationality*”. Further evidence on this issue is left to the next chapter where the conflict potential of the performance evaluation and incentive schemes is discussed using agency theory as a framework of analysis.

### **6.5.2 IMPACT OF TRANSFER PRICING CHANGE ON LEVEL OF CONFLICT**

It was earlier found (Section 6.2.5.2) that fairness and conflict resolution (CDTP4) were the third most important factor for the prevalence of particular transfer pricing policies. A complementary result was arrived at in Section 6.4.3 as in more than 40% of the participating companies the review and adjustment of transfer prices resulted in reduced internal conflict (RELS2). Among these latter are eight of the twelve companies which disclosed the specific changes operated on their previous TPS and the reasons for doing so (Table 6.32). As stated earlier, the reduction of conflict implies that the TPS is at present acceptable to the parties involved in the transfer transaction. The linkage between transfer price change and conflict resolution implies two things:

- 1) the TPS can be both a source of conflict and one of the mechanisms for resolving it provided the TPS is well designed to suit the particular organisational context and regularly monitored to accommodate changing circumstances,
- 2) conflict is not necessarily dysfunctional as it stimulates the need to change for the better and, thus, it is part of a dynamic process. In the foregoing examples conflict has led to altering previously inefficient TPS and this has resulted in reducing conflict.

The mutual relationship between transfer price change and conflict resolution can contribute to equilibrium between incompatible goals in the divisionalised company. This desirable effect is well reflected in the cases summarised in Table 6.32 (Section 6.4.3) where it is evident that the greater control that divisions now enjoy in some of the companies did not lead to more conflict as is traditionally believed in the literature (for example March and Simon, 1958). It also refutes the theory that interdepartmental conflict is best reduced by reducing the size of task dependence (Pondy, 1967 and Walton and Dutton, 1969).

**Finding 13: The examples above show that interdependence can be geared towards the benefit of the parties involved just by turning conflict into a functional element through necessary and timely corrective actions.**

### 6.5.3 CONFLICT RESOLUTION PROCEDURES

Despite the reported low levels of conflict over transfer pricing, conflict resolution procedures were found in 28 companies (Table 6.35). This may suggest that in many companies conflict is for the moment just felt or perceived but not yet fully manifest and many of the resolution procedures reported may be more preventive than curative as these companies have experienced conflict in the past.

The rest of the companies claimed the question was irrelevant because 1) of insignificant levels of conflict (3 companies); or 2) because there was conflict but disputes were discouraged and not allowed (1 company); or 3) no particular formal resolution procedure existed (1 company). Only one of these five exceptions has a substantial amount of internal trade (40% of total sales). The major causes of conflict in this electronics company are the restrictions on trading in the external intermediate market and an imposed cost-based uniform transfer price. It was previously mentioned that this particular company is reverting to market-based pricing because of the conflict generated by the actual system.

TABLE 6.35 (QE2) CONFLICT RESOLUTION PROCEDURES

RESOLUTION PROCEDURES	TOTAL *	USED SOLELY
CFRS1-by corporate management alone	10	6
CFRS2-divisions ask for revision of transfer prices	7	1
CFRS3-discuss the differences openly so as to reach a compromise	14	9
CFRS4-disregard the differences and emphasise common interests	5	2
CFRS5-opt for mutual concessions to settle differences	3	-
CFRS6-each division tries to "win" conflict for itself	2	1
CFRS7-disputes not allowed at all	1	-
CFRS8-no resolution procedures exist	1	-
CFRS9-not applicable	3	-

(\*) number of times procedure is mentioned.

The above resolution procedures can be classified according to the framework suggested by Arnold and Feldman (1986) into: 1) avoidance procedures (CFRS1, CFRS7, CFRS8, CFRS9), 2) defusion procedures (CFRS4), 3) containment procedures (CFRS3, CFRS5), and 4) confrontation procedures (CFRS2, CFRS6).

Conflict is resolved by means of a single procedure in 19 of the 28 companies and by a combination of methods in the remaining 9 companies. In nine (CFRS3) of the 19 companies with single procedures there is a noticeable emphasis on containing the conflict (i.e. encouraging collaboration) whereas in another six conflict is resolved by corporate management alone (CFRS1) which reflects a policy of conflict avoidance. In these six cases one of the following factors is present: 1) the internal trade is very significant, 2) a centrally fixed transfer price, and 3) restrictions on external sourcing. One of these factors is also present in 8 of the 9 companies with multiple procedures. The central resolution of conflict raises the question as to whether this will not lead to further conflict, given the restrictions on divisional autonomy.

In all the companies where the restrictions are eased, the most favoured procedure for resolving conflict is, as mentioned above, through dialogue or mutual problem solving (CFRS3). Moreover, in all these companies the transfer price is market-based (13 companies) and negotiated if it is cost-based (company H in Table 6.32). This result complements Conclusion Eight (Section 6.2.5.2) that *“when available, market prices are ideal for decentralised profit responsibility and the acceptability of the TPS”*.

A point worth making from the above observations is that no company gave details about the elements involved in the resolution procedures in operations. Given the importance of the following three factors on conflict: CSFC7 (impact of the transfer pricing system on divisional profits), CSFC8 (importance of the transferred commodity to the division) and CSFC6 (negotiation of transfer prices), it is surprising that no company made any hint at using these factors for conflict resolution. For example, given the critical effect of factors CSFC7 and CSFC8 on conflict, a change in the profit sharing ratio and a revision of the profit performance measure could play a major role in conflict resolution. Future research could shed more light on this. Areas worth investigating are the amount

of managerial time consumed in resolving conflict, the financial cost and the opportunity costs involved, the specific procedure of resolution (for example, changing personnel, changing structure, expanding resources, revising transfer prices and so on).

## **6.6 OVERVIEW OF THE RESULTS.**

Transfer pricing is part of the management process in the British divisionalised company regardless of the level of internal trade. The level of internal trade is not dependent on the size of the company but is influenced by the pattern of diversification and the divisionalisation structure. High volumes of transfers are also associated with certain industry sectors like electronics, aluminium, tobacco and pharmaceuticals.

Companies' transfer pricing practice shows preference for market-oriented pricing and simplicity in determining the specific prices. The transfer price is negotiated only in companies with not very significant internal transactions. These companies vary their transfer prices to different internal buyers for the same commodity. No approval is required for external sourcing in most of these companies.

The priority objective assigned to the TPS is profit maximisation which is served by two other objectives, performance evaluation and managerial motivation. Similarly, the dominance of a particular transfer pricing policy is dictated by five major factors: 1) evaluation of divisional performance, 2) pin-pointing divisional responsibility, 3) fairness and conflict resolution, 4) achievement of corporate goals and 5) maximising divisional autonomy.

Restrictions on external sourcing of the intermediate commodity and mandated transfer prices were found associated with high levels of internal trade and sensitive technology. On the contrary when the transfer transaction is not very significant, the transfer price is negotiated and the transfer pricing decision is delegated to divisional managers.

In most companies transfer prices are reviewed on a periodical basis because of changes in the cost of raw materials and labour, technological conditions, new product

development, market changes and structural and strategic changes. This indicates that to be efficient, a transfer pricing system should not be static but has to be updated according to changing circumstances. The transfer pricing change that took place in some companies was reported to have resulted in better control and performance evaluation, reduced conflict, and improved fairness.

Although companies reported low levels of conflict, it remains that factors CSFC7 (the impact of transfer prices on divisional profits) and CSFC8 (the importance of the transfer commodity to the division) are the major predictors of conflict over transfer pricing. The existence of conflict was not found to be necessarily dysfunctional as it has in many cases led to improving existing systems. In general, companies opt for dialogue and mutual concessions for resolving conflict. The logical analysis applied to the summarised data has so far led to the confirmation of Hypothesis Five that “*changes in organisational structure and strategy result in changes (or need for change) in transfer pricing policies*”. Further analysis is provided in the next two chapters to test the validity of the remaining four hypotheses. Chapter 7 extends the analysis of the managerial implications of the TPS by explicitly focussing on divisional performance evaluation, incentive schemes and the agency relationships.

## CHAPTER 7: PERFORMANCE MEASUREMENT, EVALUATION AND REWARD, AGENCY RELATIONSHIPS AND INTER-DIVISIONAL TRANSFERS IN THE DECENTRALISED BRITISH COMPANY.

This chapter examines the performance evaluation and reward schemes of the responding companies and uses agency theory as a framework of analysis of interdependent relationships.

The delegation of authority and responsibility in the decentralised company cannot yield the desired levels of efficiency and effectiveness in turning inputs into outputs without the monitoring of the delegatee's achievement through the use of a sound performance measurement, evaluation and reward system (PMERS). This implies that the performance has to be expressed in numeric terms or quantified. Traditionally, the quantifier is a monetary measure based on accounting reports. Since the PMERS is obviously not cost free, its efficiency depends on its design.

The adequacy of the performance quantifier in the decentralised company - and hence, its fairness and acceptability to managers - depends on its consistency with the levels of authority and responsibility in the divisions. The control process in the divisionalised company - of which the PMERS is an integral part - exists in a human and social context because it is the process through which *“management channels the behaviour and performance of individual managers and sub-units, making certain actions desirable and likely, while effectively ruling out other undesirable actions”* (Lebas and Weigenstein, 1986, p. 259). This is because the measures of performance comprised in the PMERS contain implicit value judgements and assume knowledge of what they evaluate, i.e., some desired decision-making behaviour is expected from the decentralised manager (Merchant, 1985a, Magee, 1986 and Kaplan and Atkinson, 1989). Therefore, the design of an effective PMERS initially requires answers to a number of inter-related issues (Caplan, 1971, Pursell, 1980 and Magee, 1986):

- 1) what performance measures should be used,
- 2) how many measures should be used,
- 3) where should these measures apply: that is what variables to measure, and
- 4) how does the incentive scheme depend on these variables?

Taking these questions into account a clear distinction was drawn in the questionnaire (Section D) between the measurement of the division's performance and the manager's performance. This distinction is adapted from the literature on divisional control which stresses the need to segregate the influence of non-controllable factors (for example, head office expenses, geographical location, difficult circumstances, etc.) on managerial performance measurement and reflect the impact of the "human assets" on the performance. The rationale for this is that performance evaluation cannot be expected to achieve the desired motivational impact on divisional managers if the latter are judged on the basis of non-controllable factors, especially if the effect of these factors on divisional results is not taken into account when deciding on the reward and punishment policies.

For the present sample of 33 companies, profit responsibility was found predominant (Chapter 5, Sections 5.8.6 and 5.8.7). As all companies consider their operating divisions as profit centres - and therefore, encourage competition between divisions - this defines the centre- division authority relationship and the system of performance measurement and rewards (or the Management Control System, MCS). This chapter summarises the findings on companies performance evaluation and reward schemes and draws the agency relationships in the light of the findings in the previous two chapters.

## 7.1 PERFORMANCE MEASUREMENT POLICIES

The following pattern of ex-post monitoring was observed from answers to section D of the questionnaire: 1) the use of (formal) multiple performance measures, 2) the dominance of profits, cash flows and formula-based financial measures in evaluating performance, 3) the exclusion of the cost of capital from the profit measures, 4) a budget-related measurement system, and the 5) evaluation of both divisions and managers on the same basis (Table 7.1).

**TABLE 7.1 (QD3) PERFORMANCE EVALUATION MEASURES \***

PERFORMANCE MEASURE ACRONYM		DIVISION		MANAGER	
		No.	%	No.	%
ABSOLUTE PROFITS	(PERM1)	23	70%	22	67%
RATIO OF PROFITS/EQUITY	(PERM2)	9	27%	9	27%
RATIO OF PROFITS/TOTAL ASSETS	(PERM3)	22	67%	20	61%
RATIO OF PROFITS/SALES	(PERM4)	20	61%	20	61%
RESIDUAL INCOME	(PERM5)	-	-	-	-
COST PERFORMANCE	(PERM6)	5	15%	6	18%
CASH FLOW	(PERM7)	20	61%	19	58%
SALES GROWTH RATE	(PERM8)	8	24%	7	21%
ADHERENCE TO BUDGETS	(PERM9)	23	70%	22	67%
PRODUCT INNOVATION	(PERM10)	7	21%	7	21%
MARKET DEVELOPMENT	(PERM11)	8	24%	8	24%
EARNINGS PER SHARE (E.P.S.)	(PERM12)	3	9%	3	9%
PRODUCT QUALITY	(PERM13)	1	3%	1	3%
DEBTORS LEVELS	(PERM14)	1	3%	1	3%
STOCK TURNOVER	(PERM15)	1	3%	1	3%
DEPENDS on nature of business	(PERM16)	1	3%	1	3%

(\*) due to length considerations no particular definition was made in the questionnaire for any of the listed performance parameters. No question was asked about the asset base in PERM3.

(\*\*) PERM3, PERM9 & PERM12 used as single measures by three companies for both the division's and the manager's performance. The remaining 30 companies use a combination of two to eight measures.

### **7.1.1 FORMALITY AND MULTIPLICITY OF PERFORMANCE MEASURES**

The sheer size and diversity of the responding companies is indicative of the necessity for multiple formal performance standards. Formality is dictated by practicability (Merchant, 1984) and multiplicity is necessary because any selected single measure in the large company is bound to give an incomplete picture of performance. It is virtually impossible for a single financial measure to include all, or most, of the variables that affect the success of a division and its manager.

The versatile performance measurement systems summarised in Table 7.1 reflect a number of the characteristics of the responding companies described in the two previous chapters, namely company size, diversification patterns, priority of objectives and multiplicity of transfer pricing policies. Only three companies reported single performance measures whereas, on average, 70% of the respondents use a combination of three to six profitability measures.

### **7.1.2 PROFIT AND CASH FLOW PERFORMANCE MEASURES AND THE SHORT-TERM PERSPECTIVE.**

Divisions are accountable for both their contribution to their companies' net income and for the annual returns on their allocated assets. The dominance of the profit measure is concordant with the companies' answers to questions QA3 (classification of divisions) and QA4 (management priorities or business strategy). It has already been stated that all companies consider their divisions as profit centres. Among the eight objectives listed in question QA4, long-run profit (CHPM2) scored the highest mean of 4.75 and the lowest standard deviation of 0.43 (Chapter 5, Section 5.8.7). Short-term profit was ranked the fourth major objective with a mean of 4.15. It was also found that profit maximisation was the major objective assigned to the transfer pricing system (Chapter 6, Section 6.2.1).

Moreover, it was earlier found (Chapter 6, Table 6.29) that the two major sources of conflict over transfer pricing were 1) the impact of the transfer pricing system on divisional profits and 2) the importance of the transferred commodity to the division. Since the market price is the dominant pricing base and long-term profitability is the

prime corporate objective, the spirit of competition is encouraged in most companies and is assumed to lead to profit maximisation. Hence, the widespread use of absolute profits or accounting based income (PERM1), used in conjunction with all the other measures, particularly with PERM3, PERM4, PERM7 and PERM9. This also indicates that performance measurement is mostly expressed in financial terms and, given that the Accounting Information System (AIS) is the principal information source, it can be concluded that companies' MCSs rely heavily on accounting data for appraising divisional performance.

The question that poses itself here is whether the accounting performance measures (or APM; Hirst, 1983 and Kren and Liao, 1988) can accurately assess all the contributing factors to the firm's (priority) objectives in a decentralised but interdependent environment? By the same token, do divisional managers necessarily accept their performance to be measured by accounting techniques? Previous research suggests otherwise. For instance, Hopwood (1972, pp. 157-158 and 174) noted that

“not all the relevant dimensions of managerial performance are included in accounting reports since neither accountants nor managers have developed comprehensive measures and standards. The accounting data are primarily concerned with representing outcomes, while managerial activity is concerned with the detailed process giving rise to the final outcomes. If there are factors which constrain the reported efficiency of the process despite the quality of the manager's performance, the accounting data will be an inadequate reflection of his performance. [Thus], although accounting data are often the most important formal source of information in an organization ... they are usually incomplete and even biased indicators of managerial performance”.

Similar arguments to Hopwood's about the ineffectiveness of indiscriminate use of accounting information as a performance measure were put forth by Solomons (1965), Caplan (1971), Parker (1979), Hirst (1981 and 1983), Pratt and Zeckhauser (1985), Parker et al. (1986) and Amigoni (1989). These conclusions are indirectly supported by the managerial response to financial measures of performance as contained later in Section 7.2.2.

Table 7.1 above also reveals the importance attached to four other performance indicators (PERM3, PERM4, PERM7 and PERM9). While residual income (PERM5) does not seem to be popular, return on investment (PERM3) and the profit percentage on sales value (PERM4) are calculated by 20 (61%) of the participating companies. The importance of these measures to the respondents lessens the disadvantages associated with absolute profits as a sole measure of performance. It is also observed that budgets (PERM9) play an important role in performance appraisal as two thirds of the companies compare divisional achievements to predetermined targets.

The one company that did not specify its performance policy (PERM16) is a construction company whose core business is contract-based and has market-oriented transfer prices. A telephone conversation with the respondent revealed that profit ratios and cash flow are used as performance parameters depending on the nature of the business. For example, if a division “*uses a lot of funds*” i.e. is capital intensive, an ROI measure is applied. Market conditions are also taken into account as some divisions could be operating in depressed areas. In fact, most of the profit achievements of this company come from the South-East of England.

The use of the profit ratio PERM2 (return on equity) and especially the extensive use of PERM3 (return on total assets or ROI, return on investment), PERM7 (cash flow) and PERM9 (budgets) is clear evidence that investment centres exist in practically every responding company. The ROI measure which relates profits to the level of divisional investment presumes that a) some measure of the division’s investment base is possible and b) the divisional manager exerts considerable influence on the investment base. This supports the conclusion made earlier (Chapter 5, Section 5.8.6.2) that the respondents labelled their responsibility centres “profit centres” merely for convenience since investment centres are also held accountable for profit.

### 7.1.3 RESIDUAL INCOME OR THE EXCLUSION OF THE COST OF CAPITAL

No company reported using residual income (PERM5), much acclaimed in theory (for instance Solomons, 1965, Tomkins, 1973, 1975a, 1975b and Mephram, 1980). One possible reason for the exclusion of PERM5 is because no definition of the terms 'residual income' was given in the questionnaire to make the notion of cost of capital explicit. However, companies' answers to a previous question (QF2) showed that the cost of capital does not have a significant impact on the review and adjustment of transfer prices (Chapter 6 Table 6.26). Except for two companies with cost-based transfers, no particular difference was observed between the companies in this respect. However, Pratten (1986) argues that when transfer prices are based on cost, interest charges and a profit margin have to be included if transfer prices are to reflect total costs of production.

Nonetheless, when examining companies' replies to question QB1 (Chapter 5, Table 5.15) one finds that 25 (76%) of the respondents claimed that divisional managers have high levels of discretion on investment decisions. This satisfies the controllability criterion required by the advocates of residual income as a measure of divisional performance so that divisional managers are aware of the cost of finance when making their decisions. In other words, if divisional managers exert control over the amount of capital invested in their ventures, interest on capital should be included in divisional profit measurement to ensure efficient use of capital resources. This is particularly important if managers' compensation is tied to profits knowing that interest on debt finance adds to the expenses of the accounting period. Therefore, the exclusion of PERM5 does not seem justified since divisional managers were reported by the respondents to enjoy high levels of discretion over investment decisions. If this hypothesis is adhered to, it would imply that companies' replies to question QB1 are biased in that divisional managers may not have the claimed autonomy over capital investment. This conclusion tallies with the arguments against the inclusion of a charge for interest on capital employed when divisional autonomy is curtailed (for instance Amey, 1969 and 1975, Samuels, 1969 and Bromwich, 1973).

On the other hand, it may also be deduced that residual income is generally not a popular performance measure. This second hypothesis seems relatively more plausible in the light of evidence from previous studies conducted by Mauriel and Anthony (U.S.A., 1966), Tomkins (U.K., 1973), Reece and Cool (U.S.A., 1978) and Scapens and Sale (U.S.A. and U.K., 1981). All reported a limited use of residual income. Of particular importance is the finding by Scapens and Sale on capital expenditure as in 83% of 173 responding companies divisional managers were allowed to spend on individual projects but up to certain limits or ceilings. The mean capital expenditure limit of companies studied was £104,000. Furthermore, in 86% of the companies, divisions did not have authority to raise finance externally. A recent survey by Pratten (1986) balances the arguments above. Pratten found that two thirds of U.K.-based private companies did charge interest to their operating businesses, provided the latter were enjoying substantial degrees of discretion over decisions.

#### **7.1.4 DIVISION VS. MANAGER AND THE UNIFORMITY OF THE PERFORMANCE MEASURE**

Twenty seven (82%) of the respondents evaluate both divisions (or economic viability) and managers' performance on the same (profit) basis. In other words, only six (18%) companies seem to take into account non-controllable factors when appraising and sanctioning managerial performance. According to responsibility accounting, this indicates that the majority of companies hold divisional managers accountable for expenses over which they do not have control or which are not directly traceable to their particular divisions. A possible reason for judging the division's and the manager's performance with the same standard is the difficulty to translate the latter in numerical terms and the difficulty of disaggregating performance. However, divisional interdependence raises the question of controllability, traceability and equity (Miller, 1982). The existence of internal trade in the sample companies implies that the achieved performance may in fact be the outcome of joint efforts of many participants within the company, sometimes using common resources. Therefore, the observed performance measures can be considered as surrogate variables or imperfect measures of outcome (Banker et al, 1988) of the actual manager's performance.

A second plausible reason is that, even when the manager is said to have some discretion over a decision, it is likely that the decision is affected by factors outside his authority. In other words, the divisional manager may not exercise full authority over decisions but only influences them in a semi or pseudo-autonomous environment. Therefore, the issue of controllability remains a problem of performance measurement in the decentralised company because of the failure - deliberate or otherwise - to encompass the intervening factors, especially the human factor, in judging the achievement of the divisional manager (Likert, 1958).

Nonetheless, the controllability criterion is rejected by some writers on managerial control for at least the following three reasons (Merchant, 1987). First, divisional managers who are held accountable for outcomes which they do not fully control will be motivated not to avoid bearing risk in decision taking. The second reason advanced is to make managers realise the effect of their decisions on areas outside their control. The third argument discards controllability to enable relative or peer performance evaluation of managers operating in similar environments.

However, the above arguments are based on broad assumptions whose applicability should be assessed in terms of the specific performance indicators comprised in the PMERS. This leads to another explanation - and probably the most plausible - for the uniformity of the PMERS of the participating companies, that is, the emphasis on short-term fixed period returns as reflected in the companies' major performance measures (PERM1, PERM3, PERM4, PERM9). Managerial performance cannot always be assessed on a short-term basis as a manager's effort may only come to fruition in a couple of years time, i.e. it is of a long-term nature. *“Accounting techniques cannot accurately assess many contributors to a firm's long-term profitability, such as reputation for quality, condition of equipment or research accomplishments”* (Pratt and Zeckhauser, 1985, p. 10). Therefore the noticeable lack of long-term performance measures tends to imply that managerial effort is not properly observed and assessed and, as a consequence, one can expect managers to resist the way their performance is evaluated and rewarded. Further discussion of this point will be found in Section 7.2.2.

## **7.2 BUDGET-RELATED PERFORMANCE AND EX-POST MONITORING**

### **7.2.1 PROFIT OBJECTIVES, DIVISIONAL ACCOUNTABILITY, PARTICIPATION AND BUDGET GOALS**

The extensive use of profit ratios (ROI, ROS) requires the pre-setting of targets against which actual achievements are compared. Cross-divisional comparisons cannot always be conclusive because of the inherent differences between divisions in terms of the nature and profitability of activities, the age and efficiency of the production equipment and differences in market competition in their geographic areas. Therefore the ratios are more useful for time-series analysis for individual companies. The necessity of comprehensive budgetary planning and control systems for the large divisionalised company is profusely discussed in the accounting literature. A budget is defined as

“an ex-ante statement, generally determined by negotiation and approved by management, of the resource inflows and outflows expected during the budget period [and] thus is an explicit outlining of expectations between superior and subordinate” (Simons, 1988, p. 266).

For the majority of the participating companies, the preparation and monitoring of budgets is primordial in the control of the operating divisions.

The observed emphasis on profit performance fosters a competitive spirit and this may inhibit the desired levels of co-operation among interdependent profit centres. Divisions may be tempted to promote short-term perspectives that hamper the long-run interests of the company. Since a ratio expresses a relationship between two variables, this may induce managers to try to maintain (or reduce) the denominator of the profit ratio to the minimum in order to report an impressive result that will affect the rewards. For instance, a divisional manager may forego the opportunity to invest in a long-term project just to keep an ROI ratio high in the short term. This sort of manipulative behaviour may be lessened by evaluating performance against pre-determined targets or budgeted results. Hence, the purpose of control is to secure conformity with prescribed rules (or standards), to correct deviations from those rules and to assign responsibility for the deviations.

Compliance with the budget depends on 1) the extent to which divisional managers are involved in setting the budget targets and 2) the degree of tightness of the targets, or goal difficulty. The reported high levels of participation in budget-setting is supported by previous research (for instance, Bruns and Waterhouse, 1975, and Merchant, 1981). It implies extensive delegation of authority and responsibility and decisions are made at the divisional level by informed managers. This offsets the impact of budgets as instruments constraining managers' behaviour in that participation should be expected to lead to the acceptability of the budget by divisional managers. Consequently, this is likely to curtail the likelihood of information impactedness as participative budgeting should motivate towards incorporating divisional private information in the budget. Brownell (1982) found that a budget-related evaluation style was most effective under conditions of high participation and ineffective where participation was low.

On the other hand, budget goal difficulty has been extensively researched elsewhere (for example, Merchant, 1981 and 1985b, and Simons, 1988) and is reflected in the managerial response to the performance measures as discussed below.

#### **7.2.2 MANAGERIAL RESPONSE ATTITUDES TO FINANCIAL MEASURES OF PERFORMANCE.**

Since budgets are control devices they are an important source of learning and discovery, and their behavioural dimension - in terms of their impact on human relationships in the organisation - has long been recognized in the literature (for instance Argyris, 1952 and 1953, Hopwood, 1973 and Parker et al., 1986).

Corporate perceptions of divisional managers' response to companies' APM are reproduced in Table 7.2 and 7.3 and can be grouped into 1) the positive response attitudes or desirable behaviour (DMRC8, assuming unbiased corporate views) and 2) the negative response attitudes or undesirable behaviour (DMRC1 to DMRC7) which undermine the effectiveness of the MCS.

The first group of response attitudes is represented by a total of twelve companies which found question QD5 not relevant (item DMRC8) and as such did not report any particular managerial reaction to the performance measures. All but one gave their reasons for the irrelevance of the question.

It is clear from the information grouped in Table 7.2 below that the majority of these twelve companies have very low levels of internal trade, i.e. minimal task interdependence or “*pooled interdependence*” (Thompson, 1967) or “*low task uncertainty*” in the words of Hirst (1981 and 1983). Transfer prices are basically market-based and determined by the divisions (TPSG3) without interference from top management. Except for companies F and K, the TPS does not seem to have a significant impact on divisional results and as such does not represent a potential source of conflict. It is also noticed that in both company F and K, the transfer price is market-based and is set by the divisions (TPSG3). In these two companies central management adopts an avoidance stance with regard to conflict over transfer pricing. Corporate policy is to push divisional managers to be competitive and attain targets in order to avoid inter-divisional conflict because of the high impact of the TPS on divisional results (item CSFC7).

On the other hand, it can also be inferred from Table 7.2 that the respondents’ comments tend to indicate high levels of co-operation between divisions. Knowing that divisional managers are better informed about their businesses, i.e. they possess information about their technology and market conditions that the centre lacks, collusion cannot be ruled out in these twelve companies. There is always the risk that divisional managers may enter into an agreement to misrepresent their reported performance. This could be the case of Companies F and K where the impact of the TPS on divisional results is a major source of conflict.

TABLE 7.2 COMPANIES NOT CONCERNED WITH QUESTION QD5

company	% transfers	Pricing base	Pricing Decision	OBTP1 ** OBTP2	TPB *** and CBFC7	Respondent's comment on question QD5
A	2.5%	Market	TPB03	Not High	MidHigh	Transfer pricing not important
B	4%	Market	TPB03	Very Low	Low	They wouldn't complain. It is the real world.
C	< 5%	COST	TPB01	Very Low	Very Low	No significant effect as there is very little inter-company trading. Managers accept budget achievement as basis
D	5%	Market	TPB03	Very High	Very Low	No complaints of transfer pricing at market.
E	5%	Market	TPB03	Low	Very Low	Not a significant factor
F	5%	Market	TPB03	Very High	High	Get on with the job of improving performance
G	6%	BOTH	TPB03	Low	Low	Not a problem for us
H	6%	Market	TPB03	High	Very Low	No answer
I	9%	COST	TPB02	High	Very Low	Provided transfer element is small and pricing not manifestly unreasonable, it is not an issue.
J	10%	Market	TPB03	Very High	Very Low	The principle is accepted. There is a lot of healthy debate.
K	16%	Market	TPB03	High	Very High	Do their best to attain required performance. (Question is obviously loaded to give unfavourable response)
L	20%	BOTH	TPB03	High	Low	Adequate prior knowledge of special circumstances such as transfer prices avoids complaints or mistrust.

(\*) TPB0: Locus of the transfer pricing decision (QD1).  
 (\*\*) OBTP1, OBTP2: performance evaluation objective of the TPB. (QCB)  
 (\*\*\*) CBFC: Causes of conflict over transfer pricing (QD1).

The perverse results reported by the remaining 21 participating companies and summarised below in Table 7.3 may be interpreted as a failure of the companies' MCSs to generate the necessary motivational impact that links target attainment with managers' expectations. This may be due to:

- 1) failure to specify objectives correctly which results in task ambiguity for the interdependent divisions,
- 2) inadequacy of the performance (constraining) measure because of the incompleteness of the APM to encompass all the factors that determine divisional performance,
- 3) lack of power devolution,
- 4) lack of fairness of the TPS,
- 5) divergence (or incongruence) of divisional managers personal goals from organisational goals, and
- 6) inadequacy of the incentive compensation scheme.

**TABLE 7.3 (QD5) MANAGERS' REACTIONS TO FINANCIAL PERFORMANCE MEASURES**

DIVISIONAL MANAGER'S BEHAVIOUR [AS VIEWED BY CORPORATE MANAGEMENT ON THE BASIS OF RECURRING EXPERIENCE]	ALL	PATTERN *	
		SINGLE	MATRIX
DMRC1-Complain on fairness of transfer pricing system	11	2	9
DMRC2-Conflict over transfer prices	9	2	7
DMRC3-Indulge in bickering	3	-	3
DMRC4-Bias and build slack in reported information	6	2	4
DMRC5-Increase competition not co-operation	8	1	7
DMRC6-Increase mistrust between divisions	5	-	5
DMRC7-Increase mistrust between divisions and corporate management	4	-	4
DMRC8-Not applicable	12	-	-
<b>TOTAL</b>	-	7	-

(\*) 7 companies reported only one type of reaction and 14 companies a matrix of behaviour. N = 33.

The combination of variables DMRC1 to DMRC7 reinforces earlier findings and arguments. In Chapter 6 (Section 6.2.5.2) it was mentioned that fairness and conflict resolution was the third most important factor for the prevalence of particular transfer pricing policies. Further analysis in Section 6.4.3 of that chapter showed that the review and adjustment of transfer prices resulted in reducing internal conflict. Given the observed managerial reaction to the performance measures, it can equally be said that the review and improvement of the performance evaluation and reward system (PMERS) is as important as the review and adjustment of the TPS in reducing/resolving conflict in the decentralised company. This adds to an earlier conclusion (Chapter 6, Section 6.5.2, Finding 13) that conflict is not necessarily dysfunctional. Since the reported managerial reaction is part of the learning process for a coalition of individuals whose actions are co-ordinated by the TPS and the PMERS, the undesirable behaviour can be turned into a functional element if the appropriate and timely corrective actions are operated on the TPS and the PMERS. This argument will be discussed further in Section 7.5.

The existence of bias and slack creating (DMRC4) implies that corporate management was able to detect and measure them and then take corrective actions. The challenge in the detection of bias and slack in these large decentralised companies lies in the fact that top management has to rely on the information supplied by divisional managers. Since the answers contained in Table 7.3 represent corporate perceptions, it can only be assumed that these perceptions are based on past experience - as question QD5 emphasises - for instance, through the auditing of past divisional performance reports.

Table 7.4 below reveals that bias and slack building are reported by six companies, four of them with very high levels of transfer transactions, i.e. “*sequential and reciprocal interdependence*” (Thompson, 1967) or “*high levels of task uncertainty*” (Hirst, 1981 and 1983). Hirst (1983) found that when task uncertainty was combined with a performance evaluation style that relied primarily on APM, significant job-related tension existed. For the present four companies the tension is intensified by the fact that the transfers are mostly valued on a cost-basis and divisional managers’ freedom on pricing

Table 7.4 (QD5): COMPANIES THAT REPORTED BIAS AND SLACK BUILDING (DMRC4)

Company	Industry	% Transfers	Pricing Base	Pricing Decision *	OBTP1 OBTP2 **	Causes of conflict ***	Other DMRC ****
M	Chemicals	40%	Cost	TPSG1	Very High	CSFC7, CSFC8	DMRC1, DMRC2 DMRC3
N	Electronics	40%	Cost	TPSG4	Very High	CSFC2, CSFC3 CSFC6, CSFC10	none
O	Electronics	40%	Cost	TPSG2	High	CSFC3, CSFC7	DMRC1, DMRC5 DMRC6
P	Electronics	33%	Market	TPSG1	High	CSFC3, CSFC4 CSFC7, CSFC8	DMRC3, DMRC5
Q	Construction	5.4%	Market	TPSG3	High	CSFC3, CSFC4 CSFC6, CSFC8	none
R	Chemicals	<5%	Market	TPSG3	High	CSFC3, CSFC4 CSFC7, CSFC8	DMRC7

(\*) TPSG: Locus of the transfer pricing decision (question QC1) [TPSG1=by corporate management; TPSG2=with consultation of divisions; TPSG3=between divisions; TPSG4=selling division]

(\*\*) OBTP1=performance evaluation of divisions; OBTP2=performance evaluation of managers]

(\*\*\*) CSFC2=centralisation of TPS; CSFC3=lack of trust between divisions; CSFC4=restricted information flow; CSFC6=negotiation of transfer prices; CSFC7=impact of TPS on divisional profits; CSFC8=importance of transfer to division; CSFC10=freedom to trade externally.

(\*\*\*\*) as in Table 7.3.

transfers and external procurement is curtailed. Interestingly three of these companies operate in the electronics sector, i.e. the high technology industry. Among these three companies Company P with 33% transfers and market-based prices indicated that the reported managerial behaviour (DMRC3, DMRC4, DMRC5) was not critical as it only had a “nuisance value”. The respondent stressed that local objectives were set in the light of existing transfer prices.

As the TPS impacts highly on divisional results in these three high technology firms, the transfer pricing policy should take into account the life cycle of the products. When the particular product matures and, because of advances in technology and pressure from competition, reductions in equipment prices occur. Hence the divisional manager is to remain competitive he/she should be provided with sufficient (profit) incentives to be able to offer price discounts to the internal as well as the external customers.

In this perspective only Companies N and O in Table 7.4 considered technological conditions (question QF2, item FCTR10) as a major factor for transfer pricing adjustment. As indicated earlier in Chapter 6 (Section 6.3.2), the electronics Company N is already in the process of reverting to market-based transfers. This company will be the subject of a comparative case study in the next chapter where it is referred to as Silicon Ltd.

The existence of bias and slack building or misrepresentation of private information also indicates that divisional managers incorporate some of their personal objectives into their managerial choices in showing conformity to the targets and rules specified by corporate management. Although divisional managers were reported not to be highly involved in setting performance evaluation measures (Chapter 5, Section 5.8.8), it can be deduced from Table 7.3 above that divisional managers do have a-priori knowledge of the performance measure(s) and the incentive scheme, i.e. they know that budgeted performance is linked to remuneration after ex-post monitoring. Thus, in these companies, divisional participation in budgeting is not necessarily a guarantor of private information disclosure. Divisional managers may exploit the ignorance of their superiors in order to

maintain a degree of managerial independence to assist in the pursuit of their own objectives (DMRC3 to DMRC7). They can indulge in collusion or, in Argyris's (1953) words, they may form cohesive groups to combat senior management pressure.

The perceived lack of fairness of the financial performance measure also reflects the shared risks in achieving outcomes and the consequent impact on the distributed rewards or sanctions to the interdependent divisions. The existence of considerable amounts of internal trade in the companies that reported attitudes DMRC1 to DMRC7 requires substantial joint effort or co-operation between the divisions concerned. Since the transfer price represents a revenue to the transferor and a cost to the transferee, i.e. it is represented with opposite signs in the revenue and cost functions, it can be a source of friction between divisions over sharing rewards (Philippakis and Thompson, 1970). Therefore, "*incentive compensation can influence the way in which division managers work together*" (Salter, 1973, p. 95). Obviously, interdependent divisional managers would prefer less monitoring and lower risks in the reward system (Harris and Raviv, 1979). Recent research by Tosi and Gomez-Mejia (1989) shows that there is a direct relationship between monitoring and the risk level of bonuses and long-term income to chief executive officers.

Stated otherwise it can be deduced from the foregoing analysis that the actual performance evaluation systems of the sample companies may be encouraging the observed undesirable behaviour which can be seen in this situation as "*rational economic behaviour*" (Otley, 1985 and Parker et al. 1986) or "*moral hazard, shirking and adverse selection*" in the agency literature. This sort of behaviour seems to persist since companies' answers are based on their recurrent experience. This implies that, in general, efforts have not been made to improve the situation - or efforts have been made but were not successful. As such, the observed undesirable behaviour has become embedded in the companies' cultures. The embedding is nurtured by the length of time the particular divisional manager has spent and thinks will remain with his/her company and the pattern of staff rotation and transfers within the company. This important explicative time element has unfortunately not been covered by the present study. Recent research - not covering

the transfer pricing problem - concluded, however, that demographic variables (age, tenure and status) were of little consequence in predicting managerial response attitudes (Collins, 1988).

In conclusion to the above discussion one can simply say that, in the multi-divisional company, undesirable behaviour is contingent not only on the degree of task uncertainty but also on the impact of the TPS on evaluated and rewarded divisional performance, especially when there is heavy reliance on APM. In other words, there is an organisational dilemma of how to make managers take rational decisions in risky and uncertain contexts. It is often suggested in the literature that the answer to this dilemma lies in the design of suitable compensation packages.

### **7.3 MANAGERIAL COMPENSATION SCHEMES**

Due to length considerations in the questionnaire, the question on compensation schemes has been built around only two standards of measurement, that is, satisfactory and unsatisfactory performance. In reality, however, the achieved performance could be measured on a multiple-standard scale, for example:

- satisfactory/unsatisfactory
- fully satisfactory/unsatisfactory
- more than satisfactory/unsatisfactory
- outstanding/very unsatisfactory

Table 7.5 and 7.6 summarise the direct and indirect formal performance rewards and penalising policies of end results reported by the participants. No informal or discretionary measures were mentioned, though these cannot be ruled out.

**TABLE 7.5 (QD6) SATISFACTORY PERFORMANCE**

REWARD	ALL	SINGLE
PRWD1- Promote	19	1
PRWD2- Increase pay	17	1
PRWD3- Give bonuses	29	8
PRWD4- Give more power	3	-
PRWD5- Consult on strategic decision making	5	-

N = 33

**TABLE 7.6 (QD6) UNSATISFACTORY PERFORMANCE**

SANCTION	ALL	SINGLE
PSCN1- Dismiss	17	2
PSCN2- Transfer	19	2
PSCN3- Advise/train	20	3
PSCN4- Give more power	-	-
PSCN5- Help overcome weaknesses	18	2

N = 33

**7.3.1 FORMALITY AND VARIABILITY OF INCENTIVES AND SANCTIONS**

The aggregate data in Table 7.5 and 7.6 show that only few companies have single-variable schemes. The variability reported by the great majority of companies reflects their variability of performance measures discussed earlier. However, the multiplicity of schemes in the tables above does not have the same meaning. While satisfactory performance is rewarded in most companies with one or a combination of the incentives in Table 7.5, penalisation is generally limited to one typical sanction which depends on the severity and frequency of poor performance.

### 7.3.2 FINANCIAL VS. NON-FINANCIAL SCHEMES

The widespread use of bonuses implies that managers prefer fixed or relatively secure salaries. Previous research indicates that it is not a widespread practice in the U.K. to relate managers' income directly to their performance (Channon, 1973 and Pratten, 1986). This substantiates the evidence given in Chapter 1 (Section 1.2) on the lack of enthusiasm in PRP schemes by large British companies. This can also be inferred from Table 7.6 which indicates that poor performance is not sanctioned financially, though dismissal (PSCN1) and transfer (PSCN2) may indirectly bring financial losses to the person concerned in the same way as promotion has an indirect financial link with performance.

The fact that very few companies considered rewarding their divisional managers by giving them more power (PRWD4) or consulting them on strategic issues (PRWD5) does not necessarily imply that non-financial rewards other than promotion are not important. In fact, the few companies that reported PRWD4 and PRWD5 are among the 19 companies that reward their successful divisional managers with promotion (PRWD1). Since these are large M-form companies, promotion of the divisional manager means an upward move in the hierarchy to more prestige, responsibility and financial benefits, i.e. it leads to more discretion over decisions including the formulation of company strategy.

In contrast no company considered delegating further decision-making power to bad performers. This may add to an earlier conclusion that many of the participating companies are structurally but not managerially decentralised. Instead of power devolution, companies opt for helping their divisional managers overcome their weaknesses (PSCN5), but no detail was given as to the nature of the help provided.

Given that 27 (82%) companies evaluate both the manager's and the division's performance on the same basis (Section 7.1.4 above), it can be assumed that the compensation schemes of the majority of the responding companies are based on the financial results of the responsibility centres, not managerial performance. According to responsibility accounting, an agent's compensation should only be based on what he directly controls. However, in the presence of internal transfers of goods and services,

especially mandatory transfers and prices, this notion is questionable because divisional managers share the same performance. Hence, the need for relative performance measures. The reward/sanction schemes of the companies tend to show that divisional managers are rewarded on the basis of their absolute outcomes but not according to the difference of outcomes, possibly to avoid collusion.

Moreover, in the majority of the companies turnover, absolute profits and profit ratios are used for measuring and evaluating divisional performance. As it was earlier found (Chapter 6, Section 6.5.1) that the major source of internal conflict was the impact of the transfer pricing system on divisional profits it can be said that there is an agency problem in most companies. This is to say that there are problems in allocating the responsibilities and monitoring them. The emerging 'agency theory' seems to provide an appropriate framework of analysis for tackling this dilemma.

## **7.4 THE AGENCY RELATIONSHIP OF THE TRANSFER PRICING PROBLEM**

### **7.4.1 THE AGENCY MODEL AND ITS APPLICABILITY TO THE TRANSFER PRICING CONTEXT**

In its simplest form, an agency relationship exists “*whenever one individual depends on the action of another*” (Pratt and Zeckhauser, 1985, p. 2). A more formal definition views this relationship as “*a contract under which one or more persons - the principal(s) - engage another person - the agent - to perform some service on their behalf which involves delegating some decision-making authority to the agent*” (Jensen and Meckling, 1976, p. 308) who will be compensated for the service performed (Merchant and Simons, 1986, p. 188). By contract is meant both the explicit (or written) agreements and implicit bargaining process over outcomes, ways of judging performance and the resulting pay-offs (Fama and Jensen, 1983). The contracting relationship is thought to bring the conflicting objectives of principal and agents into equilibrium (Kren and Liao, 1988). It should be added that most agency models are limited to a single principal-single agent relationship over a single time period.

Both the principal and the agent are assumed to be motivated solely by self-interest. For example a divisional manager (agent) may be aiming at earning esteem and getting a promotion whereas top management (principal) emphasises short-term profitability. What complicates the situation is that the divisional manager has the advantage of possessing private information about the tasks he performs and therefore the potential for intra-firm conflict accentuated by information asymmetry cannot be ruled out. Hence the agency relationship is not cost-free because of the need to monitor the agent's activities to ensure that the agent fulfils his/her fiduciary responsibility (contained in the employment contract) of aligning his/her interests with those of the principal.

The derived managerial response to performance measures discussed in the preceding section provides a case where the agency theory paradigm can be introduced. The relevance of this paradigm to management accounting has already been researched by Baiman (1982 and 1990) and therefore the purpose here is not to expound on the theory itself but to apply a framework of analysis to the transfer pricing problem. The principal-agent model is applied here in the special context of the divisionalised (or hierarchical) company with internal 'sales' of goods and services among divisions which is the case of the companies participating in the present study. As Eccles (1985) rightly observed, the agency-relationship in this context is at least a three-person problem involving one principal and two agents, the principal being the corporate manager or director and the agents the divisional general managers.

Since every company in the responding sample has more than two divisions, the agency relationship in the present analysis is assumed to be multi-agent. The appropriateness of this context stems from the varying degrees of interdependence between divisions or task uncertainty. Uncertainty is a basic tenet of agency theory. Therefore the agency relationship exists at two levels of the decentralised hierarchy. First, there is a company-wide agency between central management and the divisional managers and second, a divisional-level agency between the parties to the internal transaction. In the latter case the transferor division can be considered as the agent performing services

in the form of supply of intermediate commodities that satisfy the needs of the transferee division or principal. The contract that binds the agency relationship here is the transfer pricing system and any informal agreements regarding the transfer transaction.

Since the particular transfer price has opposite signs in the objective functions of the divisions and, given the agency assumption of motivation by self-interest, the transferor division (agent) will try to maximise its revenue from the transfer and the transferee division (principal) will try to minimise the impact of the transfer price on its product cost. Conflict arises if either division sees its interests undermined. What complicates the situation where there is divisional interdependence is when there are restrictions imposed on the divisions by central management and the TPS plays a major role in monitoring divisional performance. In Chapter 6 (Section 6.3) it was indicated that 1) thirteen of the participating companies require approval for external procurement and 2) in twelve companies central management fixes or intervenes in fixing the transfer price, especially if the internal transaction is important.

#### **7.4.2 ASPECTS OF THE AGENCY PROBLEM IN THE SAMPLE COMPANIES**

##### **7.4.2.1 TASK INTERDEPENDENCE, RISK ATTITUDE, MORAL HAZARD AND AGENCY COSTS**

The agency model asserts that conflict of interests necessarily exists and that agency costs are unavoidable to prevent the agent from taking decisions that divert from the principal's interests (Tosi and Gomez-Mejia, 1989 and Kaplan and Atkinson, 1989).

The managerial response to the financial performance measures contained in Table 7.3 above indicates that the agent's choice of action does not conform to the principal's preferred action. It also indicates that divisional managers in these companies are risk-averse and points to the existence of moral hazard as managers are reported to misrepresent their private information because of the TPS and the PMERS. Moral hazard is said to occur when the principal is not able to observe the agent's action or level of effort and therefore cannot use the agent's effort as a basis for effective performance evaluation but rather relies on surrogate measures (Kren and Liao, 1988).

As far as risk is concerned divisional managers' attitudes do not stem only from their concern about the PMERS but may also be viewed in terms of the overall corporate attitude towards risk. Since no question was built in the questionnaire to address this specific issue, it is rather difficult to assess the degree of risk aversion or risk taking in any of the responding companies except through indirect inferences. For example, the compensation schemes in Table 7.5 and 7.6 are indicative of divisional and corporate attitudes to risk. Divisional managers' preference of relatively secure salaries and the lack of enthusiasm for PRP schemes point to risk aversion with regard to tying part of the salary to accomplishment. A similar argument applies to the reluctance of corporate management to delegate more decision-making power to divisional managers with unsatisfactory performance. It may be said in this case that corporate managers are risk averse in that they avoid committing further resources to activities with risky outcomes. Moreover, the readiness expressed by companies to dispose of unsuccessful managers "*if management was the main cause of failure*" also aims at reducing the risk from adverse employment contracts.

Some further indication about attitude to risk could be gleaned from Table 5.14 (Current High Priority Management) in Chapter 5. The priority given by corporate management to particular business objectives reflects the aspirations and aims of those groups of people who have a stake in the firm and, as such, expresses their preferences towards risk through the companies' central policy makers. Divisional managers were reported to be highly involved in policy making and, therefore, are assumed to have internalised their companies' objectives and adopt an attitude to risk similar to the corporate stance. Nevertheless, in order to make a useful assessment of attitudes to risk further information is required on individual companies about their diversification strategy, life cycle of products, specificity of investment in products, position in the market and market structure and maturity. For example, in those companies where priority is given to maintaining current market share and/or improving customer service for a saturated market, it may be deduced that these companies do not attempt further

investment in the present market as the risks involved will not be rewarding. On the other hand, companies that give priority to new product development and technological modernisation can be said to be risk bearing as entrepreneurship is encouraged.

Agency costs can be divided into unavoidable or necessary costs and avoidable costs. The unavoidable costs are, as stated in the introduction to the present section, those defined in the agency literature as necessary to prevent the agent from diverging from his contractual obligations to the principal. For the sample companies under study these costs are implicit in the TPS and the PMERS which are both formal control mechanisms on which depends the integration towards achieving the participating companies' objectives or the principal's interests. The costs incurred for designing, administering, reviewing and adjusting the TPS and the PMERS are all unavoidable agency costs in these large companies.

What can be defined as avoidable costs are those costs resulting from the perceived (and unseen) divergence of the agent's actions from the contractual obligations. For instance, the reported dysfunctional behaviour (Table 7.3 above) entail agency costs as there are losses to the principal whose interests are hindered by the divisional managers or agents. These losses are not only financial as the variables DMRC1 to DMRC7 affect not only the corporate financial performance but also the social and cultural norms which constitute the internal fabric of these companies. Further indication of avoidable agency costs could be found in the penalisation policies summarised in Table 7.6 above. All the corrective actions mentioned (PSCN1, PSCN2, PSCN3, PSCN5) point to the possibility of agency problems and costs in that the responding companies recognise the possibility that their divisional managers may lack the appropriate skills for running the operating divisions. Whether a company dismisses, transfers, advises, trains or provides some other help to the poorly performing manager, this is bound to incur costs which could have otherwise been avoided if the right person was selected for the job. Since the unnecessary costs are the consequence of inappropriate agency contracts, their avoidance requires the proper design of the contract which, in this case of interdependence, must accommodate the effect of the TPS on divisional performance.

#### **7.4.2.2 INFORMATION ASYMMETRY AND IMPACTEDNESS AND MULTI-AGENT COLLUSION**

The role of accounting information in monitoring the agent's action has been the focus of much of the agency research in accounting, assuming that the outcome of the agent's action is observable (Banker et al. 1988).

The setting of rules to monitor the delegated responsibilities and the consequent reward or punishment aim at constraining the behaviour of the divisional manager (agent) taking actions that fail to further the principal's objectives. The person being monitored (or agent) has better information about his situation than those doing the monitoring (or principal) and it is usually because he/she (the agent) is expected to have better information that he/she is given the power to make decisions. That is to say that information asymmetry is implicitly recognized in the decentralised companies participating in this survey. In other words, the need for decentralising arises because divisional management possesses private information that the centre lacks (Demski and Kreps, 1982).

This creates the opportunity for the divisional manager to indulge in skilful manipulation of the costs and revenues, i.e. create information impactedness in order to achieve a satisfactory alignment of private and social costs and benefits. This problem can be aggravated if divisional managers with task interdependence and sharing rewards play their common interests and personal relationships and enter into collusion at the expense of global interests. This situation was illustrated earlier in Section 7.2.2 with the case of the twelve companies that reported no particular dysfunctional behaviour. Given the remoteness of the centre in the large company from the operating divisions and the unobservability of managerial effort whose outcome can at best be imperfectly monitored, the apparent absence of dysfunctional behaviour may be the result of divisional collusion.

This reasoning also applies to the 21 companies where corporate management perceived one or more types of undesirable behaviour (Table 7.3 above) particularly those companies ascribed variables DMRC2, DMRC4 and DMRC7.

The few agency problems enumerated above derive from a number of causes already outlined in the preceding chapter and are summarised below within the agency framework.

### **7.4.3 CAUSES OF THE AGENCY PROBLEM IN THE TRANSFER PRICING CONTEXT OF THE SAMPLE COMPANIES**

#### **7.4.3.1 CENTRALISATION OF THE TRANSFER PRICING AND THE SOURCING DECISIONS.**

In a budgetary planning and control environment, the transfer pricing policy is undoubtedly formulated alongside the other items of the budget. As seen earlier in Chapter 5 (Section 5.8.8), the participating companies reported high levels of budget participation by divisional managers. Excepted from this high involvement, however, is the transfer pricing decision which is an important determinant as far as divisional results (in this case, profits) are concerned, particularly in the absence of an external intermediate market.

The centralisation of the transfer pricing decision reported by some of the companies (Chapter 6, Section 6.3) - especially when the transfer transaction is important - only indicates that central management is assumed to have perfect knowledge of the production functions of the divisions. The limited involvement of divisional managers in transfer price determination implies that information bias by divisional managers cannot be ruled out. It may even be justified given the reported high impact of transfer prices on divisional profit performance and the friction it generates (Chapter 6, Sections 6.2.1 and 6.5.1) and the consequent compensation schemes. One can deduce that the high reliance on accounting measures of performance and the emphasis on profit performance make managers expect rewards and sanctions to be contingent upon budget attainment, i.e. based on profits or financial results.

Naturally when divisional freedom is curtailed because of centralised transfer pricing and external sourcing, the divisional manager could be expected to resort to information bias especially if he has a priori knowledge of the PMERS. Hence it can be said that information impactedness plays a major role on the reported performance and the consequent pay-offs.

#### 7.4.3.2 NEGOTIATION OF TRANSFER PRICE TRANSACTIONS

It should not be understood from the foregoing analysis that the agency problem and costs are eliminated by simply decentralising the procurement and pricing decisions. According to the definition of the agency contract (Fama and Jensen, 1983) the negotiation of transfer price transactions described earlier in Chapter 6 (Section 6.2.3) should be viewed as part of the contract of divisional-level agency. Therefore the role of negotiation in narrowing or widening the gap between conflicting interests is worth investigating. The theoretical pros and cons of negotiated transfer prices were previously discussed in Chapter 2 and Chapter 3.

The data in Chapter 6 show that transfer prices are negotiated in twelve companies, eleven of which have market-based transfers. The great majority of these companies do not impose restrictions on trading in the intermediate market.

Although the whole sample of participating companies reported low levels of conflict, it was indicated in the previous chapter (Section 6.5.1) that negotiation of transfer prices was considered the third potential source of conflict. In the absence of further evidence as to what particular part of the bargaining process causes disagreement, assumptions can only be made here. The agency theory motto of self-interest will inform such assumptions.

The predominance of the profit objective, the competitive spirit encouraged through market prices, the impact of the TPS on divisional profit performance are all factors motivating self-interest.

Moreover, the absence of restrictions on external trading means that divisions are not obliged to trade the intermediate product internally. Therefore the choice of the internal intermediate market over the external market is done on the basis of private information possessed by the particular division. Motivated by self interest to limit the risk inherent in the outcome of the PMERS, the negotiating divisional manager may withhold some or all of his private information and create conflict rather than forego trading internally and be worse-off because of a less rewarding external transaction.

Self-interest in the bargaining process is not necessarily motivated by financial gain only. Factors like product quality, reliability of supply, specificity of product and availability of substitutes, quality of service, amount of risk in transaction, customer relationship, market position and investment opportunities can all affect the behaviour of the negotiating divisional managers and may or may not contribute to the agency problems and costs. Future research based on individual cases could hopefully shed more light on these points.

#### **7.4.3.3 BUDGET RELATED SHORT-TERM PROFIT PERFORMANCE AND THE SURROGACY OF THE PMERS**

The commonality or rather the equilibrium of interests sought by the agency model necessitates a strong linkage to organisational budgeted objectives, in this case, profit maximisation. Therefore the budgetary system reflects well the agency relationship since the budget can be considered as a contract that outlines the expectations of the principal and the agent. Therefore the non-participation by divisional managers in key decisions such as pricing transfers may trigger information impactedness in order to provide insurance for the expectations of the divisional manager.

Given the retrospective nature of the PMERS and the noticeable reliance on APM, managers may feel insecure because of their recent poor performance, i.e. the causes of bias involve rational economic behaviour on the part of the manager concerned. Since divisional managers were reported not to be greatly involved in setting performance measures (Chapter 5, Table 5.16) and, thus, can be assumed to have only a priori knowledge of the PMERS, it can be added that the centrally devised incentive schemes are not necessarily guarantors of optimal behaviours that lead to optimal results. The size of the company adds another dimension to the problem. The feeling of insecurity and the consequent sub-optimal behaviour in the large company is a logical response to foreseeable losses due to the impact of the TPS on divisional profits and the indifference of the PMERS to this impact. If the volume of internal trade is high, an unfair TPS can deprive the manager of an important division in a large company of a large slice of otherwise deserved returns for effort. If divisional achievement is not impaired by the

TPS, it is common sense that the divisional manager would ensure that the contribution of his/her division is optimised because of the perceived correlation between company growth and rewards.

The length of time the particular managers have been and think they will remain with the company also plays an important part on the reaction to the short-term measure in order to maximise the reward. As mentioned earlier, this issue is beyond the scope of the present study and should be addressed by future research.

The emphasis on the short-term performance indicator indirectly neglects the human factor because managerial effort should be considered on a long-term basis. Thus managers indulge in behaviour which may be perceived as undesirable by corporate management when they feel that their efforts in achieving the results are not considered and properly rewarded. For example, because of the impact of the transfer price on divisional sales, divisional managers may give biased information to guarantee the required level of sales on which their rewards will be based. The agent's behaviour is thus directly related to the adequacy of the PMERS. Arguments on the incompleteness of APM to reflect managerial effort were earlier quoted in Section 7.1.2 and expanded upon in subsequent sections. In the agency framework the problems and conflicts reported by many of the participating companies can be viewed as resulting from basing the agency contract on APM or imperfect surrogates of managerial behaviour.

The question that derives from the above analysis is how can central management (principal) in the M-form company establish an incentive compatible with decentralisation so that managers truthfully disclose their private information to allow informed judgements by the principal? Stated otherwise, how can the gap between the principal's and agent's often diverging objectives be narrowed so as to align these objectives and guarantee confluence of perceived interests of both parties?

## **7.5 POSSIBLE SOLUTIONS TO THE TRANSFER PRICING AGENCY**

### **7.5.1 MANAGERIAL COMPENSATION AS A PANACEA**

#### **7.5.1.1 INCENTIVES FOR EQUILIBRIUM**

Managerial compensation is generally considered the primary solution to the agency problem as incentives aim at efficiency by eliciting the private information of divisional managers. In theory, the PMERS is supposed to enhance goal congruence and managerial effort because it serves as a co-ordinating mechanism in the decentralised company. It is argued that a properly designed compensation package would assure managers acting in the principal's interest (Rappaport, 1983). The compensation package is intended to reward achieved results and provide incentives for better performance. Cherrington and Cherrington (1973) argued that it is not budgets per se that affect people but rather positive and negative reinforcing consequences and the reward contingencies associated with budgets.

Compensation schemes include both incentives and deterrents and both are pay-offs to the parties of the agency contract. For example, the distribution of bonuses based on profit achievement practised by the companies under study implies that the principal is satisfied with the outcome of the agent's actions. As a consequence, the agent is rewarded with the monetary pay-off which is only part of his success. The remaining part of the profits is retained by the principal. Knowing that the divisional manager is entrusted with part of the resources of the company and delegated decision making power, it can be said that, although managerial compensation is a recognition of achievement, it also implies that the interests of the principal and the agent are not costlessly aligned. The alignment of interests is further complicated with the presence of inter-divisional transfers as it is not easy to formulate the compensation scheme as a function of each division's actual outcome but likely as a function of an accounting aggregate measure (Banker et al., 1988). Thus, the equilibrium sought from managerial compensation may not be achieved. To counter the problem, the following suggestions are usually encountered in the literature.

### **7.5.1.2 DIVISIONAL PROFITS VS. DIVISIONAL OUTPUT**

Decentralisation based on divisional profit maximisation is regarded as inadequate because of the inherent incentives to violate overall optimality due to the perceived impact of the TPS on shared rewards. Philippakis and Thompson (1970) suggest basing rewards on divisional output which is tied to a budget profit level instead of actual profits. This suggestion is not flawless as it may induce inefficiencies. For example, divisions may be tempted to produce for stock. In a vertically integrated firm this may jeopardise the sequences of the production and distribution process. Moreover, if transfer prices are centrally fixed, the variances between budgeted and actual profits lose their usefulness.

### **7.5.1.3 DIVISION VS. COMPANY RESULTS**

To alleviate the problem of traceability caused by interdependence, it is often argued that better informed monitoring would result if rewards were based on corporate rather than divisional results (Pursell, 1980 and Harris et al., 1982). This approach raises many questions with regard to size and content of the bonus pools and whether to establish divisional or corporate pools (Salter, 1973 and Pursell, 1980). It also raises the question of uniformity and fairness as divisions may not be of the same size; may not be allocated the same amounts of scarce resources; and therefore divisional contributions to overall results are not uniform and should be rewarded differently.

### **7.5.1.4 RELATIVE PERFORMANCE AND UNIFORMITY**

Given the disparity between divisions and the problems mentioned above, one suggestion is to adopt relative performance evaluation or RPE (Magee, 1986). As seen earlier in Section 7.1.4 RPE is favoured by the opponents of the controllability criterion. It is believed that agents who are set or pitted against their peers are better informed than the principal to monitor each other's effort. However, when divisions are forced into joint effort through the TPS, there is always the risk of sub-optimal collusion. Collusion may be averted if pitting against external peers is feasible and the principal can reward the agent likewise, i.e. use what could be called 'market-based' incentives.

## **7.5.2 TAILORING THE PMERS TO COMPANY CHARACTERISTICS**

This approach results from the above arguments in the specific context of divisional interdependence in large companies in which the agency framework is applied. It is difficult to conceive how a compensation package alone could attenuate agency problems if the PMERS does not accommodate the policies regarding internal trade. Thus an answer to the question asked earlier on how to make incentives appeal to agents in the M-form company lies primarily in the proper definition of objectives, the proper decentralisation of decision making authority, the adequacy of the TPS and the incentive-reward scheme. In short, the answer is contingent upon the strategy, structure and culture of the particular company which must be clearly translated by the MCS including the planning, budgeting and accounting processes. An important element of culture is the attitude towards change. Since it was observed that in many companies the actual PMERS are encouraging behaviours which are undesirable, there is need for modifications to both the TPS and the PMERS.

### **7.5.2.1 DYNAMIC VS. STATIC AGENCY CONTRACTS**

Referring back to the previous chapter (Section 6.4.3) one finds that 25 of the 33 participating companies operated changes in their previous transfer pricing policies. This has resulted for most of them in 1) better efficiency of the TPS (RESL1), 2) reduced conflict over transfer prices (RESL2), 3) better control and performance evaluation (RESL3), 4) improved fairness of the TPS (RESL4), and 5) congruence of goals (RESL6). In agency terms, the alteration of the TPS resulted in reducing information impactedness, improved the PMERS and narrowed the gap between the principal's and the agent's interests. The correlation matrix (Table 6.31) between these variables is indicative of the agency role of the TPS. This also points to the inappropriateness of preconceived or static PMERS and the contractual problems they may generate. Keeping pace with changing circumstances means the recognition of the long range nature of managerial effort and, hence, the acceptance of the PMERS by the agent. It also implies the necessity to move beyond the single profit maximand which characterises the priority objective of most of the participating companies.

### **7.5.2.2 CENTRALISED TPS AND COCOONED OUTCOMES**

In those companies where undesirable managerial behaviour resulting from the impact of the TPS on performance is considerable and recurring, the obvious solution to the problem is divisional participation in transfer price setting and review. If divisional freedom has to be restrained for some strategic reasons, the incentive scheme should provide for the impact of the TPS on divisional results or the company should adopt company-based instead of division-based PMERS. In other words, the alignment of conflicting interests can be achieved by creating a balance between the need to centralise some key decisions in the M-form company and the necessity to alleviate the risk inherent in the PMERS on the constrained divisional manager. This applies to companies with centralised cost-based TPS as described in Chapter 6, Section 6.3. Only one of those companies indicated that the mark-up it adds to its centralise full cost transfer price is only for statutory and not management accounting purposes. This company is later studied in detail in the coming chapter where it is referred to as Health p.l.c.

In addition to the above, in those companies with substantial amounts of internal trade, discretionary incentives may serve to cocoon the divisional manager further and encourage more inter-divisional co-operation.

### **7.5.2.3 ENTREPRENEURSHIP AND ACCOUNTABILITY**

In those companies where entrepreneurship is encouraged, that is those companies where divisional managers enjoy substantial authority over resources and autonomy over decisions, accountability for divisional achievement should be established. This applies to many of the companies with market-based transfers and no restrictions on external trading. In these cases accountability should be established independently of the decentralised TPS unless the friction between divisions over transfer pricing is alarming.

## 7.6 CONCLUSION

The above suggestions imply that, as is the case with the TPS, the PMERS should be tailored to suit the requirements of the particular company, taking into account the circumstantial indigenous and exogenous factors. The analysis that was offered in this chapter has emphasised the organisational and behavioural nature of the transfer pricing problem in the divisionalised company, particularly when divisional autonomy is inhibited and the transfer pricing system impacts the evaluated and rewarded results of the divisions.

The agency framework applied to the analysis has put the behavioural nature of the transfer pricing problem into a clear perspective. As the PMERS cannot be dissociated from the effects of the TPS, solutions to agency problems in the case of joint responsibility were argued to depend on the proper design and adaptation of both the TPS and the PMERS. If it were available divisional information could have added more substance to the analysis. Nonetheless, it is hoped that the combination of the arguments and findings in all of Chapter 5, 6 and 7 and the case studies in the next chapter provide enough ground to evaluate the remaining four research hypotheses and suggest opportunities for future research.

## **CHAPTER 8: CASE STUDIES: TRANSFER PRICING PRACTICE IN FIVE LARGE BRITISH COMPANIES**

In the previous three chapters the analysis of the transfer pricing problem and its managerial implications was based on the aggregate data for the 33 responding companies. The current chapter completes the three preceding ones by providing case-based analysis involving five large diversified British companies operating in different industries. The companies are among the eight firms with the highest levels of transfers (Chapter 6, Table 6.7). Soon after they completed and returned the questionnaire, all eight firms were approached by telephone to seek access for interviews. Permission was obtained from five of them and a one-day visit was scheduled and carried out in each (Chapter 5, Table 5.1). Most of the information gathered during the course of the interviews is unquantifiable and as such, is used to complement the data contained in the questionnaire. The initial drafts of the case studies were sent to the five companies for comments and this has produced valuable extra information which added more substance to this chapter.

For confidentiality reasons the names of the companies have been disguised.

### **8.1 CASE STUDY ONE: BAUXITE PLC**

#### **8.1.1 THE COMPANY: BACKGROUND**

This is a wholly owned subsidiary of a foreign-based multinational group which is one of six major producers in the world that control the world aluminium business in terms of technology, investment, prices and end-markets. These companies are highly vertically integrated throughout all stages of the industry which include bauxite mining and treatment, alumina (or hydrated aluminium oxide) refining, aluminium smelting and the fabrication of semi-finished and finished aluminium products (Crough, 1981; Brown and Mckern, 1987; Balkay, 1987 and Financial Times, 1990). In other words, the companies have integrated forward from mining to metal fabrication.

These "Big Six" companies control more than 50 per cent of the world bauxite capacity (62 per cent of Western world capacity), more than 60 per cent of alumina capacity and a large share of aluminium manufacturing (Brown and Mckern, 1987), hence, the high degree of concentration in this industry.

The market dominance of this industry is influenced by the intrinsic qualities of aluminium which include light weight, durability, non-corrosion, ease of fabrication and recycling and energy conservation. Being an easily recyclable material, aluminium saves energy, enables product cost control, and protects the environment. Twenty tonnes of recycled aluminium can be produced with the energy required to make one tonne of aluminium from the ore. The abundance of raw materials (bauxite, in particular), especially in the Third World and Australia, and the versatile applications of aluminium (building and construction, machinery and communications, containers and packaging, the electrical industry, consumer goods, etc.) adds to the superiority of aluminium over other materials. However, the energy cost of the product is high and this tends to bring other substitute materials such as steel and plastics into competition in the various applications and markets.

### **8.1.2 THE COMPANY: STRATEGY AND STRUCTURE**

The origin of the company under investigation dates back to the end of the nineteenth century when bauxite mining began. It has grown through mergers and acquisitions and presently operates over thirty manufacturing plants in the U.K., supported by over twenty stockholding and distribution points throughout the country. The principal activity of the company is the production and processing of aluminium, including the sale of aluminium semi-fabricated products and chemicals and the manufacture and sale of a range of related finished products. The company restructured its divisional operations in 1987 following the publication of a mission statement by the parent company in 1986 which stated that the group:

“is determined to be the most innovative diversified company in the world. To achieve this position, [the company] will be one, global, customer-oriented enterprise committed to excellence and lowest cost in its

chosen aluminium businesses, with significant resources devoted to building an array of new businesses superior growth and profit potential” (Group’s Annual Report).

The British subsidiary, which is fully committed to this mission, has a new structure (Figure 8.1) comprised of seven divisional groups, headed by individual managing directors who are “*accountable for their operations and for the development of strategies within plans approved by the Chief Executive Officer*” (Company’s Annual Report).

### 8.1.3 THE COMPANY: DIVERSIFIED ACTIVITIES

Figure 8.1 shows that the Company is characterised by forward integration and related diversification with aluminium products as the dominant activity.

The ***Primary and Recycling Division*** operates both primary and secondary smelters, producing aluminium sheet ingot, extrusion billet, remelt ingot and hardeners for the foundry trade.

The ***Rolled Products Division*** produces sheet, coil and foil for use in aerospace, road transport, building, packaging, lithographic printing and industrial markets.

The ***Speciality and Aerospace Division*** produces semi-fabricated plate, tube and large extrusions for high performance applications especially in the aerospace, defence and transportation markets, as well as metal matrix composites, superplastic materials and aluminium alloys.

The ***Enterprises Division*** is a recent combination of a number of existing enterprises involved in a wide range of end-use markets including small-scale rolled products, consumer products, commercial extrusion, high pressure gas cylinders, conductor, wire and building products.

The ***Stockholder Division*** operates a network of warehouses supplying a full range of semi-fabricated products including copper, brass and stainless steel, as well as fabricating services and home improvement products.

MANAGING DIRECTOR AND CHIEF EXECUTIVE OFFICER

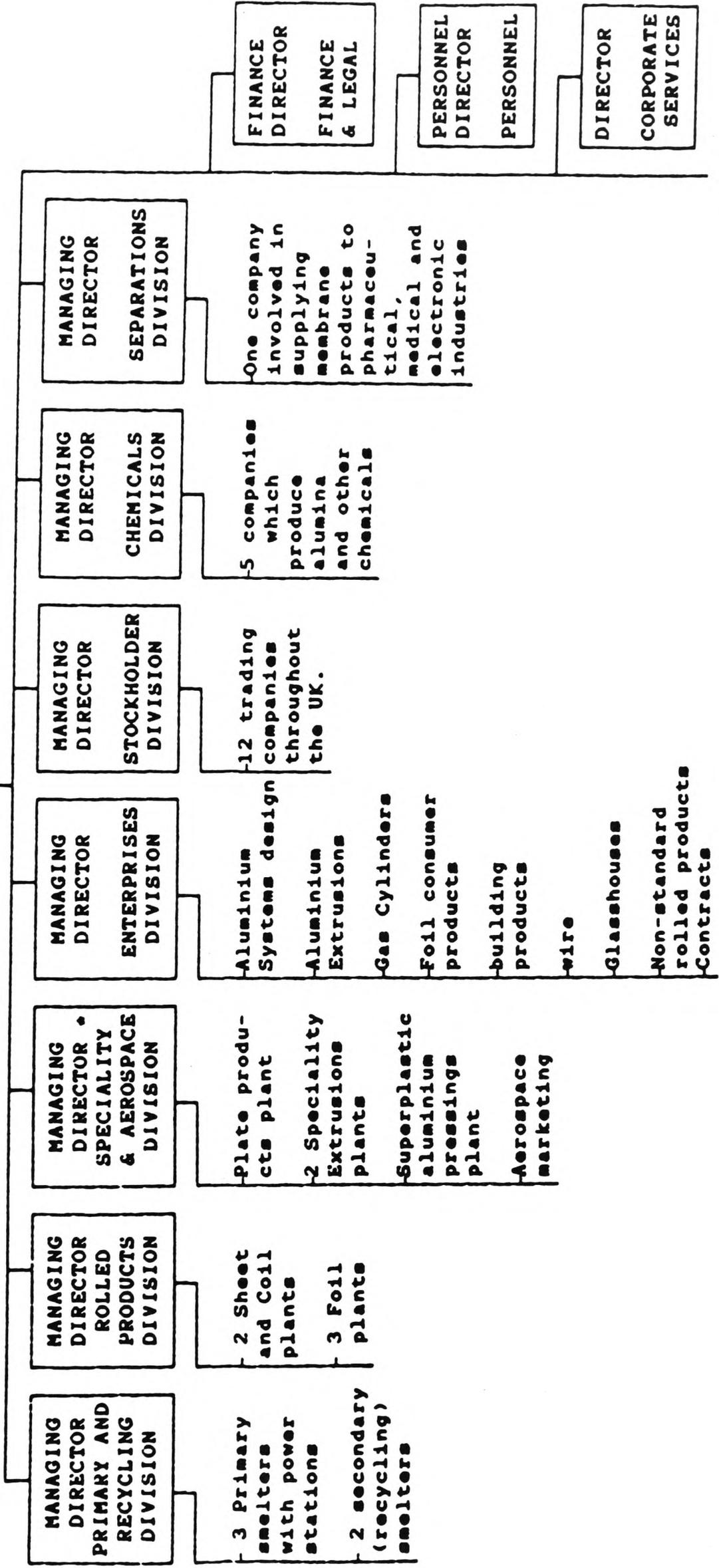


FIGURE 8.1: MANAGEMENT ORGANISATION OF BAUXITE PLC (1988).  
 \* also the Chief Technical Officer for the company.

The *Chemicals Division* is comprised of five companies producing a variety of alumina chemicals for use in fire retardants, refractories, toothpaste abrasives, ceramics, catalysts, paint and aluminium sulphate as well as other chemicals for specialist aerospace, defence and other applications.

The *Separations Division* consists of one recently formed company with the responsibility to develop and manufacture inorganic membranes and filtration and separations devices used by the pharmaceutical, medical, food and beverage, and electronics industries.

#### **8.1.4 VERTICAL INTEGRATION AND INTRA-FIRM TRADE**

Like the rest of the group, the British subsidiary is vertically integrated from aluminium smelting and alumina chemicals to end product manufacture and distribution. It is common practice in the aluminium industry that a major part of bauxite, alumina and aluminium output is transferred internally between subsidiaries of the six major companies. They consume around 38% of mined bauxite, over 80% of their alumina output and around 90% of aluminium production (Brown and Mckern, 1987). For Bauxite p.l.c., internal transfers represent 80% of the total volume sales. This high level of transfers consists of a large proportion of the primary smelters output supplied to other divisions for use in semi-fabricated and finished products. In the words of the respondent “*the metal flows downstream with each division adding value via rolling, shaping, extruding, etc. Throughout the steps of the metal flow there are outlets by way of sales to customers who in the main are themselves manufacturers i.e., onward processors and not end users*”.

#### **8.1.5 TRANSFER PRICING POLICIES: INDUSTRY CONCENTRATION AND PRICE DETERMINATION**

A general guide-line for pricing intra-firm trade is contained in the fifth policy adopted by the parent company in the pursuit of its objectives which reads: “*to conduct transactions amongst members of the ... Group on a fair and equitable commercial basis*”.

Although the company reported a market-based transfer price - adjusted for long-term and quantity involved - it became clear during the interview conducted on site that the market price was determined by a “*complicated formula*” which allows a 5% adjustment margin and that the London Metal Exchange (L.M.E.) daily list price was not very relevant. Aluminium has been traded on the L.M.E. since 1978 but L.M.E. prices are too volatile (Financial Times, 1990) and thus, price leadership has long rested with the major producers, especially Bauxite p.l.c. Obviously when there are high levels of vertical integration, and thus market concentration, this leaves only a limited room for the spot markets to provide a source of usable price quotations. Research shows that it is difficult to establish what could be called a market price since only 10 to 15 per cent of bauxite is traded at arm’s length and the price of alumina (which is mostly traded internally) tend to be notionally determined by transfer pricing formulae or based on long-term contracts (Brown and Mckern, 1987). The price domination by the “Big Six” has led to legal action in Australia (the world’s largest bauxite and alumina producer) over tax evasion through transfer price manipulation (Crough, 1981).

Nevertheless, it seems that the situation is changing fast over the last few years. A recent communication with the respondent revealed that “*the industry has found it difficult to anticipate and therefore match supply with demand. A world industrial expansion (e.g. construction industry boom) rapidly exhausts supply while a hint of recession moves customers into destocking. Because aluminium is an expensive metal the cost of stockholding tends to be high - and costly if prices drop*”. This implies that the producers no longer dominate the market. In fact, “*customers for unwrought aluminium tend to go for regularity of supply at prices which take L.M.E. 3 monthly price quotations into account. In recent years customers have tended to benefit from this system more than manufacturers*”. The recent survey by the Financial Times (1990) confirms these comments and indicates that aluminium is no longer an “*industrial metal*” but “*a commodity metal*”, and that the L.M.E. price is becoming more of a world price.

### 8.1.6 TRANSFER PRICING POLICIES: MANDATED ADJUSTED MARKET PRICE AND DIVISIONAL AUTONOMY

Despite the high level of vertical integration it is surprising to find that the pricing of the high volume of internalised transactions does not depend on internal cost data as much as it is retrospectively affected by the market prices of the final products and results in what could be called “*a resale price margin transfer price*”. In other words, the transfer price is calculated backward from the market price of the final product by deducting appropriate profit margins for the transferee in order to arrive at the transfer price for the transferor division. Final product prices are not easily predictable by the manufacturers. The state of the aluminium market in recent years is described in the following terms:

“producers [world major producers] do not have control over prices. They wish they could get cost plus a decent return but they do not get it. They do make money when aluminium prices shoot up and stay high (1988 year, a good example) and perform poorly when they drop (1990 year, a good example)” ... [Moreover] “imports have been making heavy inroads in recent years. The cross exchange rates for £ has also caused problems”.

The respondent also indicated that

“in certain markets, prices of substitute materials like plastics, steel and copper influence the price of aluminium (eg., *plastics*: building materials market; *steel*: gas cylinder market; *copper*: cable and wire market)”.

Although raw materials are abundantly available at cheap prices, it remains that aluminium is an expensive metal because electrical energy which is vital for the smelters is a relatively scarce resource. Energy cost is the most important element in product cost, followed by capital cost of smelters, then direct material and labour. The company has its own power stations, but its own power supply is not always sufficient and hence the need to buy from the National Grid often at high cost. The company indicated that “*low cost (low energy cost) smelters are in full production while in recent years high cost smelters have been shut down. Certain marginal cost smelters or potline extensions have been switched on and off (this takes months and even years) in line with demand and*

*prices*". Given the above information and knowing that the aluminium ingot price is influenced greatly by the cost of processed bauxite or alumina, the transfer price is determined by what was called a "complicated formula" that takes into account final product prices. For instance, the prices of aluminium products used in making aircrafts are not entirely fixed by the producers. They are subject to negotiations with aircraft makers who in turn are affected by the state of the end-user market, for example the general level of air fares and other market conditions facing the airline companies. Beside these external considerations, the costing policy of Bauxite p.l.c. requires that:

"aluminium block costing is done with the planning itself and the different production costs are analysed at the different stages of production to see what affects the margin squeeze".

The company also reported that the transfer price for the typical internal trade is determined by central management through consultation of divisions. Divisional managers have less influence on transfer price revision than on price setting. The process is described as follows:

"the internal transfer price settings are discussed and negotiated by a committee comprising Managing Directors of major business units and divisions (buyers and sellers). Central management endorses usually".

Company policy also requires central approval on trading the intermediate commodity externally. Divisions need prior permission for external sourcing and this is given "within limits at the planning stage". It may be deduced from this that the high level of divisional participation in price setting resides in supplying cost data to the centre. In fact, company policy requires divisions to report monthly to the centre both the physical and the financial movements of product flows. It was also reported that divisions have high discretion on bargaining with each other over internal transfers and that this could constitute a source of conflict. Combining the above arguments one may say that, because of the high degree of market concentration and the emerging competition, the reported transfer price is a pseudo market-price and may be termed "mandated large supplier market price". In this respect, divisional managers do not seem to enjoy full autonomy.

### **8.1.7 TRANSFER PRICING POLICIES: CHANGES AND REVISIONS**

The dominant “market based” transfer price is reported to be always used and, to preserve consistency, there is no variation of the transfer price of the same commodity when transferred to different internal buyers. Transfer prices are reviewed quarterly by central management, mainly because of market changes, the level of competition and the development of the operating plan. Since the bulk of the internal transfers consist of mined bauxite and alumina whose prices are mainly controlled by the six major producers, changes in raw material and labour costs were considered to have only a moderate effect on transfer price review. It has already been mentioned in the previous section that energy cost is more important than the cost of raw materials and direct labour. Overall, the TPS “*has for many years been market linked, so only refinements have taken place*”. As such, the present TPS is thought efficient and satisfactory and “*is seen as appropriate for the industry as well*”.

### **8.1.8 PERFORMANCE EVALUATION AND REWARD AND CONFLICT RESOLUTION**

Four objectives characterise the company’s current high priority management: 1) long-run profitability, 2) new product development, 3) technological modernisation and, 4) customer relations. These objectives concord with the mission statement mentioned earlier in Section 8.1.2.

Bauxite p.l.c., which employs over 10,000 people in the U.K., measures divisional performance in achieving the objectives with profit ratios such as ROI, sales growth rates and cash flows, without differences in the accounting information used for determining the division’s as opposed to managerial performance measures. The performance measures are mostly set by corporate management. Performance is not judged against short-term profits because of non-controllable elements in the price and quantity of aluminium metals as indicated earlier. Non-accounting data such as “*inventory days, days in debtors, quantitative data, employee numbers, reduction in accident rates, are*

*routinely monitored*'. The importance of the ROI and cash flow measures derives from the huge modernisation programme of the company to replace obsolete plants with capital investments worth £50 million in 1988.

Divisional managers are set personal achievement targets as well as company wide targets. However, higher weighting is given to divisional results when evaluating performance to take into account the effect of the TPS on divisional performance. Promotion, bonuses and more power delegation are the rewards for satisfactory performance whereas inefficient managers could be transferred or dismissed. Managers' pay is not directly related to performance in that the company does not adhere to the recent Government PRP scheme but *"cash bonuses, which can be substantial, are paid annually to senior and middle managers based on their personal performance, their own company performance, and for those very senior the performance of the parent company"*. This tallies with the fact that managers have little influence on setting performance measures and end results being affected by the mandated TPS.

In the completed questionnaire it was hinted that the reliance on financial measures of performance is found to sometimes incite divisions to frequently complain on the fairness of the TPS; conflict over transfer prices; increase competition, not co-operation; and this may result in creating mistrust between them. These response attitudes to the performance measures stem from the high control objective of the TPS, the impact of the TPS on divisional profits as a frequent source of conflict, and the importance of the transferred commodity to the division as the most important source of conflict. The internal typical trade accounts for over 75 per cent of the supplying division's output and 50 per cent of that of the buying division. Given the characteristics of this large aluminium company, the factors triggering conflict and the managers' undesirable behaviours can be considered as unavoidable. No wonder then that conflict resolution depends on *"divisions asking for revision of transfer prices"* or *"opting for mutual concessions to settle differences"*. As two years have elapsed now since the company was first visited,

it seems that because of the changes in the aluminium market, the TPS does not cause a major conflict: *“over time, people come to accept a market related transfer price as the fairest system one could devise”*.

### 8.1.9 CONCLUSION

The aluminium industry provides the extreme context for the transfer pricing problem. High market concentration, price fluctuation and vertical integration require the combination of both centralised and decentralised decision-making. Bauxite p.l.c., and the parent company as a whole, moved from a functional structure to an M-form structure but the locus of the pricing decision has for a long time resided with corporate management, though divisional managers play a participative role in transfer price determination. Therefore it can be said in this context that the TPS is dictated by the particularities of the industry and the market structure, not by decentralised managerial considerations. However, changes could be expected in the future as the dominance of the “Big Six” is diminishing *“as a result of the diffusion of technology, the rise of economic nationalism among bauxite producer countries, and the development of smelting in energy-rich countries”* (Brown and Mckern, 1987, p. 32). The emerging competition and the impact of the price of the final product on the transfer price of the intermediate product is likely to result in creating a balance between hierarchies and markets. The increased interest in aluminium recycling will also affect demand for and prices of primary aluminium as the capital costs of recycling represent around one tenth of the cost of new primary smelters. As a consequence the high volume of internal transactions will be reduced and external intermediate markets and prices will be more available.

## **8.2 CASE STUDY TWO: HEALTH PLC**

### **8.2.1 THE COMPANY: BACKGROUND**

This British firm is an integrated research based multinational group of companies whose purpose is the discovery, development, manufacture and marketing of ethical pharmaceuticals (i.e. prescription medicines) for sale to hospitals, pharmacies and prescribing doctors. It is therefore a company that works on the frontiers of knowledge, given that the centre of its business is the human body. The undiminishing demand for medicines by the world population testifies to the increase in human ailments. This requires constant research to discover new and more effective medicines and this makes innovation the bed-rock of success of the pharmaceutical industry.

The pharmaceuticals market is less concentrated than the aluminium market because of the absence of obvious benefits from economies of scale, hence the existence of a large number of companies, each with a small share of the world market. This leads to high degrees of competition, and success for ethical companies depends on drug improvements that result from intensive and continuous research. A newly discovered compound can take around ten years to pass through the stages of development, testing, clinical trials and regulation before it appears on the market. Hence the need for patent legislation to protect the intellectual property of the companies and enable them to recover the on-going cost of R & D.

### **8.2.2 THE COMPANY: STRATEGY AND STRUCTURE**

Health p.l.c.'s present large size and dominance is largely the result of internal expansion through the discovery and the development of major new products. As a dominant multinational group, it comprises a marketing company in most developed countries and operates a world-wide network of over 80 subsidiaries, most of them wholly owned. In terms of research activities the U.K. is the Group's base. The U.K. also had the first primary and secondary production sites and remains the largest manufacturer of Group products.

HEALTH HOLDINGS PLC  
Central International Services

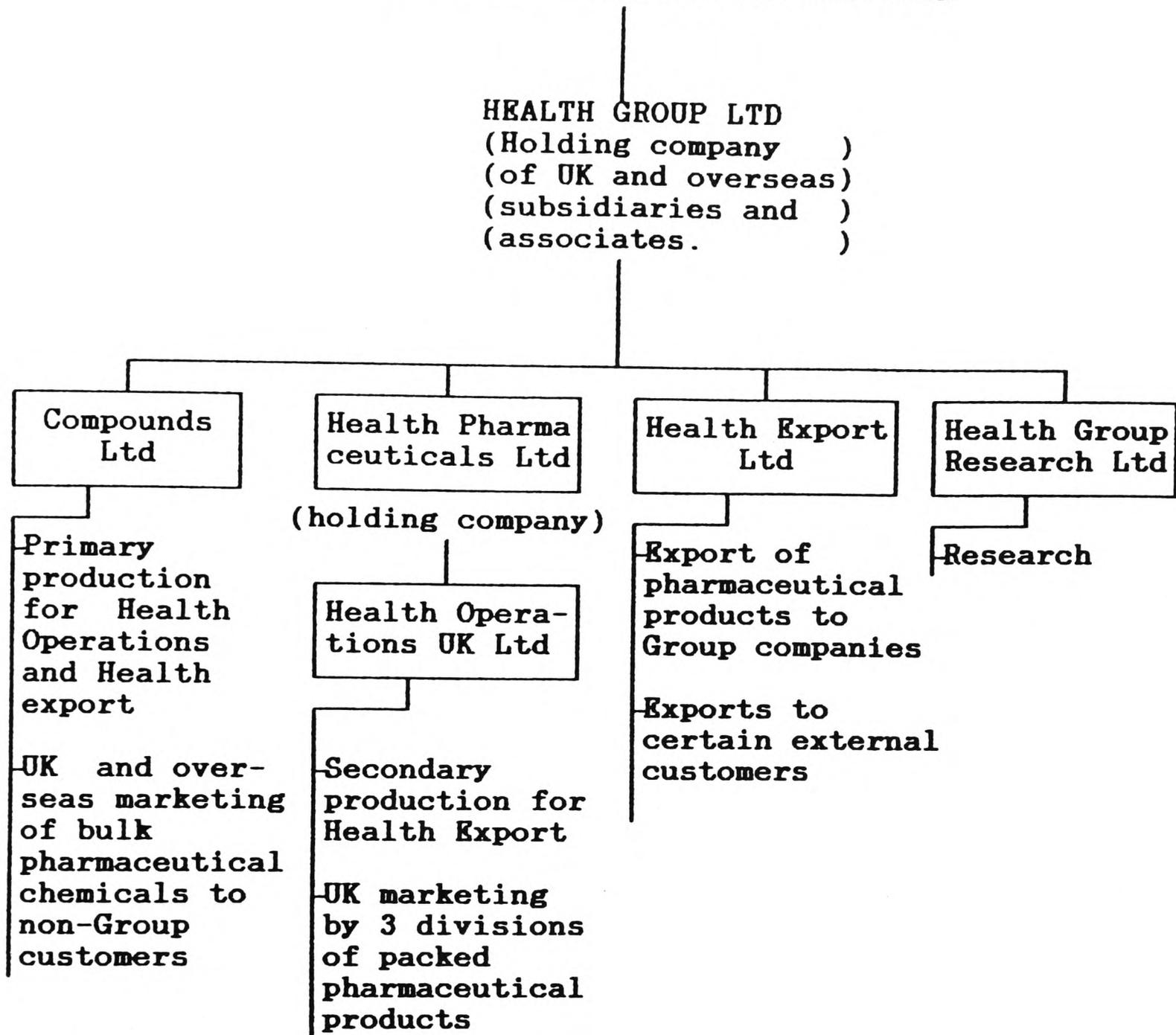


Figure 8.2: Organisation chart of Health Plc  
(chart adapted from information supplied by the respondent and company's annual report. The respondent omitted UK companies which were thought not relevant to the main aim of the survey questionnaire)

In the pursuit of its planned programme of growth in research, product development, production and marketing activities, the company's capital expenditure exceeded £150 million in 1988. The Group structure is depicted in Figure 8.2.

Figure 8.2 shows a holding company structure which, in theory, should be a collection of independent enterprises or separate investments. The respondent describes the company's structure in the following words:

“international management organisation (responsibility and measurement) reflects the Group's functional structure and comprises geographical 'profit centres' together with cost centres for research and development and the Group's central services”.

Moreover, within the U.K.,

“the nature of the Group's products and the Group's functional organisation leads to a substantial degree of autonomy in UK marketing and overhead expenditure decisions (within overall Group strategy)”.

The autonomy is restricted by the absence of external intermediate markets and thus the unavoidable internal trade and centralised TPS. In fact, it is company policy that:

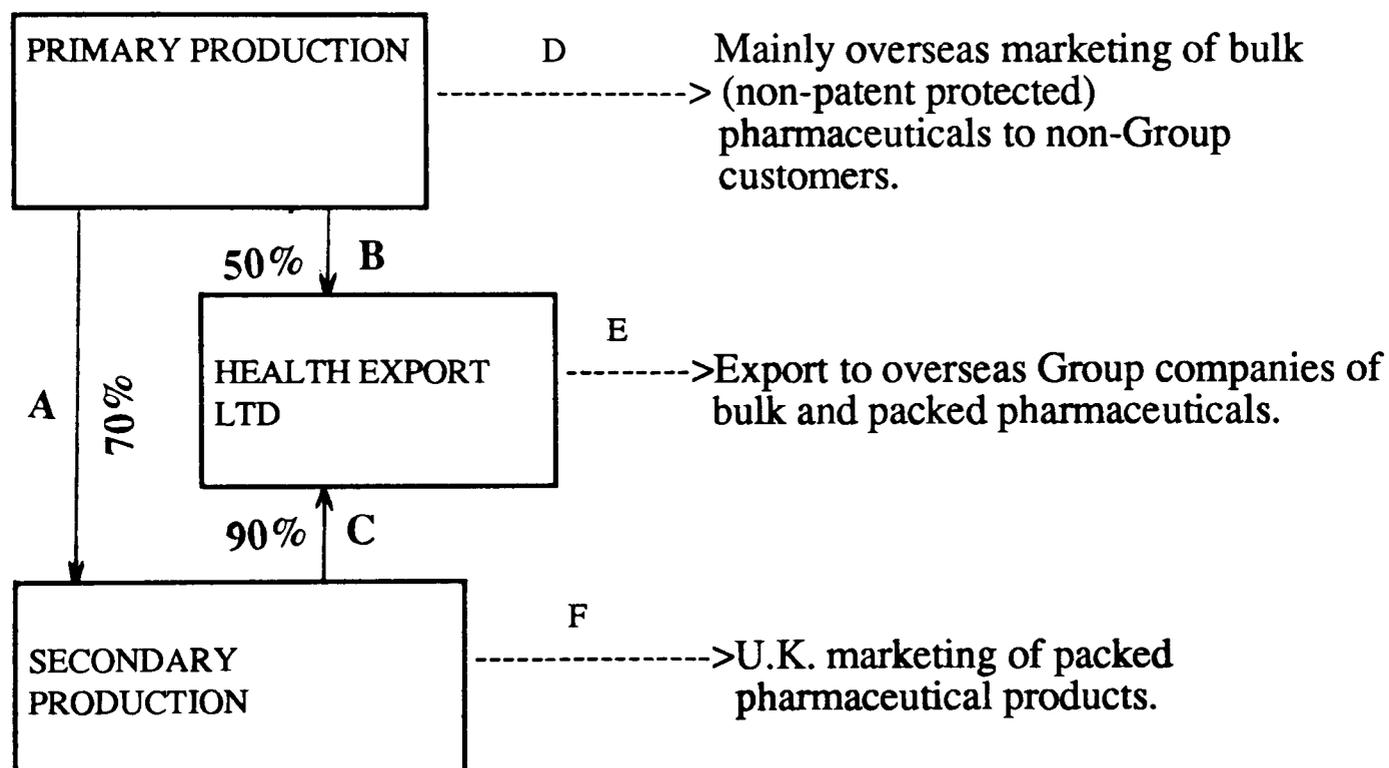
“decisions on the nature, extent and location of production facilities are more influenced by global factors. Marketing functions, therefore, have a relatively low influence on product sourcing”.

### **8.2.3 COMPANY STRUCTURE AND INTERNAL TRADE**

This diversified company presents a special and interesting case for the study of transfer pricing because of its mainly functional structure with service and market-based divisions. As a holding group for a network of companies with decentralised operational responsibility for activities, it should be expected, in theory at least, that there is little central involvement in business unit strategy development (Goold and Campbell, 1987) and a lack of internal strategic cohesion (Williamson, 1986 and Johnson and Schols, 1988). In practice, however, the cohesion exists and its basis is stated in the company's annual report as follows:

“[Health p.l.c.] runs its affairs as an integrated business where geographically dispersed activities are unified by a common strategy and are brought together to work to common policies by a highly developed system of central co-ordination”.

It may be deduced from the above that a company’s face denomination is not necessarily indicative of how its activities are organised. The existence of a high volume of internal trade and, in the U.K. only, a centralised cost-based TPS, is part of the central process of co-ordination that ensures “*that the Group’s compounds are efficiently developed from discovery to marketing*”. The sequence of product transfers between the three principal UK trading units is represented graphically as follows:



**Figure 8.3: U.K. Product flow in Health p.l.c.**

The sum of A, B and C in Figure 8.3 represents the total of domestic transfers within the U.K. The ratio of A+B+C to total U.K. company volume sales (A+B+C+D+E+F) gives a global figure of 50%. This ratio would increase to the 50-70% band if the services of the research company and central services are counted in the transfers. The existence of a high level of transfers in this functionally structured company comprised of a collection of profit and cost centres leads to the question once asked by Coase (1937) as

to why some economic activities are organised within firms, or in Williamson's (1975 and 1986) words, why there is preference of hierarchies over markets? The answer to this question in the U.K. for Health p.l.c. derives, not from its structure, but from the nature of its business. The pharmaceutical industry is quite properly the most regulated industry in the British economy. Every aspect of the industry from R & D (e.g. patent approval, permission to carry out drug trials on humans) to marketing (e.g. information on drug leaflets, persons to whom advertising may be directed) is subject to regulation, including Government control of profits through the Pharmaceutical Price Regulation Scheme (PPRS), hence, the concern with efficiency, quality and know-how protection.

Thus the nature of the industry results in creating internal markets even if the company is not formally vertically integrated. For example, all of the primary production of patent protected drugs of the U.K. subsidiary of Health p.l.c. is transferred to the U.K. secondary production company or to Health Export Ltd because there is no external market for the patent protected primary products (drugs compounds). Similarly, 90% of the secondary production is exported to Group subsidiaries, the other 10% being sold in the U.K. by the Group's U.K. marketing company.

#### **8.2.4 TRANSFER PRICING POLICIES: MANDATED COST-BASED PRICES IN A REGULATED INDUSTRY**

Transfer pricing policies of Health p.l.c. are summarised as follows:

“transfer of products between UK companies carries a fixed percentage mark-up over full cost for statutory, but for management reporting, mark-up is not important. Shared services are charged at actual cost. Products exported to overseas Group and external customers are invoiced by the exporting company at arm's length transfer prices”.

Stated otherwise, the measurement of world-wide marketing functions takes many forms, one of which is management accounting. For this:

“each UK and overseas marketing profit centre is charged in an approximate way with the standard manufacturing cost of products sourced from central supply sites in the UK and the total UK production variance (actual cost less

standard cost) is considered as a central 'cost centre'. Overseas marketing companies which perform their own secondary production carry the actual manufacturing cost into the profit centre relating to their sales”.

As mentioned earlier, transfer prices between U.K. companies are entirely based on cost because of the nature of the business. There is no external market for the primary product as it is specific to the company and it must be obtained internally. Production and overhead functions are thus considered as cost centres and judged on quality and cost efficiency. The statutory mark-up seems to be added to comply with fiscal regulations. Full cost pricing is influenced by the need to recover R & D costs as these are treated as overheads and cannot be allocated to individual products.

The approach to intra-U.K. transfer prices is centrally fixed at Health p.l.c. and the dominant cost-based transfer price is always used. Pricing of the same product transferred to different internal buyers is the same in order “*to avoid expending resources on matters which do not improve Group profitability*”. There is a great emphasis in this company on production cost and quality control.

#### **8.2.5 TRANSFER PRICING CHANGE**

The present TPS is considered efficient and satisfactory as it 1) achieves corporate goals, 2) pinpoints divisional responsibility, 3) leads to better performance evaluation, and 4) fairness and conflict resolution.

Reviews and adjustments of transfer prices take place annually (as costs are set once a year as part of the budget cycle) and as new products are introduced. These reviews are claimed to have resulted in 1) better control and performance evaluation, 2) optimal resource allocation, and 3) goal congruence.

In this highly innovative company dedicated to “*the manufacture of safe and effective medicines of the highest quality*”, U.K. transfer price change is greatly affected by the change in production costs caused by factors like raw materials and labour costs, technological conditions, rates of inflation, and new product development. To quote the respondent:

“constant review and modernisation of the procedures and technology used to achieve quality and safety are integral parts of all production stages. In addition, government regulatory agencies aim to ensure, by means of frequent inspection and other methods, that quality control is maintained. Therefore, their needs are embodied within those of the company”.

#### **8.2.6 PERFORMANCE MEASUREMENT EVALUATION AND REWARD.**

Company culture is affected by the delegation of decision-making power which enables the general managers to “*act as entrepreneurs*”. The following excerpt from the interview emphasises the importance of delegation:

“we encourage full autonomy. We don’t even have an internal audit department. Employee participation is encouraged throughout the company, at all levels”.

Although divisional managers are reported to be highly involved in key decisions like setting divisional objectives, performance measures, budget setting, in the U.K. they do not seem to have autonomy over transfer price setting and review or bargaining with other divisional managers over internal transfers. The respondent emphasised that “*because intra-U.K. prices are cost plus a fixed constant amount there is no need for manager autonomy*”.

The same basis of evaluation is used for evaluating division and managerial performance. Production performance is monitored on cost and quality and, to avoid divergence from this priority, U.K. transfer prices are based on cost. To monitor divisions activities, manufacturing company policy requires detailed monthly reporting of every production batch. Legislation determines that every pack of drugs can be traced through its batch number. All managers of production require reporting the quantity of primary product used in a particular drug, labour and overhead usage and variances as well as detailed sales and customers. Absolute profits, ratio of profits to sales, sales growth rate and market development are all important measures for the world-wide and U.K. marketing operations. It is, however, surprising that ROI and cash flow were not listed by this high capital and research and development expenditure company. A possible

reason is the high level of uncertainty of the lengthy and complex process of pharmaceutical R&D and new drug registration. Simply the time necessary for invention and bringing products to fruition cannot be determined in advance and this eats into the patent life cycle. As a consequence, this reduces the profitable life cycle of the product.<sup>1</sup>

The company presumes that if U.K. performance were evaluated solely on financial measures, divisional managers would 1) complain about the fairness of the TPS, 2) conflict over the mandated cost-based transfer prices and, 3) reduce co-operation. Since the present performance evaluation system consists of both financial and non-financial measures which are appropriate to each function, the company indicated that “*there is virtually no conflict about transfer prices in the UK companies*”. If there was conflict it would be resolved by corporate management alone as the TPS is centrally fixed.

With regard to compensation schemes, the respondent commented that there exists

“a bonus scheme for all UK employees which reflects UK production efficiency and Group profits. While managers performance is often reflected in the division performance, there is not necessarily a causal link”.

The company also has a Group Share Option Scheme but this does not represent an incentive to employees or managers to improve performance in the short term as the scheme is a long-term investment with unpredictable fluctuations and outcome.

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<sup>1</sup> a recent feed-back from the company indicated that ROI and cash flow are important measures for all business, but these were omitted because “*important international cash movements are outside the scope of this survey, for example Royalty income, dividend income, and intra-Group loans*”.

### 8.2.7 CONCLUSION

The particularities of this company do not allow us to derive general conclusions particularly because its business is the research, development, manufacturing and marketing of patent protected products. The typical internal trade refers to products with unexpired patents, i.e. products with mostly no external intermediate market. Therefore it may be worthwhile if future research focuses on pharmaceutical products not protected by patents and which are traded freely on the market. Companies which make and sell off-patent drugs do not generally carry out much research or development, nor do they need to create a market for the drugs because that has already been established by the inventor company. What could also be of interest is the effect of generic substitutes of patented drugs on prices in general and transfer prices in particular. Previous research (for instance, James, 1977) shows that earlier attempts by some governments overseas to promote the usage of generic drugs as a cost reduction technique were not successful.

Moreover, the advent of a unified European market - with probably unified regulation policies - may bring about radical changes in the pharmaceutical industry. The impact on transfer pricing policies and managerial implications may also be worth researching.

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### 8.3 CASE STUDY THREE: ELECTRONIC DUO

#### 8.3.1 THE DUO'S BACKGROUND

The Electronic Duo case consists of two independent electronics and electrical engineering companies with 40% volume transfers each. The companies are code-named Circuit p.l.c. and Silicon Ltd, the latter being a subsidiary of a major multinational, the Silicon Group. There is a noticeable dependence in Britain on the presence of a large-scale foreign-owned sector in electronics. The British company, Circuit p.l.c., has grown mainly through mergers and acquisitions and has subsidiaries throughout the world. These two companies are treated in a comparative case study because they have many things in common including the industry, the volume of internal trade, the nature of the intermediate product and transfer pricing policies. There are a lot of similarities between the activities of the two companies as is shown in the summary list below.

<b>ACTIVITIES</b>	
<b>CIRCUIT PLC</b>	<b>SILICON LTD</b>
<p>Manufacture and supply of networked communications and information systems consisting of:</p> <ul style="list-style-type: none"> <li>- computers</li> <li>- office systems</li>   <li>- communication equipment and software for business and public administration, telecommunications service providers and defence markets.</li>   <li>- advanced electronic components and electrical equipment</li> </ul>	<p>Manufacture and supply of:</p> <ul style="list-style-type: none"> <li>- lighting products including electronic lighting systems, arena-vision sports lighting systems and special lamps.</li>   <li>- consumer electronics including advanced TV and satellite systems and music systems</li>   <li>- electronic components</li> <li>- domestic appliances</li> <li>- professional products and systems including integrated business communications and information systems, and test and measurement equipment, defence systems and medical systems.</li> </ul>

### 8.3.2 STRATEGY AND STRUCTURE

The success of the above activities depends largely on technological innovation. In both companies, extensive research and development programmes worth several millions of pounds are carried out each year. For Silicon, the Group R & D effort is

“directed towards the development and control of highly complicated systems in fields such as consumer electronics, information technology and telecommunications”.

For Circuit p.l.c., the purpose is stated more specifically as

“the creation of open systems by the development of an integrated product set which is fully integratable with other manufacturers’ products”.

Both companies have a multi-divisional structure and have undergone major organisational changes due to mergers and acquisitions and strategic market decisions such as the shift of balance towards private sector and service based businesses and the move away from the defence sector.

The detailed corporate and divisional structure of Circuit p.l.c. is depicted in Figure 8.4. Only a hand drawn diagram (Figure 8.5) could be obtained during the interview at Silicon. The annual report of the latter states that the company is structured by activity and by country. The company’s product related activities are grouped in separate divisions responsible for world product policy. The general policy of the Group is determined by what is called the “*Group Management Committee*” which includes “a number of leading executives from the product divisions and corporate staff departments”. Some of the subsidiaries of the Group are completely integrated manufacturing and marketing concerns.

Similarly at Circuit p.l.c., the centre works with the business unit managers to develop strategy. With the recent re-organisation of the company which resulted in the new divisional structure (Figure 8.4) and the definition of new product-market scopes for the businesses and the divisions, the centre decided that divisional overlaps and linkages should be managed centrally.

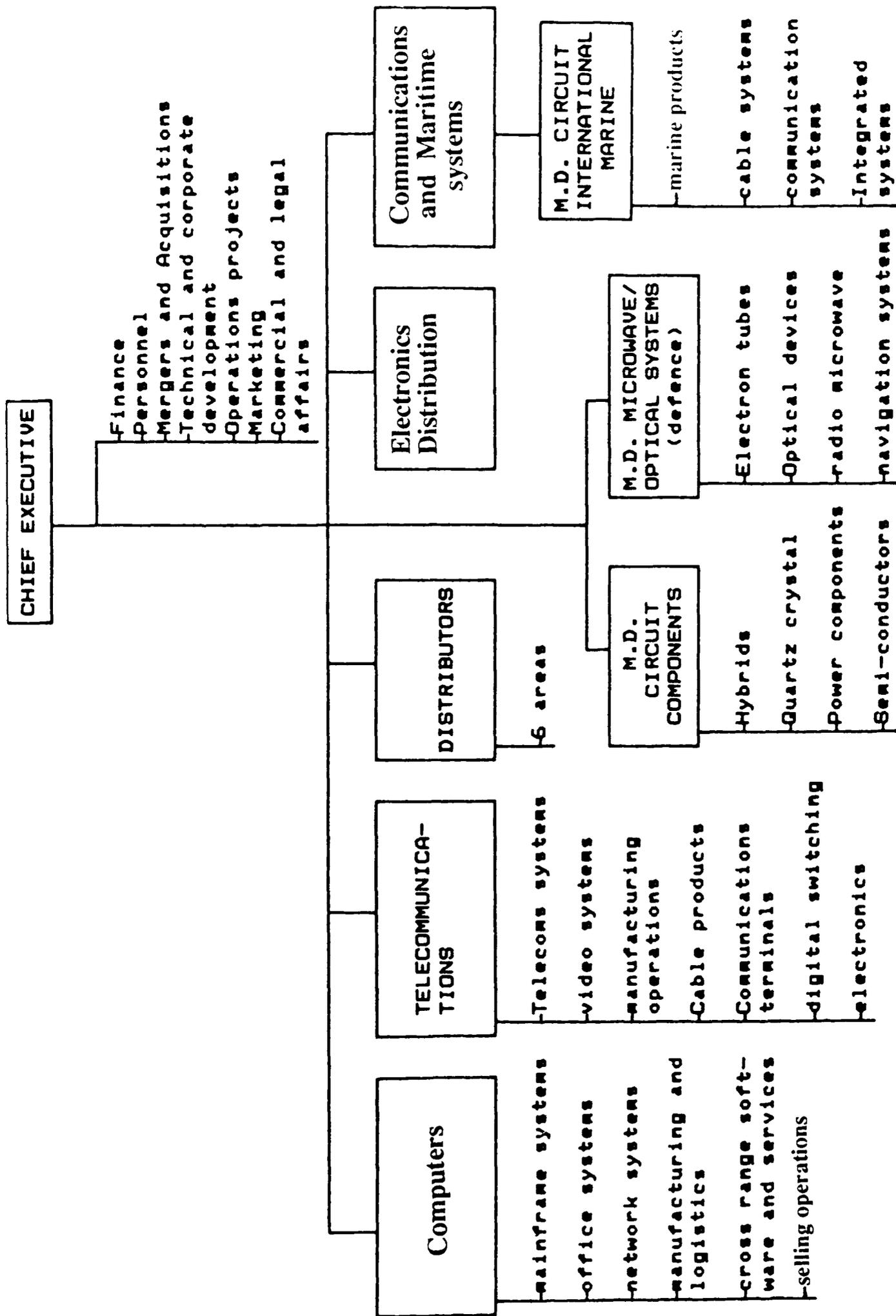


Figure 8.4 Organisation chart of Circuit Group Plc  
 (main subsidiaries and divisions)  
 (\* M.D. = managing director)

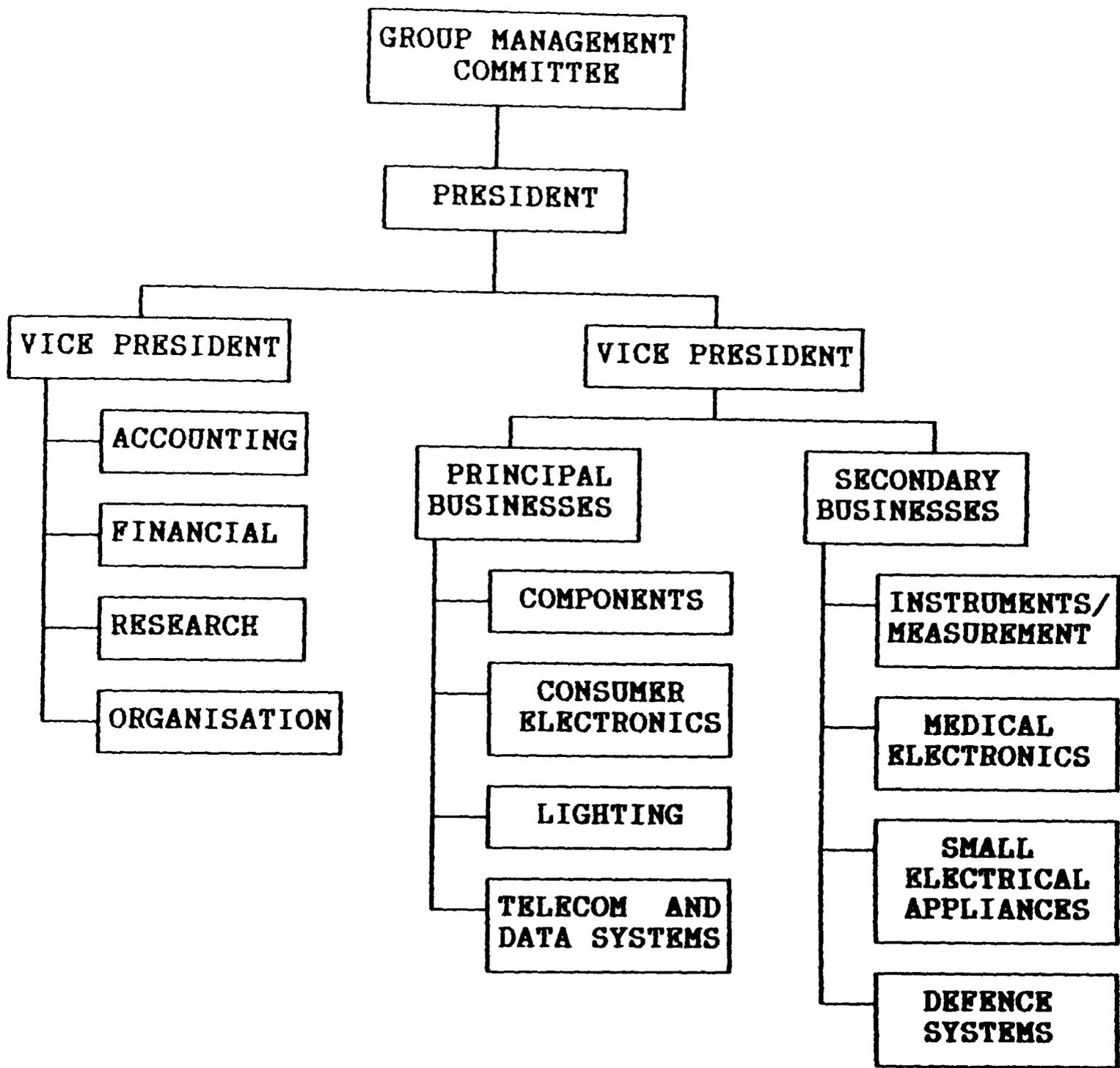


Figure 8.5 Organisation chart of Silicon Group Plc

### 8.3.3 INTERNAL TRADE AND MANDATED COST-BASED TRANSFER PRICING IN A COMPETITIVE HIGH-TECH INDUSTRY

Both companies reported a volume of internal trade of 40% of total annual sales, with most of the transfers concerning the core business. For example, at Silicon the components division is an important supplier to other parts of the company, mainly to the consumer electronics division.

In both companies there are restrictions on external sourcing but more so in Silicon as the typical transfer accounts for over 75% to the buying division compared to only 25% in Circuit. This implies that the buying division of Circuit p.l.c. relies for the supply of components on outside sources which could be local or foreign. Knowing that the information technology (IT) industry is very competitive, notably with the surge of the Japanese in micro-chip production, the dependence on foreign sources for the supply of components creates the pressure for collaboration between local companies. This urge for collaboration at Circuit p.l.c. resulted in the last few years in mergers and acquisitions, the success of which is yet to fully materialise but there are some major long term technology collaborations that have proved very successful.

Divisional managers at Silicon are reported to have "very low" discretion on "buying externally items available internally". Circuit indicated that "*local procurement of products can only be done with the agreement of our centralised manufacturing division*". The same varying degrees of divisional influence apply to setting and reviewing transfer prices.

The policies governing the pricing of internal trade at Silicon are contained in the following excerpt from the parent company's financial statement for 1988:

"the transfer prices charged for the delivery of products between consolidated companies in different regions of the world are determined on the same basis as the sales to third parties. In this respect, the factors which are considered include the conditions of delivery, the terms of payment, the quantities and the continuity of deliveries and the local practices and customs in the various countries. Taking these factors into consideration, the current market price is used as the transfer price for inter-regional deliveries whenever possible. In the event that equivalent or similar products are not

readily available from independent suppliers in the same markets, the prices for inter-regional deliveries are determined based on the actual manufacturing cost plus a margin to cover the normal profits and general expenses of the supplying company”.

Domestic transfer prices at the British subsidiary are based on the standard unit full cost. The company is now reverting to market-based pricing because until now the transfer price was determined by the selling division and this has led to internal conflict. The buying division was put at a disadvantage while facing increasing competition and not being able to trade freely in the external intermediate market. The extremely intense competition in the IT market led to sharp falls in prices and loss of control of production costs, especially development costs.

At Circuit p.l.c. transfer pricing is also cost-based with the standard unit full cost as the prevailing price. The transfer price is centrally determined but with consultation of the divisions involved in the transfer. However, *“the selling divisions cannot negotiate the price”*.

The predominance of the standard full cost transfer price in the Electronic Duo is mainly justified by claimed positive effects on economic decisions and the achievement of corporate goals. Overall the main objective assigned to the TPS is the evaluation and control of divisional performance, though neither company sought divisional autonomy or managerial motivation from its cost-based TPS.

#### **8.3.4 TRANSFER PRICING CHANGE**

Each of the two companies claimed that the dominant transfer price is always used and, for consistency and cost control, no price variation is allowed on the same transfer to different internal buyers. Circuit p.l.c. is also concerned with *“facilitating world-wide transfer price negotiations with UK and local fiscal authorities”*.

Five common factors are considered to substantially influence the need for review and adjustment of transfer prices. These are 1) changes in raw materials and labour costs,

2) re-evaluation of standard costs, 3) rates of inflation, 4) new product development, and 5) technological conditions. The review takes place four times a year in Circuit whereas Silicon operates an annual review because:

“standard prices are calculated each year as at first January and these are indexed each month in relation to changes in external factors (e.g. inflation, and exchange rates)”.

In neither company is the review of transfer prices a means of resolving conflict, although the centralisation of the TPS is seen as the major potential source of conflict in both companies. For Silicon the “*dominant transfer pricing system has been in operation for many years*”.

Similarly, neither company considered organisational and strategic change as important a factor for altering transfer pricing policies. The recent restructuring of Circuit p.l.c. does not seem to have any impact on its cost-based TPS. The company did, however, report a major transfer pricing policy change but this was due to other reasons as explained by the respondent:

“we used to operate at cost plus a mark-up to recover development cost. The mark-up became a vehicle to achieve desired margins (i.e. manipulated) and to give marketing messages. This resulted in pricing to customers being cost-based rather than market-based. It was felt that better commercial decisions would be made based on 'real' transfer prices”.

It results from the above that the nature of the information technology sector - in terms of sensitivity and market structure - seems to dictate the adequate transfer pricing policy, and not necessarily the organisation structure or the "profit centre" concept.

### **8.3.5 PERFORMANCE EVALUATION AND REWARD AND MANAGERIAL ATTITUDE**

The Electronic Duo companies, like many other participating companies, consider performance evaluation and control a priority objective of their TPS. Divisional and managerial achievements are measured on the same basis in both companies but Circuit indicated that:

“certain management performance is measured on personal objectives which may not be based on accounting information, e.g. market share”.

Another difference between the companies lies in the measurement pattern as Silicon judges results on the basis of "absolute profits" and "adherence to budgets" whereas Circuit gives priority to profit ratios and cash flow performance beside complying with budget targets. Since the investment programmes aim at keeping abreast with technological advance, the emphasis on ROI at Circuit reflects the desire of the British company, Circuit, to see rewarding returns on its investments. The difference may also indicate that Silicon, the foreign subsidiary, operates within spending limits determined by the parent company, and hence, the emphasis on profitability through the containment of costs.

Both companies reported that, when performance is evaluated solely on financial measures, divisional managers bias and build slack in reports to the centre. Circuit also added that they complain on the fairness of the TPS and that can lead to increased competition and mistrust between divisions. Hence, the company's policy is to discourage disputes. For Silicon - in which the transfer price has so far been determined by the transferor division and where *“disputes are not allowed at all”* - the major reason for conflict over transfer pricing is the restricted freedom of external sourcing. This creates mistrust between divisions given the control objective of the TPS and the inability of the buying division to influence the transfer price. At Circuit restrictions on external sourcing are not a major conflict factor as internal transfers account for only 25% of the transferee's business. However, there is still *“cost-based dialogue”* between divisions because of the impact of TPS on divisional profits. As stated earlier, transfer prices are based on cost and are established by the manufacturing division and the selling divisions cannot negotiate the price. Therefore, *“there are no 'disputes' as such. They can put pressure on the manufacturing division to obtain cost reductions”*. Normally corporate management intervenes to settle disputes at Circuit by *“emphasising common interests and disregarding differences”*.

The Electronic Duo companies agree on promotion, pay increase and bonuses as alternative and complementary rewards for satisfactory performance, and transfer and dismissal (in extremis) as punishment for unsatisfactory performance. Successful divisional managers are also consulted on strategic decision-making at Circuit, and help is provided to unsuccessful ones. The latter are advised or trained at Silicon to overcome weaknesses.

### 8.3.6 CONCLUSION

The Electronic Duo case is another example that proves that there is no cure-all transfer pricing formula for all situations and reflects the necessity to locate the problem not only in its organisational context but to take into account also the technological and market considerations. The IT market is described by Silicon to be

“in a state of flux [because] of the rapid trend in hardware and software towards standard operating systems and open systems and the radical changes in these products’ distribution patterns”.

The pervasive and vital role of IT for businesses and the increasing use of personal computers in networks now demands that systems are able to communicate with each other, and this can only be achieved through common design standards. This is already part of corporate strategy in the Electronic Duo, as mentioned earlier in Section 8.3.2. Hence, the need for collaboration between the electronic companies. Of interest for future research are the implications of the trend for collaboration on the IT market structure, vertical integration, divisional linkages, transfer pricing and managerial attitudes to shared control. The effect on transfer pricing is particularly important for two main reasons. First, collaboration is likely to result in increased levels of internal trade. Secondly, survival in a very competitive industry characterised by technological advance, depends partly on price control. Now with the decision of many companies to move away from the defence sector which is based on fixed-price contracts, it is likely that transfer prices will be market-oriented.

## **8.4. CASE STUDY FOUR: SMOKE LTD**

### **8.4.1 THE COMPANY: BACKGROUND**

The participating company is a subsidiary of a multinational Group whose companies manufacture a wide range of well-known brands of cigarettes, cigars and smoking tobaccos for distribution and sale through wholesale and retail outlets throughout the world. The Group also has interests in luxury consumer products (fashion, fragrances, etc.), printing, confectionery and agriculture. The principal activities of Smoke Ltd are the manufacture in the U.K. of cigarettes and other tobacco products under the Group's trademarks and the distribution of these products in the U.K. and overseas. The company grew over the years mainly through acquisitions and recently through participation in several licensing and manufacturing joint ventures in those countries which favour such schemes over importing.

### **8.4.2 THE COMPANY: STRATEGY AND STRUCTURE**

There are two essential elements in the company's strategy: a) participation in joint manufacturing ventures overseas and b) its policy of diversification into tobacco (or core business) and non-tobacco products as was mentioned above. The respondent commented that:

“the company's decision to set up joint ventures is usually taken on commercial grounds and voluntarily - for instance, in order to gain greater access to an overseas market which has high import tariffs on exported finished products. However, in certain countries, government policy, especially concerning the total or partial privatisation of parastatals, may encourage the company to set up a joint venture”.

The decision of many overseas countries to set up local manufacturing joint ventures has direct effect on companies like Smoke Ltd, especially because “*markets in Western Europe (including the UK) continue to show static or slightly declining demand*”. In the U.K. the steady decline in home consumption since 1979 is partly attributed to widespread

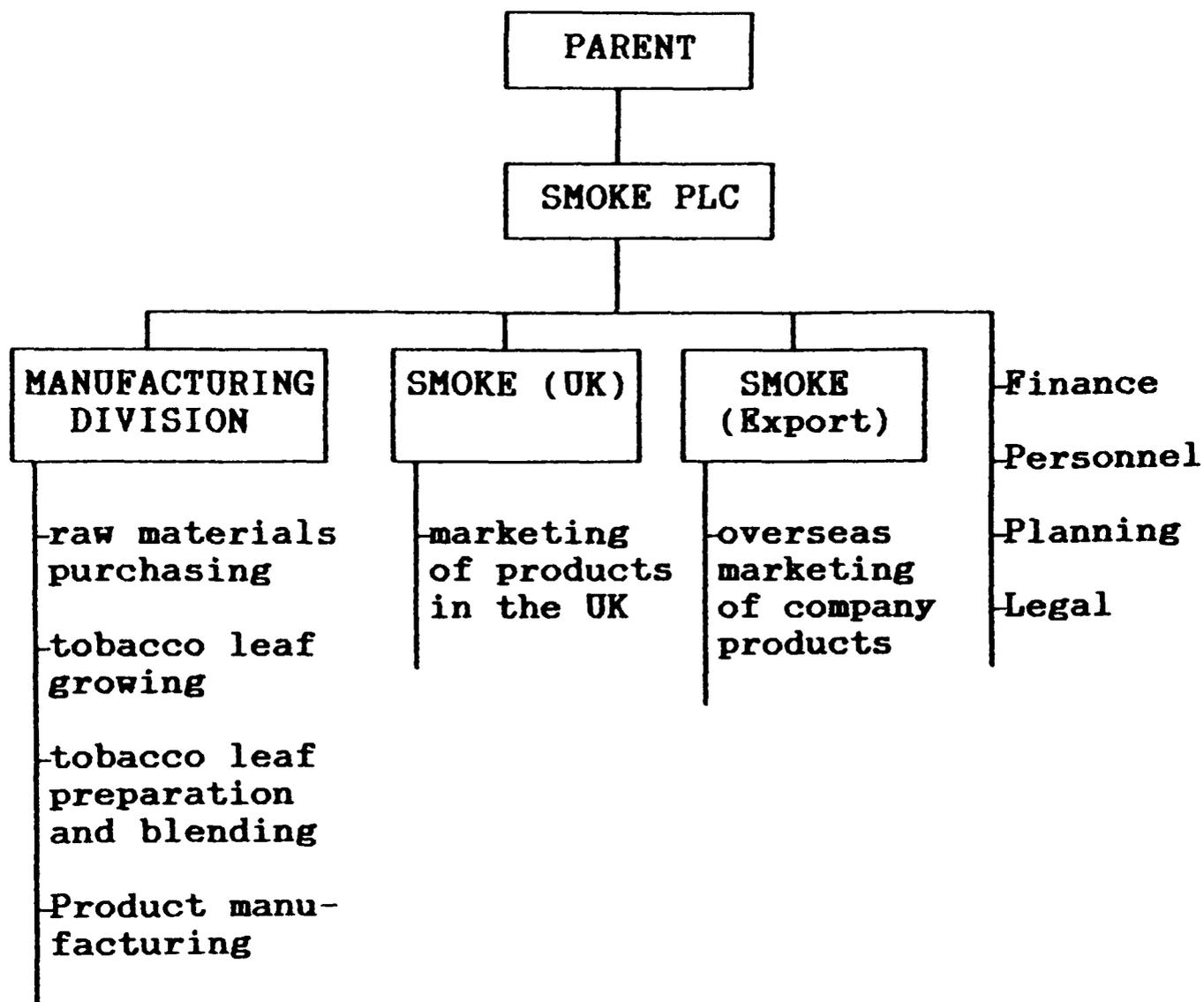


Figure 8.6 Simplified organisation chart of Smoke p.l.c. based on sketch by respondent and company annual report.

public awareness of the health hazards of smoking (Godfrey and Powell, 1987). To offset the loss of income from diminishing exports, Smoke Ltd decided to participate in joint ventures overseas.

Moreover, in view of the decreasing demand, the Group as a whole divested from under-performing assets and disposed of some businesses and, at the same time, invested in fields outside the core business. These strategic changes resulted in structural changes. The Group's annual report states that:

“long standing, deep seated problems have been tackled. Our core business has been re-organised and equipped to contend with a harder trading environment; in addition to rationalization measures, we have carried out major structural changes in the UK operating subsidiary”

Figure 8.6 reproduces the U.K. company's organisational chart sketched by the respondent during the interview. In reality this vertically integrated company is decentralised geographically but not managerially because its divisions are not autonomous. The marketing divisions are considered as profit centres as they are directly involved in the external market for the sale of final products but not for material procurement. The purchase of raw materials is the responsibility of the manufacturing division which is treated as a cost centre.

### **8.4.3 VERTICAL INTEGRATION AND INTERNAL TRADE**

The production process is described as "simple" and consists of three sequential stages 1) primary, 2) product making and 3) packing of final product. In the primary stage the dry tobacco leaf pass through initial processing to restore moisture then is blended and stemmed. To make the final products (cigarettes and other tobaccos), filters and flavouring essences are combined with the stemmed leaf (or lamina). Other materials such as paper liners, cardboard cartons, printed labels, cellulose film wrappers are then needed for packing and parcelling.

The company reported a 90% volume of internal trade which consists of the percentage of the manufacturing division's production sold to Smoke U.K. and Smoke

Export. This is the highest volume of transfers reported by all the 33 companies participating in the survey. The core business of the company consists of tobacco products and, as mentioned earlier, is subject to rules and specifications which makes external intermediate markets for brand products unavailable.

It should be noted that the high level of transfers concerns only the intermediate product. Tobacco companies rely on outside sources for many of the materials used in the product making process. This creates backward linkages with suppliers of tobacco leaves (the U.K. is a non-leaf growing country), filters, flavours, packaging materials, etc. The tobacco industry also creates forward linkages as companies rely on a chain of specialist tobacconist shops, grocers, liquor stores, supermarkets, etc. for the distribution of final products. For instance, the Group's annual report mentions that: *"the Group's products are also supplied to international shipping lines, airlines and duty free shops"*.

#### **8.4.4 TRANSFER PRICING POLICIES: MANDATED COST-BASED PRICES FOR BRANDED PRODUCTS**

The specificity of products and therefore the non-existence of external intermediate product markets, justifies the standard unit full cost transfer price that the company applies to the typical internal trade. Labour costs are considered fixed as they do not fully vary in proportion to output. It was mentioned in the returned questionnaire that the risk of cost inefficiencies being passed on to the marketing divisions is eliminated as variances between the standard and the actual transfer price are either incumbent on or beneficial to the manufacturing division. Asked on whether inefficiencies would be better eliminated if divisions were allowed to negotiate internal trade and pricing, the respondent made it explicit that

*"negotiated transfer prices are not desirable and, if they were allowed, they would be for a maximum of six months. We are very concerned about management time that could be wasted because of divisional negotiation, especially for our type of business as there is not really much choice for the transferee with regard to sourcing and pricing. Thus it is understandable that the TPS is directly controlled by headquarters"*.

A recent communication from the respondent stressed the fact that this is a complex issue and that changes are now taking place in the company. For instance, it was indicated that *“we measure inefficiencies through both financial and non-financial measures”*.

As with the aluminium industry, the pricing policy in the tobacco trade is dominated by the manufacturers (Price Commission, 1976). In the U.K. retail prices of tobacco products are highly affected by direct and indirect taxation which is an important source of government revenue (PEIDA, 1985). Compared to imported cigarettes British brands are more expensive because U.K. manufacturers prefer to produce higher quality cigarettes at higher cost since the U.K. high specific tax is constant in monetary value. Thus the proportion of the specific tax in the final price of high quality cigarettes will be minimised (Godfrey and Powell, 1987). However, the recent tax hikes do not encourage price stabilisation. The effect of taxes (especially indirect taxes) on the final price may explain the absence of a mark-up from the full cost transfer price.

The dominant transfer price is always used and, for comparability of market performance, the same price is charged when the same product is transferred to different marketing companies. Moreover, “the same transfer price rules apply to trade with affiliates”. Both the determination and the review of transfer prices are primarily centralised decisions.

#### **8.4.5 TRANSFER PRICING CHANGE**

The present TPS is considered efficient and satisfactory and has resulted from changes to a previous system where the standard variable cost was the dominant transfer price. The company indicated that “the growth of business and capacity excesses required more precise definitions and better knowledge of market conditions”. Customer relationship, increase in market share and short-term profitability are all high priority management objectives.

Generally, the review and adjustment of transfer prices take place annually in accord with the budget cycle, the development of the operating plan and the fiscal year end, or

“more frequently if there are major changes in circumstances (e.g. 5% +)”. Nonetheless, despite the “substantial changes made in structure and in mode of operation”, these changes are reported to have no influence on the need to alter the cost-based TPS.

#### **8.4.6 PERFORMANCE EVALUATION AND REWARD AND MANAGERIAL RESPONSE**

Corporate policy requires monthly divisional reports to the centre and divisional performance is evaluated with a combination of financial and non-financial measures. Individual performance is particularly related to budget targets. Performance evaluation and control is a priority objective of the TPS.

In contrast to the multiple performance measures, the incentive scheme is limited to only pay increase for satisfactory results, and advice and training for unsatisfactory performance. Conflict over transfer prices and mistrust between divisions and the centre arise when performance is evaluated solely on financial measures. This attitude should be expected in a company where divisional performance is directly affected by a totally centralised TPS. In fact, the respondent mentioned that the two major causes of conflict are “the importance of the transferred commodity to the division” and “the centralisation of transfer pricing policy making”. Furthermore, conflict is resolved by corporate management alone. The concentration of decision-making power at corporate headquarters is not seen as a contributor to generating conflict. The role of the centre in this necessarily vertically integrated company is seen as that of “arbiters, brokers, or if needed, dictators”.

#### **8.4.7 CONCLUSION**

The case of Smoke Ltd has once again shown that the context in which a particular TPS is applied is crucial to the study of internal trade and pricing. The high level of internalised transactions is affected by the degree of concentration of the industry and the absence of external intermediate markets for branded products. The transfer price, however, is not affected by structural changes as much as it is affected by product specificity, the non-existence of an external intermediate market and the impact of the U.K. tax system on tobacco products.

## 8.5 OVERVIEW OF THE CASE STUDIES

The analysis contained in the case studies presented in this chapter is mainly based on corporate views as divisional information was not accessible and, as such, impartiality can hardly be guaranteed. Future research which has access to divisional information would be more conclusive. Nevertheless, these cases have stressed many of the findings of the previous chapters, notably the belief that there is no one best formula for the transfer pricing problem which is more of an organisational, behavioural and market than of a technical issue. In the two highly vertically integrated companies, Bauxite and Smoke, almost all of the intermediate production is consumed internally but their transfer pricing policies are not identical. The other three companies also have high levels of internal trade although they are not fully integrated. Each of these companies has a particular TPS. Hence, an evaluation of these case studies in the light of the more comprehensive framework developed by Spicer (1988) is worthwhile. As divisional information was not accessible either in the questionnaire or interview stage in any of the five companies, only some of Spicer's hypotheses will be selected for this brief evaluation of the cases.

All the five companies studied have very high volumes of repetitive internal trade and are mostly diversified into related markets within their particular industries, some of them with speciality products with no outside intermediate markets. The degree of standardisation or specialisation varies from one company to another but four of the companies have investment specific products.

Bauxite p.l.c has a Speciality and Aerospace Division whose products are designed for high performance applications especially in the aerospace, defence and transportation markets. The degree of specialisation applies to a greater or lesser extent to its Chemicals division and Separations division.

The Pharmaceuticals company Health p.l.c. derives most of its income from patented (or speciality) drugs which are the product of long years of scientific research to which huge budgets were committed.

The Electronic Duo companies operate in the very competitive and sensitive high technology sector and survival in this market depends on efficient innovation. Most of the specificity of investments concerns components which constitute in this case the bulk of internal trade.

Finally, the investment characteristic of the product is perhaps less present with the tobacco company Smoke Ltd which faces a shrinking market because of increasing public health awareness. Although the company specialises in brand tobaccos, their production is performed through repetitive processes using usual machinery and materials. These five cases do not provide, however, a uniform response to Spicer's hypotheses.

**Hypothesis 1:** *The dimensions of intra-firm transfers of intermediate products are jointly related to a firm's diversification strategy, its product design and its organisational structure.*

The dimensions of internal trade of intermediate products are not jointly related to a firm's diversification strategy, its product design and its organisation structure for Health p.l.c. and Smoke Ltd which have 50% and 90% internal transfers respectively. The cases of Bauxite p.l.c. and the electronics companies satisfied the assumptions of this hypothesis better.

**Hypothesis 2:** *Centralised control of the make-buy-decision depends on a) the degree of the specificity of investment, b) frequency and volume, and c) the degree of uncertainty and/or complexity of the internal transaction.*

Restrictions on external trading of the intermediate product exist in each of the five companies but with varying degrees depending on the particularities of the product, the significance of the transfer to the division and whether an external intermediate market exists. It appears that all five companies conform to a certain extent to Spicer's second hypothesis.

**Hypothesis 4:** *The greater (a), (b) and (c) above, the more likely companies would de-emphasize performance measurement and incentives based on divisional profits.*

Despite the disparity observed between companies as to their characteristics and performance evaluation patterns, none of them entirely de-emphasised profitability in evaluating and compensating performance. This is contrary to the assumptions of Spicer's fourth hypothesis.

**Hypothesis 6:** *Transfer pricing policies depend on the degree of customisation of the transfer product.*

The foregoing analysis of each individual case seems to support all of Spicer's assumptions of the contingent nature of transfer pricing policies on the specificity of design of the intermediate product. Internal manufacturing costs are the primary basis for setting transfer prices in four of the companies (Health p.l.c, Electronic Duo and Smoke Ltd) and play a major role in Bauxite p.l.c. This brief testing of the applicability of Spicer's framework indicates that there is some practical evidence to support the necessity of an organisational study of the transfer pricing problem. Future empirical research carried at divisional levels would provide stronger grounds for a more detailed investigation.

## **CHAPTER 9: EVALUATION OF THE HYPOTHESES AND CONCLUSIONS FOR FUTURE RESEARCH**

This chapter draws on the analysis and findings in the previous chapters in order to evaluate the five research hypotheses formulated at the outset for the organisational and behavioural study of the transfer pricing problem. A second evaluation of the results will also be made using Spicer's (1988) theoretical model. Finally, opportunities for future research are then suggested.

### **9.1 EVALUATION OF THE RESEARCH HYPOTHESES**

#### **9.1.1 NECESSITY OF THE HYPOTHESES**

The scope and methodology of the present research project was summarised in the introductory chapter where a definitional and research framework was outlined. The necessity of the hypotheses formulated in that framework stems from the focus on the organisational and behavioural context of the transfer pricing problem and the keenness to try to bridge between theory and practice.

#### **9.1.2 INTERDEPENDENCE, DIVISIONAL AUTONOMY AND ACCOUNTABILITY AND THE EFFICIENCY OF THE TPS**

*Hypothesis 1: The acceptance of the transfer pricing system is highly effected by the extent of decision-making responsibility delegated to divisional management and the way in which the accounting system measures that responsibility.*

The statements in this main hypothesis were intended at delineating the organisational context of the transfer pricing problem by focussing on the two key features of the M-form company, that is the need to decentralise and the necessity to integrate. The next three hypotheses derive from this main hypothesis and are meant to elucidate further the relationship between the efficiency of the TPS and the two key variables of divisional autonomy and performance evaluation and reward.

There are two statements contained within this hypothesis. First, it is assumed that divisional managers of interdependent divisions would reject the TPS if their authority over decisions is curtailed. Second, it is assumed that the acceptance of the TPS is contingent upon the accounting performance measures or APM. The relationship between the TPS and these two variables was discussed in the previous three chapters. Overall it was found that divisional managers were reported by the sample companies to have high levels of discretion on decisions but this discretion was restrained in many companies by limits on trading in the external intermediate market and the setting of transfer prices. These restrictions particularly applied when the internal transaction was of an important size and recurring and the transfer price was dominantly cost-based.

The acceptance-rejection of the TPS is reflected in the causes of conflict discussed in Chapter 6 and the pattern of undesirable managers' behaviour reported by 21 of the 33 participating companies and reproduced in Chapter 7. Performance evaluation was found to rely heavily on accounting data, i.e. focuses on financial criteria and divisional involvement is minimal with regard to setting the criteria on which they are judged. Conflict over transfer prices was essentially caused by the impact of the TPS on divisional results, particularly when the transfer transaction is important and the transfer pricing decision is centralised.

It can be concluded that, by being an important feature of the decentralised but interdependent environment, the TPS is in reciprocal interaction with the level of divisional autonomy and responsibility and the role of the accounting information system in judging performance. It should be added that divisional autonomy is affected by the size and frequency of the transfer transaction and whether the pricing policy is cost or market-based.

### **9.1.3 INTERDEPENDENCE, DIVISIONAL AUTONOMY AND THE PMERS: THE MOTIVATIONAL DETERMINANT**

*Hypothesis 2: The evaluation/reward of divisional performance in the large company on the basis of a single corporate objective (e.g. maximum profits) can have adverse motivational consequences, particularly if divisional managers have no or limited control over the factors they are judged on.*

There are at least four reasons that support the statements in this second hypothesis. First, the dominance of profits as a priority objective in all the 33 companies; second, the profit orientation of the TPS; third, the lack of divisional autonomy on transfer price setting and review and design of the PMERS; and finally, the reported dysfunctional behaviour by divisional managers.

However, as adverse motivational consequences were observed in 21 companies (that is including a large number of companies with market-based transfer prices and unrestrained external trading), it seems that the PMERS plays the most important role in shaping managerial behaviour than any other company characteristic. That is to say, if the single profit objective is predominant and divisional autonomy is restricted for one reason or another but the divisional manager is cocooned as far as rewards and punishments are concerned, the likelihood of adverse behaviour is minimised. This is so because the main cause of such behaviour is removed. Similarly, if the divisional manager has freedom on transfer transactions and prices but lacks control over the PMERS, there is no guarantee that the divisional manager under review would remain indifferent to the situation she/he faces.

### **9.1.4 INTERDEPENDENCE AND THE TPS-PMERS CO-EXISTENCE**

*Hypothesis 3: The greater the impact of the transfer pricing system on performance evaluation of profit centres, the greater the conflict over transfer prices*

The fact that transfer-price transactions can create conflict in the multi-divisional company is something to expect as responsibilities become less clear to define. Whether

this is ambiguity by design or by necessity, it remains that the gravity and the frequency of the conflict is obviously related to the TPS-PMERS paradox. The analyses in both Chapters 6 and 7 provide enough evidence to substantiate this claim. In line with the arguments in the preceding sections, it can be added that whatever transfer pricing policy corporate management would like to prevail, the acceptance by divisional management of the TPS and therefore the alignment of interests, depends on the perceived equity of the PMERS.

#### **9.1.5 INTERDEPENDENCE, AGENCY RELATIONSHIPS AND THE CULTURE METAPHOR**

*Hypothesis 4: The degree of dysfunctional behaviour is likely to be affected by company culture and division managers' perception of fairness of the transfer pricing system.*

Dysfunctional or undesirable behaviour was discussed in Chapter 6 and 7 through the examination of conflict and divisional managers' reactions to the financial performance measures. The implications of the previous analysis for the above hypothesis are now examined. In this hypothesis the additional element of corporate culture is assumed to partly explain the existence and extent of (perceived) dysfunctional behaviour.

Organisational culture may be defined as the “*pattern of beliefs and expectations shared by the organization's members. These beliefs and expectations produce norms that powerfully shape the behaviour of individuals and groups*” (Schwartz and Davis, 1981, p. 33) who learn to solve problems (Bernardi, 1988). Culture is therefore a metaphor which represents a causal relationship between aspirations and the norms to materialise them (Dillard and Nehmer, 1990).

In the context of the present study of large decentralised companies, the focus is on two groups of organization members: corporate managers and divisional managers. In the previous three chapters it was found that the beliefs and expectations of these two groups do not always converge and hence the existence of the agency problem of conflict of interests. The norms examined related to the TPS (or the integrative mechanism in the

presence of joint responsibility) and the PMERS (or the formal management control system). Moreover, since the data gathered only gives corporate perceptions, the culture metaphor is inevitably represented here with some degree of partiality.

The pattern of corporate beliefs and expectations could be directly read from the priority of objectives and the degree of decision-making autonomy described in Chapter 5. Divisional beliefs and expectations are indirectly deduced from the pattern of managerial behaviour as perceived by central management. This was discussed at length in Chapter 7, especially through the agency theory framework.

The preponderance of the profit objective in the participating companies is the central theme of corporate strategy, and the predominance of APM ensures that divisional managers internalise this core objective and aspire to optimise it. The reported undesirable behaviour pointed at the divergence of expectations of the organisation's members or the principal and the agents, and was argued to be encouraged by the management control system which is fundamentally the set of norms that shape behaviours. It was also argued that, since corporate perceptions of undesirable behaviour were based on recurring experience, the reported managerial behaviour had become imbedded in the companies' cultures. This is despite the fact that many companies reported having operated changes in their previous TPS and that these changes brought about positive results. The explanation that can be offered about the recurrence of dysfunctional behaviour is that the changes operated were only partial as they only affected the TPS which is only one part of the set of the formal cultural norms. It can also be added that in a historical perspective the changes in the TPS, while maintaining a financial-based PMERS aimed at getting divisional managers to align their expectations to company ideology and objectives, i.e. imbedding ideology and objectives in the formal system which is the TPS. In other words, given that the reward system is a vital mechanism for promoting and shaping culture, the non-adjustment of the PMERS to changing circumstances implies that one type of behaviour is being rewarded or punished while another is desired.

Therefore, unless the change affects the whole system including the PMERS, undesirable behaviour can always be expected particularly because of the perceived lack of fairness of the TPS. In other words, the answer to the agency problems associated with joint responsibility does not reside only in the choice of the particular transfer pricing policy but essentially in adapting the entire MCS to structural, strategic, ideological and environmental developments. Otherwise managerial resistance to the norms that are meant to shape their behaviour will perpetuate and the conflict of beliefs and expectations will persist. Thus it can be said that the above arguments support the validity of Hypothesis Four, especially in those companies where centralisation adds to the felt and perceived lack of fairness of the TPS.

#### **9.1.6 THE STRATEGY-STRUCTURE DETERMINACY OF THE TPS**

*Hypothesis 5: Changes in organisational structure and strategy result in changes (or need for changes) in transfer pricing policies.*

In global terms this hypothesis was also supported through the detailed analysis in Chapter 6. Nevertheless, the evaluation of the preceding hypotheses shows that other factors which are of a psychological nature also press for the need for change. Since the organisation is a collection of individuals with different abilities and expectations, their interaction with the formal and informal organisational variables results in behaviours which may or may not be optimal. For instance, the empirical evidence has shown that the divisional manager's response to the way his achievement is evaluated and rewarded can bring about change in the TPS. The examples in Chapter 6 and 8 of companies that operated changes to their previous TPS indicate that it was managerial pressure and the keenness to align interests that forced these changes. It can therefore be concluded that the above hypothesis is confirmed to the extent that its validity is viewed in terms of the validity of the other hypotheses. Further evaluation of the results is attempted below through Spicer's theoretical framework.

## **9.2 OVERVIEW OF THE RESULTS IN TERMS OF SPICER'S THEORETICAL FRAMEWORK.**

In conclusion to his suggested research hypotheses Spicer (1988), who has developed the most comprehensive organisational framework to date for the study of the transfer pricing problem, has called for empirical investigation to test the validity of his hypotheses. Such a testing was briefly done in the previous case-study-based chapter. It should be mentioned that Spicer emphasises the role of investment specificity and complexity of the internal transaction and this requires divisional and sub-unit information. The non-availability of such information for the present study does not allow a comprehensive evaluation of the results in terms of Spicer's model.

### **9.2.1 Spicer's hypothesis 1: *The dimensions of intra-firm transfers on intermediate products are jointly related to a firm's diversification strategy, its product design and its organisational structure.***

It can be said that this hypothesis is generally supported by the findings in Chapters 6 and 8. The relationship between internal trade and diversification strategy depicted in Chapter 6 showed that high volumes of transfers were associated with low and moderate diversity. The dimension of internal trade was also found contingent on the divisionalisation structure. The relationship between internal trade and product design could only be referred to in the very few cases of companies with the highest volumes of transfers and that is due to the lack of information on divisional operations.

### **9.2.2 Spicer's hypothesis 2: *Centralised control of the make-buy decision depends on the degree of a) the specificity of investment, b) frequency and volume, and c) uncertainty and/or complexity of the internal transaction.***

The issue of external procurement of the intermediate product was investigated in Chapter 6 (Section 6.3.1). As hypothesized by Spicer, it was found that centralisation of the make-buy decision was associated with high volumes of transfers. The investment specificity of the transfer transaction was also alluded to in some cases, for instance in four of the five case studies in Chapter 8. It must be stressed again that divisional information is essential for a comprehensive evaluation of the degree of investment specificity and uncertainty and/or complexity associated with the internal transaction.

**9.2.3 Spicer's hypothesis 3:** *Well specified arbitration procedures are associated with the degree of a) investment specificity, b) frequency and volume, and c) uncertainty and/or complexity or the internal transaction.*

No particular evidence could be found to support Spicer's assumption that, when intra-firm transfers are recurrent and material in volume, firms have well developed arbitration procedures to overcome information asymmetries and to promote coordination and adaptation between divisions. In Section B of the survey questionnaire (Question QB4) companies were requested to mention whether they had regulations for the enforcement of buy/sell agreements and to supply a copy of these regulations. Only four companies indicated having such rules but no company disclosed any specific information.

**9.2.4 Spicer's hypothesis 4:** *The greater the degree of a), b) and c) above, the more likely companies would de-emphasize performance evaluation and incentives based on divisional profits.*

The analysis throughout Chapter 7 showed that, contrary to Spicer's claim, no company de-emphasized performance measurement and incentive mechanisms based on profitability. As far as transfer pricing is concerned the analysis in Chapter 7 shows more support to Onsi's (1970, p. 535) observation that "*the problem is material when the performance of a divisional manager is measured based on profit, and incentive compensation is so determined*", and Abdel-khalik and Lusk's (1974, p. 23) proposition that "*transfer pricing may blur the evaluation perspective when the evaluation of performance is strictly profit-oriented*".

**9.2.5 Spicer's hypothesis 5:** *The greater the degree of a), b) and c) above, the more likely the conflict over internal transfers.*

Only the first part of the hypothesis relating to the "*general conditions under which conflict is most likely to occur*" is considered here. The analysis in Chapter 7 supports Spicer's theory that the occurrence of conflict is strongly associated with the dimensions of the internal transaction and the profitability-gear PMERS.

**9.2.6 Spicer's hypothesis 6:** *Transfer pricing policies depend on the degree of customisation of transfer product.*

Despite the lack of divisional and sub-unit information, there is some evidence in Chapter 6 and Chapter 8 to support the statements contained in this hypothesis. The relationship between idiosyncratic products, specificity of investment and cost-based transfer prices is obvious in the companies with the highest volumes of transfers. In general, the intermediate products of these companies do not have external markets and, if the market existed, the make-or-buy decision was centralised. In Chapter 7 it was shown that conflict over transfer pricing was specifically present in these companies.

For the rest of the sample companies, and especially for the majority with low levels of transfers and market-based prices, it can be deduced from their industrial classification that their intermediate products are either the standardized or the low/moderate customized types. Central intervention on intermediate product trading was found to be minor and negotiation was reported by twelve companies. The case of customized intermediate product can be illustrated with the case of the automobile company mentioned in Chapter 6, (Section 6.1.4 and Section 6.2.3). The company has a volume of transfers of only 4%. It was argued, on the basis of previous research, that it was customary in the British motor industry to rely on external sources for the supply of vehicle parts. However, the development of new car models or the revamping of existing models requires parts with new specifications. Hence the parts maker must invest in appropriate facilities to meet the specificity of the intermediate product. Given the low level of internal trade and the heavy reliance on the outside market, vertical integration takes place within the industry, not within the particular firm and the supplier's price can be considered as a transfer price (Monden and Nagao, 1988).

### **9.3 COMPARISON OF THE RESULTS WITH PREVIOUS EMPIRICAL STUDIES**

A word of caution should be said here about the viability of comparing the results across different time horizons. The pattern of response to questionnaire surveys, interviews, the observations and conclusions that a researcher can make are affected by the time and space contexts in which the research is conducted. The changes that have taken place in strategy, structure and management styles of companies over the last few

decades all affect the contents and outcome of empirical research. Langrana (1977, p. 165) concluded that “*an exhaustive discourse on transfer pricing problems and possibilities is neither feasible nor desirable. Corporate idiosyncrasies spell out the basic requirements and they are to be met with ingenuity*”. Moreover, the methodology adopted by the particular researcher also has a direct impact on the analysis and the outcome.

A total of 47 empirical studies on the transfer pricing practices of companies in ten different countries were examined in Chapter 4. As the present study was restricted to domestic transfers the comparison will exclude previous findings on multinational transfer pricing. The most obvious common result that the present study shares with all the previous works is that transfer pricing is a practical problem across the whole spectrum of industrial sectors and that individual companies endeavour to find appropriate solutions to the problem. However, it was concluded that most of the previous studies were limited to exposing companies’ practices and fell short of giving explanations as to why particular policies were adopted. Therefore a central feature that distinguishes the present study from those in Chapter 4 is the organisational approach adopted and the emphasis of the behavioural aspects of the problem, i.e. the focus on the interaction of the human factor with company characteristics.

### **9.3.1 COMPARISON WITH PREVIOUS BRITISH STUDIES**

The three previous PhD-based projects completed by Channon (1973), Emmanuel (1976) and Mostafa (1981) on British transfer pricing are of particular interest to the present comparison.

All of Channon’s (1973) findings on the large companies he studied are mirrored in the observations made on the present sample of very large companies. For instance, Channon’s findings on the relationships between high volumes of transfers, diversification pattern, vertical integration and centralised cost-based prices are duplicated in Chapter 6 of this thesis. The same applies to the profit-based PMERS and the preference of stable salaries to profit related pay by divisional managers.

The similarities with Emmanuel's (1976) study reside in the variety of transfer prices with the predominance of market prices, the impact of the TPS on divisional performance evaluation, and the constriction of the external trading and pricing decisions in many companies. There is no corroboration, however, of Emmanuel's finding that companies with market and negotiated transfer prices evaluated performance on a profit basis while those with cost-based prices evaluated performance in terms of cost performance. Profitability and profit-g geared PMERS apply to all the 33 companies in the present survey.

Some of the results of the present study also confirm those reported by Mostafa (1981) in her study of transfer pricing determinants. The predominance of market prices, the unpopularity of marginal price and shadow price transfers, the profit objective of the TPS and its impact on performance are comparable to the findings reported in Chapters 6 and 7 of this thesis.

Many of the similarities outlined above are also shared with the remaining ten studies on British practice discussed in Chapter 4 as well as the overseas surveys briefly revisited below. The recurring themes are the dominance of market prices, the profitability objective, the TPS-PMERS relationship and the locus of the transfer pricing and sourcing decisions when the transfer transaction is important.

### **9.3.2 COMPARISON WITH AMERICAN STUDIES**

In the forefront of overseas transfer pricing practice the American experience takes precedence because of the historical development of the M-form company. Apart from the recent study by Eccles (1985), all the American surveys were similar to the British ones in terms of scope and methodology. The emphasis of the transfer pricing techniques and the neglect of the organisational context is a common feature. Eccles' contention that "*without mandating transfer transactions it was difficult or impossible to implement a strategy of vertical integration*" was substantiated with the evidence in Chapter 6 and the case studies developed in Chapter 8. In essence Eccles' proposal on the structure-strategy determinacy of transfer pricing is corroborated by the results of the

present study. But it was added in Section 9.1.6 above that psychological factors also influence the TPS because of the centrality of the human factor in the TPS-PMERS paradox.

### **9.3.3 COMPARISON WITH OTHER STUDIES**

The findings of the present study on decentralisation, transfer pricing practices, external sourcing and profit orientation of the TPS and the PMERS bear some similarity to the Swedish case (Arvidsson, 1971), the German case (Drumm, 1972), the Indian case (Govindarajan and Ramamurthy, 1983) and the Japanese and Canadian cases (Tang, 1979 and 1981).

The Australian survey (Chenhall, 1979) is the one study that compares best because of its scope and coverage. The similarities are significant with regard to the bases of divisionalisation, diversification strategy, the independence of volume of internal trade from company size; the multiplicity of transfer prices; the dominance of market-based prices and profit-based PMERS. One main differing result is the reported degree of autonomy enjoyed by divisional managers in Australian companies. Chenhall also did not address the crucial issue of internal conflict.

The Yugoslav case (Sacks, 1983) locates the transfer pricing problem in a different political context. Much has been written about self-management in Yugoslavia, and the results of Sacks' study show great contrast between the philosophy of decentralisation in socialist and Western countries. Compared to the present study, the Yugoslav practice shows more divisional autonomy on intermediate product trading and pricing and the dependence of pay on performance. The comparison is, however, limited because of the lack of information on dimensions of transfer transactions, divisionalisation structure and corporate strategy.

## 9.4 CONCLUSIONS AND SUGGESTIONS FOR FUTURE RESEARCH

### 9.4.1 CONCLUSIONS

What can first be concluded from both the theoretical and empirical presentations that comprise this thesis is that transfer pricing has been a subject of concern for both academicians and managers for at least the last fifty years. However, the extensive literature review, and particularly the empirical works discussed in Chapter 4, have revealed that the study of the transfer pricing problem has tended to be confined to the examination of the technicalities without relating them to the attributes of the divisionalised company which is the seed-bed of the problem. No wonder, therefore, that more often than not previous studies ended up describing transfer pricing practice without giving explanations as to why particular policies prevailed. As early as 1929 Camman (p. 37) commented that *“the further one enters into the subject, the more perplexing become the considerations”*. More recently Wraith (1983, p. 16) commented that *“transfer pricing is a necessary evil despite its inherent difficulties”*. Vancil (1978) succinctly summed up these frustrations by noting his disappointment at not being able to arrive at any definitive conclusions despite the wealth of data gathered. He concluded that *“the issue remains a perennial puzzle to academicians while practitioners continue to cope. I wish the best of good fortune to the next researcher to tackle the problem”*. Hence, *“this topic offers much potential for further research”* (Vancil, 1978, pp. 142 and 176).

Through the organisational and behavioural framework adopted for the present research it was possible to give explanations as to why companies use particular transfer pricing policies. It was indicated at the outset that, because transfer pricing consisted of both a movement in time and space and the placement of a monetary value, the transfer pricing process involved the interaction of six elements. These are the transferred commodity (WHAT), the subject or agent (WHO), the place (WHERE), the time (WHEN), the reason (WHY) and the procedure (HOW). These elements were translated into the research hypotheses which aimed at elucidating the TPS-PMERS relationships in the large company by examining companies' transfer pricing practices and their

managerial implications. The application of the agency theory model to the analysis in Chapter 7 added substance to the necessity of locating management control issues into their organisational and behavioural contexts.

The timely framework proposed by Spicer (1988) also added substance to this perspective. The summary evaluation of the results in terms of Spicer's model, in particular through the case studies in Chapter 8, has revealed why previous research fell short of explaining the underpinning reasons of observed transfer pricing practices. In short, these practices cannot be dissociated from their organisational and behavioural contexts.

Notwithstanding the above conclusions it remains that, by being part of the management control system of companies, the transfer pricing mechanism operates in a constantly changing environment that affects and is affected by both the organisational set-ups of companies, their strategies, their cultures and their people. Hence, the subject still offers opportunities for future research.

#### **9.4.2 SUGGESTIONS FOR FUTURE RESEARCH**

One of the major obstacles in doing research on transfer pricing is the difficulty to obtain sufficient and reliable information. One limitation of the present study is its complete reliance on data supplied by corporate headquarters and this only gives a one-dimensional view of the problem. As management accounting systems measure production-related activities at the divisional and sub-unit levels, and corporate management relies on information supplied by divisional managers for decision-making and control, future research on transfer pricing requires ideally access to such information. A data-base comprised of both corporate and divisional data would provide a more balanced organisational and behavioural investigation of the transfer pricing problem in the light of agency theory and Spicer's model. The TPS-PMERS paradox would be better understood if direct access to divisional views could be secured.

Beyond the data collection problem, the future researcher could consider including the following points in their investigation:

- 1) the relationship between transfer pricing and the different stages of the life cycle of the intermediate product,
- 2) the degree of idiosyncrasy of the intermediate product and at what stage of its life cycle is the investment in specific human and/or physical capital more pertinent,
- 3) the reasons why the particular product is idiosyncratic and the market position of the company with regard to that product,
- 4) the relationship between product idiosyncrasy, the dimension of the transfer transaction and the locus of the pricing decision,
- 5) the extent of divisional control over overheads and the degree of discretion divisional managers have on investing in specific assets,
- 6) the attitude to risk taking and risk avoidance by both corporate and divisional managers,
- 7) the relationship between risk attitude and job stability,
- 8) the effects of quality requirements, on-time delivery, automation, etc. on the cost content of cost-based transfer prices,
- 9) the causes, the severity and the frequency of conflict over transfer pricing and the way conflict is managed,
- 10) the availability of external intermediate markets and market prices and the effect of the locus of the procurement decision on the efficiency of the TPS and the PMERS,
- 11) the elements involved in the negotiation process and, if any, the arbitration rules in the case of unresolved disputes,
- 12) the expectations of both corporate and divisional managers from the employment contract,

- 13) the perceptions of divisional managers of the leadership style and the management control system in general and their conceptions on aligning corporate and personal objectives.
- 14) the involvement of divisional managers in the budgeting process and what place transfer pricing occupies in this process,
- 15) the role of relative performance evaluation (RPE) and non-accounting based PMERS in reducing dysfunctional behaviour.

The above suggestions could be integrated in an organisational and behavioural research package that could cover both the domestic and multinational dimensions of the transfer pricing problem. The TPS-PMERS paradox will be accentuated with transfer pricing across national frontiers if only because of differing cultural factors between the country hosting the subsidiary and the parent company's base country.

As a final note it should be added that the experience of the present study has shown that in-depth research on selected companies that could be later developed as case study material may be the best approach to adopt to understand real world phenomena and contribute to knowledge.

## LIST OF APPENDICES

APPENDIX	CONTENT	PAGE
<b>A</b>	Inland Revenue notes on multinational transfer pricing.	<b>323</b>
<b>B</b>	Hirshleifer's theoretical model for the two division company.	<b>327</b>
<b>C</b>	Gould's reconciliation of differing market prices for the same intermediate product for a two-division company.	<b>330</b>
<b>D</b>	Literature reviewing (R) or proposing (P) particular transfer pricing policies (1950s to 1980s).	<b>333</b>
<b>E</b>	Table 4.1: major (published) empirical studies on transfer pricing (and related topics) in chronological order.	<b>337</b>
	Table 4.2: Number of studies by year and country.	<b>341</b>
<b>F</b>	Figure 4.1: World-wide trend of empirical research on transfer pricing since 1956.	<b>342</b>
	Figure 4.2: distribution of research by decade.	<b>342</b>
<b>G</b>	Questionnaire package including:	<b>343</b>
	1) - cover letter;	
	2) - re-drafted cover letter;	
	3) - follow-up letter.	
	4) - title page;	
	5) - notes for completing questionnaire;	
	6) - 8-page questionnaire;	
<b>H</b>	Acronym key and sequence number of coded questionnaire entries.	<b>356</b>

## APPENDIX A

### THE TRANSFER PRICING OF MULTINATIONAL ENTERPRISES

#### NOTES BY THE UK INLAND REVENUE

##### 1. Introduction

These notes are primarily designed for the guidance of overseas companies which have, or may be thinking of setting up, subsidiaries in the UK; but the law and practice described apply to UK resident companies generally.

##### 2. General - the arm's length principle

Prices charged in transactions between connected companies in a multinational group (transfer prices) may be designed to meet the convenience of the group as a whole. They will not necessarily produce a figure of profit or loss which can be accepted for tax purposes. The UK law therefore, in common with that of many other countries, provides that these prices may be adjusted in arriving at the taxable profit or allowable loss of a UK taxpayer. The price to which they may be adjusted is the "arm's length price". This is the price which might have been expected if the parties to the transaction had been independent persons dealing at arm's length ie dealing with each other in a normal commercial manner unaffected by any special relationship between them.

##### 3. Circumstances in which adjustments may be made to transfer prices

The relevant law is largely contained in Section 485 of the Income and Corporation Taxes Act ("ICTA") 1970. This provides the Inland Revenue with power, for example, to adjust a transfer price to the arm's length price in transactions between a resident and a non-resident body of persons when one controls the other or both are under common control.

##### 4. Body of persons

A "body of persons" includes a partnership as well as a company.

##### 5. Residence of a company

The general rule is that a company is resident where the central control and management of its trade or business is carried on. The application of the rule is a question of fact.

##### 6. Control of a company

Control of a company has to be distinguished from the control and management of its trade or business. For the purposes of Section 485 it is defined in particular to mean, as in Section 534 of ICTA 1970, the power of a person to secure that the affairs of the company are conducted in accordance with his wishes, inter alia, by holding shares or possessing voting power in relation to that company (or any other company) or by virtue of any powers conferred by the articles of association or other document regulating that or any other company.

##### 7. Scope of UK transfer pricing law

Section 485 applies to sales of goods and other property, lettings or hiring of property, grants and transfers of rights, interests and licences and the giving of business facilities of whatever kind. Loan interest, patent royalties, management fees, and payments for services are thus within its scope as well as payments for goods. Contributions by a subsidiary towards costs incurred by the parent company are similarly within its scope.

continued...

## APPENDIX A continued

### 8. Tax returns - assessment of profits - onus of proof - rights of appeal

The UK system of taxing profits requires the taxpayer to make a return of his profits each year to the appropriate Inspector of Taxes. It is normal for his return to be accompanied by accounts and computations in some detail in order to substantiate the return. But the Inspector, if no return is made or if he is dissatisfied with a return which has been made, is however empowered to assess the liability to tax on the basis of his own estimate of the profits. The taxpayer has a right of appeal to independent Commissioners (and from the Commissioners, on a point of law, to the High Court and beyond) but it is for him in the first instance to disprove the correctness of the assessment in such an appeal and not for the Inspector to prove that it is correct.

### 9. Adjustment by agreement

If, however, the Inspector takes the view that it may be necessary to assess the profits on the basis of his own estimate he will normally seek, in any case where substantial amounts are at stake, to come to an agreement on the matter with the taxpayer either by correspondence or, very probably in a case where the adjustment of transfer prices is in point, by discussion round the table as well.

### 10. Requests for information

If it seems to the Inspector that it may be necessary to adjust a company's transfer prices for tax purposes he will normally, therefore, in the first place, ask the UK company for the information necessary to decide whether adjustments should be made and what sort of adjustments. There is no standard list of questions - each case will need to be looked at in the light of its own special features. But the Inspector will generally be interested in such matters as who owns or controls the company, what the nature of the trade is, how any group of which the company is a member is organised, what are the functions of particular companies in the group, what the results of the UK companies have been, how far they have come up to expectations and so on. The need for answers to more detailed questions may emerge as the discussions proceed.

### 11. Powers to require information

The Inland Revenue have power in certain circumstances to require the production of information for tax purposes and, in particular under Section 17 of the Finance Act 1975, they may require a company to produce information which is relevant to the adjustment of transfer prices (not necessarily its own transfer prices) under Section 485 of ICTA 1970. Powers provided under Section 17 also include in certain circumstances the power to require the production of information (including books and accounts) from a UK resident company, which is relevant to transactions with a 51% subsidiary resident outside the UK, including books and accounts of the subsidiary. This also applies where the transactions are between UK resident and non-resident companies both of which are 51% subsidiaries of the UK resident company. (The UK parent company may however appeal against the requirement to an independent body of Commissioners.) In addition, in certain circumstances the Board may require books and accounts and other documents or records which are relevant to a transfer pricing adjustment under Section 485 to be produced for examination by an Inspector of Taxes on the taxpayer's premises.

### 12. Confidentiality

Officers of the Inland Revenue are governed by very strict rules about the confidentiality of information received by them in the course of their duties. They are prohibited from disclosing such information except for tax purposes and, within that limitation, in very limited circumstances strictly defined by law.

continued...

## APPENDIX A continued

### 13. Exchange of information with other countries

Disclosure is permitted (under strict safeguards) to other countries' tax authorities under agreements for the relief of double taxation and under the Directive concerning mutual assistance between tax authorities of the member States of the European Communities. (The Inland Revenue may also receive information from other countries under these instruments.)

### 14. Inland Revenue Organisation

The Inland Revenue maintains a network of local tax offices spread over the whole of the UK and normally the affairs of a taxpayer will be mainly dealt with by a local Inspector of Taxes. But transfer pricing problems involving substantial amounts of money or important matters of principle may be dealt with instead by a section of the central head office in London. (The affairs of oil companies including matters of transfer pricing are dealt with by a centralised Oil Taxation Office in London.)

### 15. Objectives and method of approach in adjusting transfer prices for tax purposes

The objectives of both central and local offices are however the same. The principal objective is to ensure that the UK taxpayer is paying the proper UK tax on its profits under the law. The Inland Revenue recognise, however, that answering the many detailed questions which may be necessary for the achievement of this objective may impose an onerous burden on the senior staff of companies or their advisers and they aim to keep these questions to a minimum by concentrating on the main pricing issues involved.

### 16. Methods of and considerations taken into account in arriving at arm's length prices

In ascertaining an arm's length price the Inland Revenue will often look for evidence of prices in similar transactions between parties who are in fact operating at arm's length. They may however find it more useful in some circumstances to start with the re-sale price of the goods or services etc and arrive at the relevant arm's length purchase price by deducting an appropriate mark up. They may find it more convenient on the other hand to start with the cost of the goods or services and arrive at the arm's length price by adding an appropriate mark up. But they will in practice use any method which seems likely to produce a satisfactory result. They will be guided in their search for an arm's length price by the considerations set out in the OECD Report on Multinationals and Transfer Pricing. (This Report examines the considerations which need to be taken into account in arriving at arm's length prices in general and also in particular in the context of sales of goods, the provision of intra group services, the transfer of technology and rights to use trademarks within a group and the provision of intra group loans).

### 17. Settlement of problems

The Inland Revenue recognise, as does the OECD Report, that the evidence needed to establish an arm's length price may be hard to come by and difficult to interpret and they recognise also that decisions on pricing in the arm's length situation would have had to be taken in the light of the facts which could have been known at the time when the decision was made. It is with considerations like this in mind that they are concerned to settle transfer pricing adjustments as far as possible by discussion and agreement with the companies concerned. They would hope as a result also to establish a reasonable basis of understanding with the companies for the future (possibly on the basis of a review after a number of years).

continued...

## APPENDIX A continued

### 18. Consultation with other countries

The Inland Revenue recognise that transfer pricing adjustments may have a consequence not only for UK tax but also for foreign tax. They are able, under the terms of some seventy agreements for the relief of double taxation and the prevention of fiscal evasion, to exchange information with the tax authorities of their partner countries on transfer pricing matters among others and they often do this for the purpose of ensuring that tax is adequately charged in the UK. On the other hand, they are also able to consult and do consult with partner countries with a view to preventing unrelievable double taxation arising from (among other causes) the adjustment of transfer prices. A taxpayer who fears that unrelievable double taxation may result in his own case from some action of the tax authorities of a treaty partner may ask the UK Inland Revenue to enter into such consultations and they will do so whenever the need arises. All that such a taxpayer need do is to write a letter putting his request, and giving the relevant details, to the International Tax Policy Division of the Inland Revenue in Somerset House, London. For such consultation to be effective however it will usually be necessary for the request to be made in good time so as not to be frustrated by the expiry of legal time limits for tax adjustments either in the UK or in the other country.

### 19. Time limits for claims for credit

So far as concerns claiming relief for foreign tax against UK tax the normal rule is that a claim in respect of any income, must be made not later than six years from the end of the chargeable period for which the income is chargeable to UK tax. However where such credit has been rendered insufficient by reason of an adjustment to the other country's tax the time limit for a claim to additional credit is six years from the time when the adjustment was made - Section 512 ICTA 1970.

### 20. Status of these notes

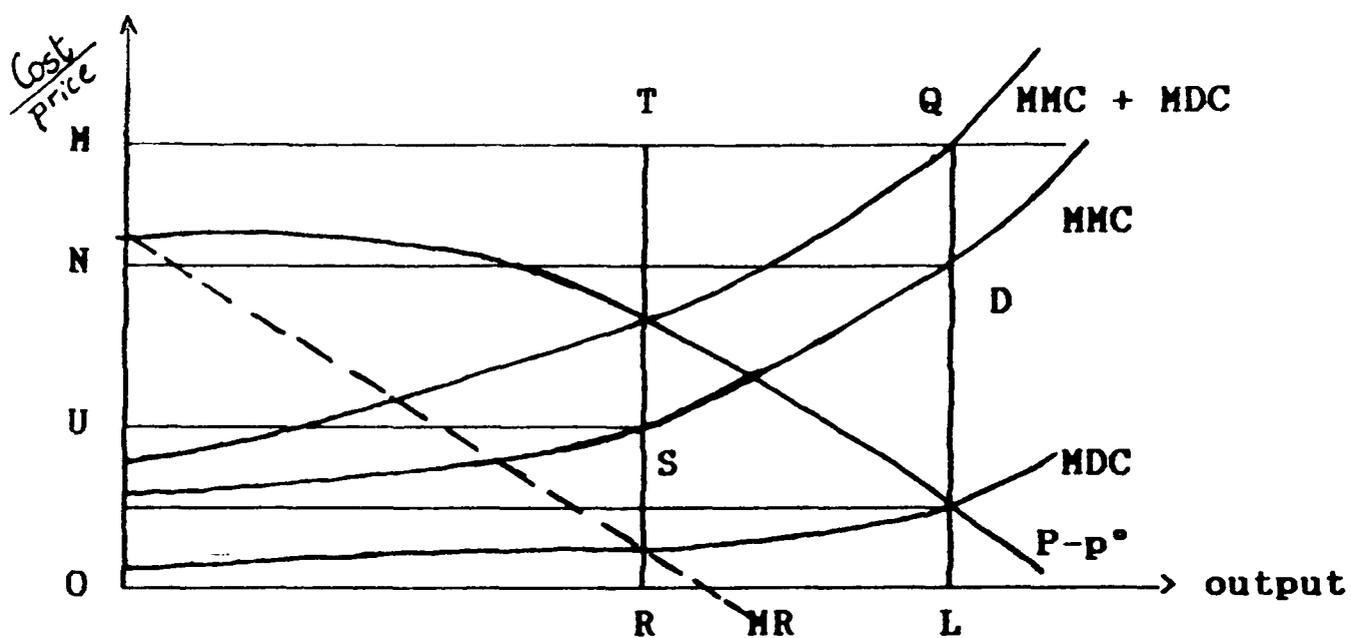
These notes are for guidance only. They express the Inland Revenue's view of the law but they have no legal force and they do not affect any rights of appeal on points concerning a taxpayer's liability. Similarly any description in these notes of Inland Revenue approaches to the problem of transfer pricing or practices in dealing with this problem are not to be taken as limiting the Department to such approaches or practices in any particular case.

Inland Revenue  
Somerset House  
Strand  
LONDON WC2

Situation 1: No external market for the intermediate product: transfer price for best joint level of output.

A joint level of output is determined for the two divisions so that the distribution division (or transferee) will handle exactly as much output as the manufacturing division (or transferor) will produce.

Let  $Q_m$  be the output of the transferor and  $Q_d$  the output of the transferee,  $MMC$  the marginal manufacturing cost and  $MDC$  the marginal distribution cost, and  $P$  the competitive market price for the final product.  $MTQ$  is the demand curve for the final product



The optimal output is given when the combined marginal costs of both divisions are equal to the external market price  $P$  of the final product, i.e.  $MMC + MDC = P$ . Supposing also that a schedule is agreed upon between the two divisions at any transfer price  $p^*$  for the intermediate product, the transferee can then determine its average revenue curve which is the difference between the market price  $P$  for the final product and the transfer price  $p^*$ . The transferee's output is at point  $OL$  where  $MDC = P - p^*$ . The output of the transferor is also at  $OL$  as it is the point where  $MMC = p^*$ . Given the equations  $MMC + MDC = P$  and  $MDC = P - p^*$  it results that  $MMC = P - MDC = P - (P - p^*) = P - P + p^* = p^*$ . The transfer price will be set at  $LD = ON$  and the shaded areas represent the individual profit for each division.

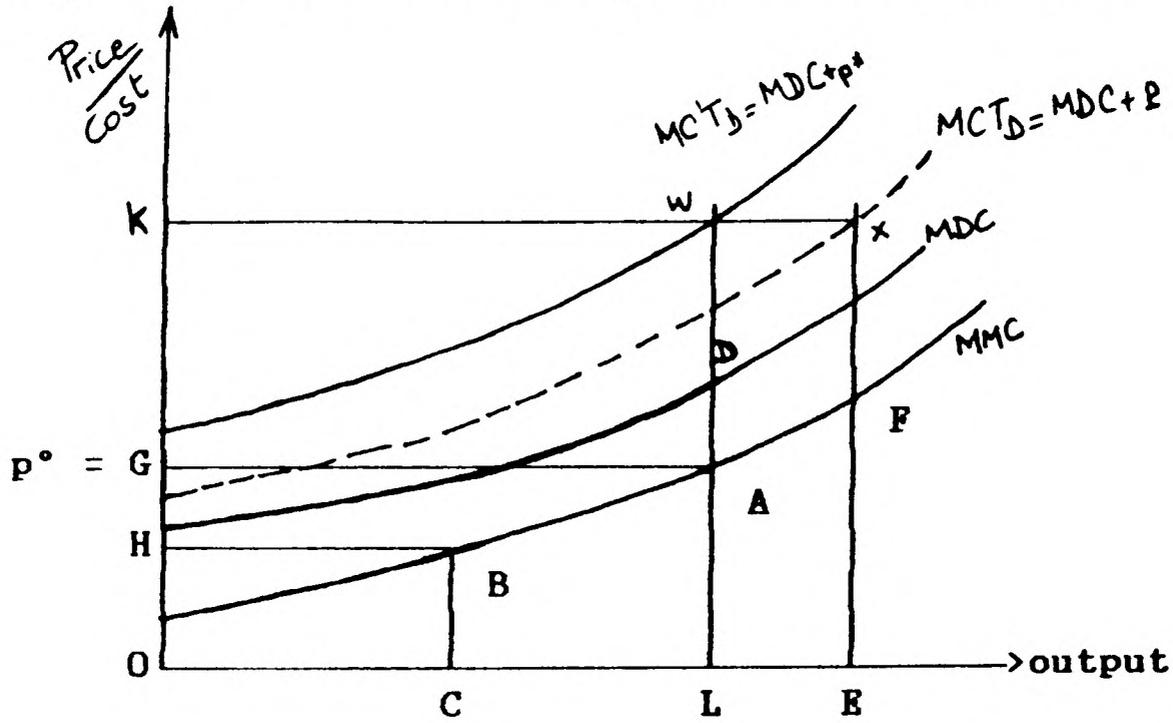
Situation 2: Transfer price when a perfectly competitive intermediate market exists.

The assumption of joint level of output is released here so that each division is free to determine its own output. The intermediate and final markets are assumed to be competitive and a price  $P$  for the intermediate commodity

continued...

APPENDIX B continued

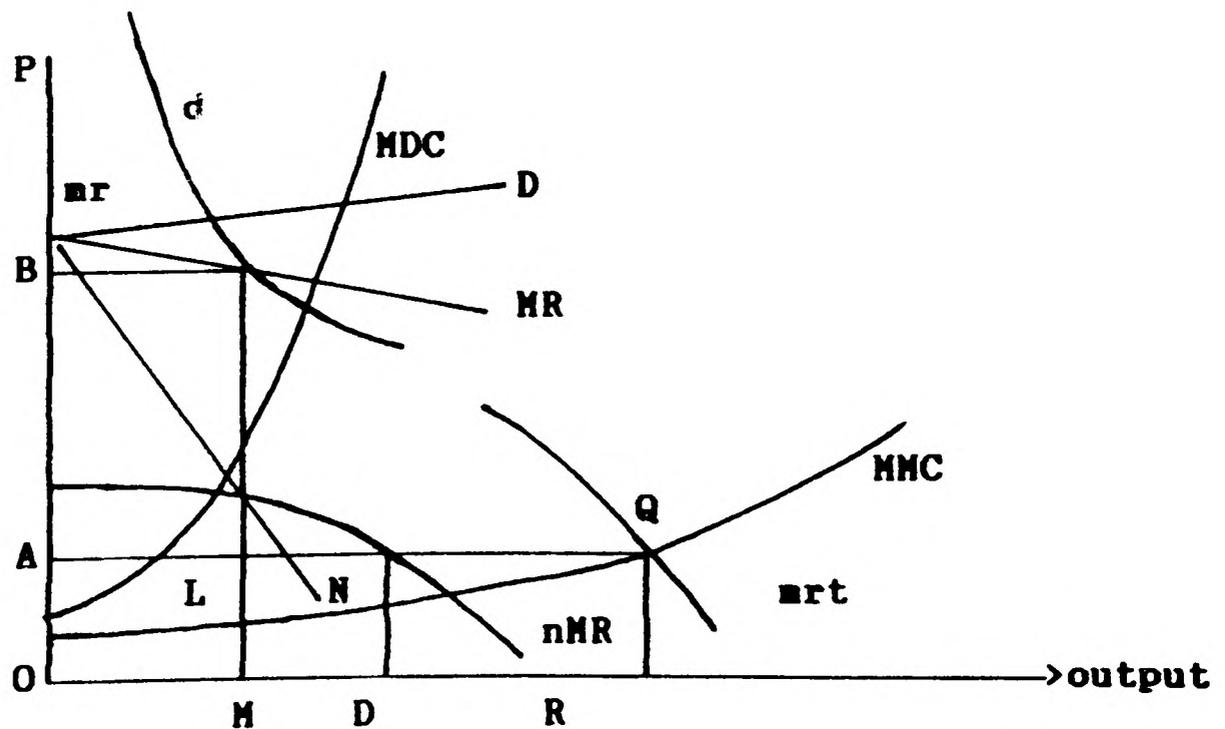
exists outside the company. The marginal cost of each division is independent of that of the other division. Both divisions are thus indifferent between trading the intermediate product within or outside the firm, and therefore, the market price  $P$  is the most logical transfer price.



If  $p = OH = BC$  then, the transferor's output should be  $OC$  and, if  $P - p = EF$  the transferee division should handle the output  $OE$ .

**Situation 3: Transfer price with imperfectly competitive intermediate market.**

In this situation the intermediate market is not perfectly competitive and, therefore, the transferor division faces a sloped demand curve for the intermediate product.



continued...

APPENDIX B continued

**d**=demand curve for intermediate product  
**D**=demand curve for final product  
**nr**=marginal revenue curve for intermediate product  
**MR**=marginal revenue curve for final product  
**MMC**=marginal manufacturing cost  
**MDC**=marginal distribution cost  
**nMR**=net marginal revenue = vertical difference  
between MR and MDC.  
**mrt**=total marginal revenue which is the horizontal  
sum of nr and nMR.

The maximum profit solution is to establish the output of the transferor at Q, i.e., the intersection of MMC and mrt. The amount OD of the intermediate output is transferred to the distribution division and the amount OM = OR - OD is sold directly on the intermediate market. The correct transfer price to achieve maximum profit is  $p^{\circ} = OA = MMC$ , that is the marginal producing cost of the transferor division at optimal output.

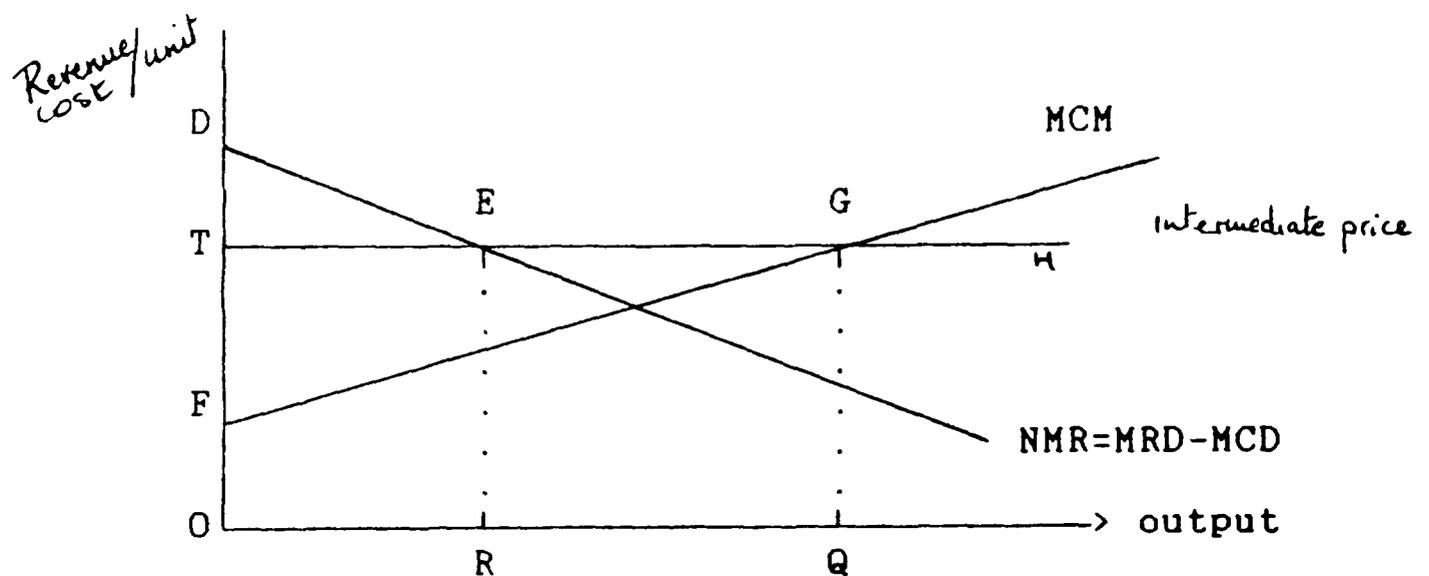
Given that the amount OD is transferred at OA and the amount OM is sold on the intermediate market at OB, the hidden assumption, therefore, is that the transferee division must be restricted from reselling the intermediate commodity to take advantage of the price difference  $OB > OA$ . Otherwise there will be a reduction in the external price which will lead to reducing the firm's over-all profits.

APPENDIX C GOULD'S RECONCILIATION OF DIFFERING MARKET PRICES FOR THE SAME INTERMEDIATE PRODUCT FOR A TWO-DIVISION COMPANY

If  $P$  is the transfer price;  $P_b$  the average cost of acquiring the intermediate product externally; and  $P_s$  the average revenue of selling the intermediate product to external buyers, four possible situations can be envisaged:

- 1)  $P_b = P_s$ ; 2)  $P_b > P_s > P$ ; 3)  $P > P_b > P_s$ ; 4)  $P_b > P > P_s$

1) Situation 1: No selling costs so that  $P_b = P_s$ .



In this situation the optimal transfer price is the market price  $OT$  at which the transferee will want to purchase quantity  $OR$  either from the sister division or the external market. The transferor will want to sell quantity  $OQ$  either internally or externally. The transferee's profit is represented by  $DTE$  and the transferor's profit by  $FTG$ . Total company profit is the sum of the two i.e.,  $FDEG$ .

In the remaining three diagrams,  $FAB$  represents the intermediate product marginal cost schedule for the company as a whole. Similarly,  $CDE$  represents the net marginal revenue function. The optimal output for the company is determined by the intersection of  $FAB$  and  $CDE$ . The optimal transfer price is given by the price read off the vertical axis level with that intersection.

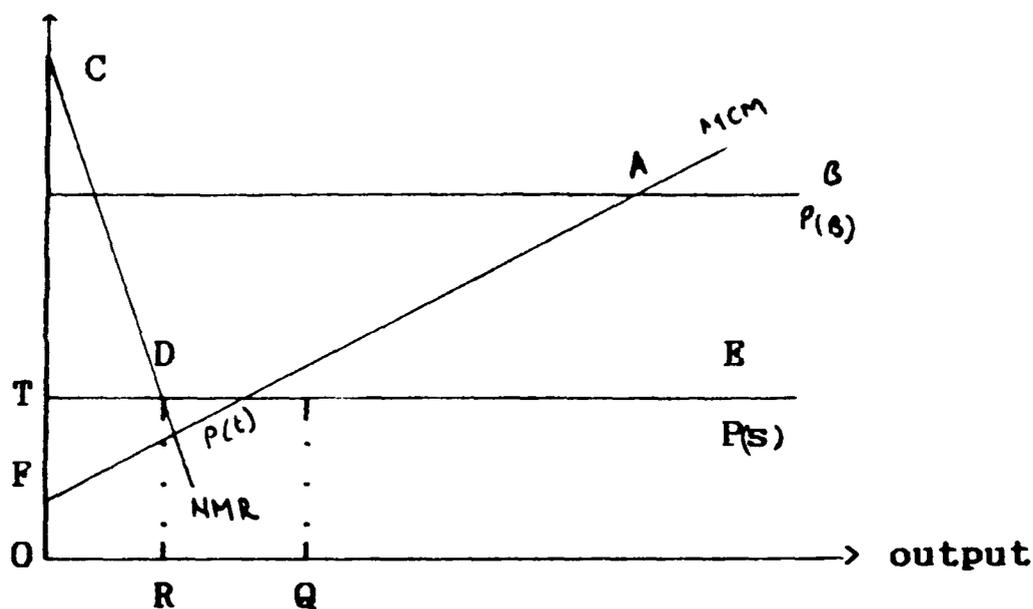
The most appropriate transfer price is arrived at after a series of approximations by a central agency within the firm. This agency bases its approximations on information supplied by the divisions regarding their individual profit maximising outputs. Hence, the possibility of bias given the impact of transfer prices on divisional profits.

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APPENDIX C continued

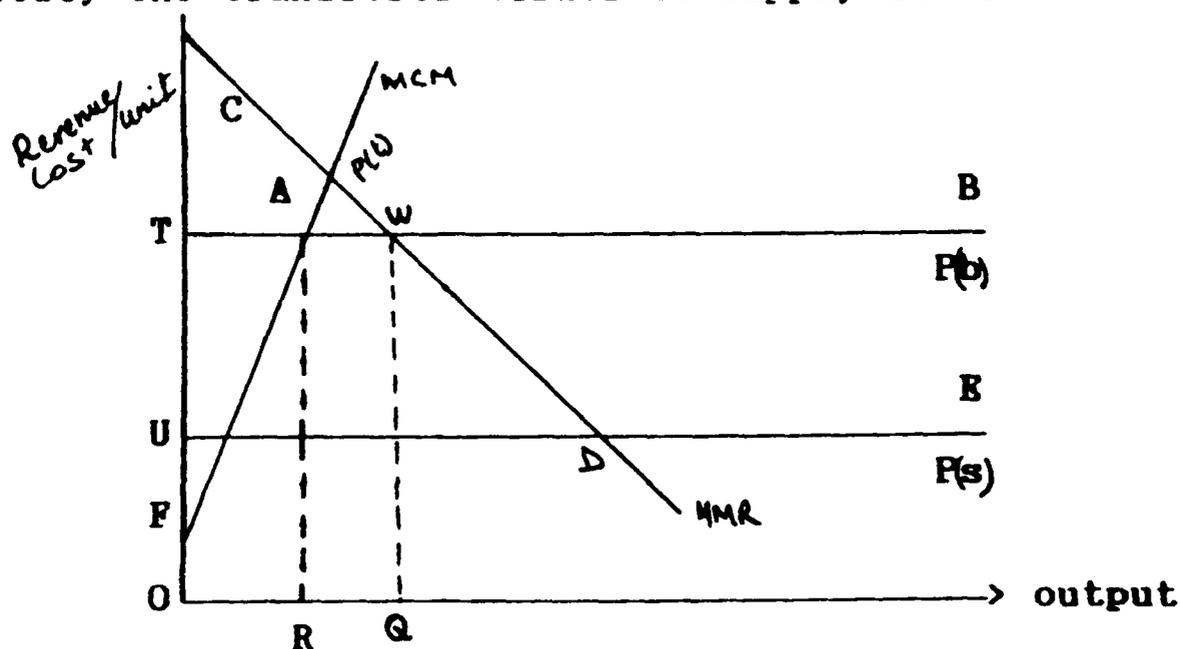
2) Situation 2:  $P_b > P_s > P$

The optimal transfer price is  $P_s$ , with the condition that central management should instruct the transferor division to supply the quantity of the intermediate product that the transferee division demands at  $P_s$ . In the graph below the intersection of NMR and MCM is below  $P_s$ , the net selling price obtainable on the external intermediate market.



3) Situation 3:  $P > P_b > P_s$

The intersection of NMR and MCM is above  $P_b$ , the intermediate product market buying price. The optimal transfer price is  $P_b$  with the transferee accepting the quantity the transferor wishes to supply at  $P_b$ .

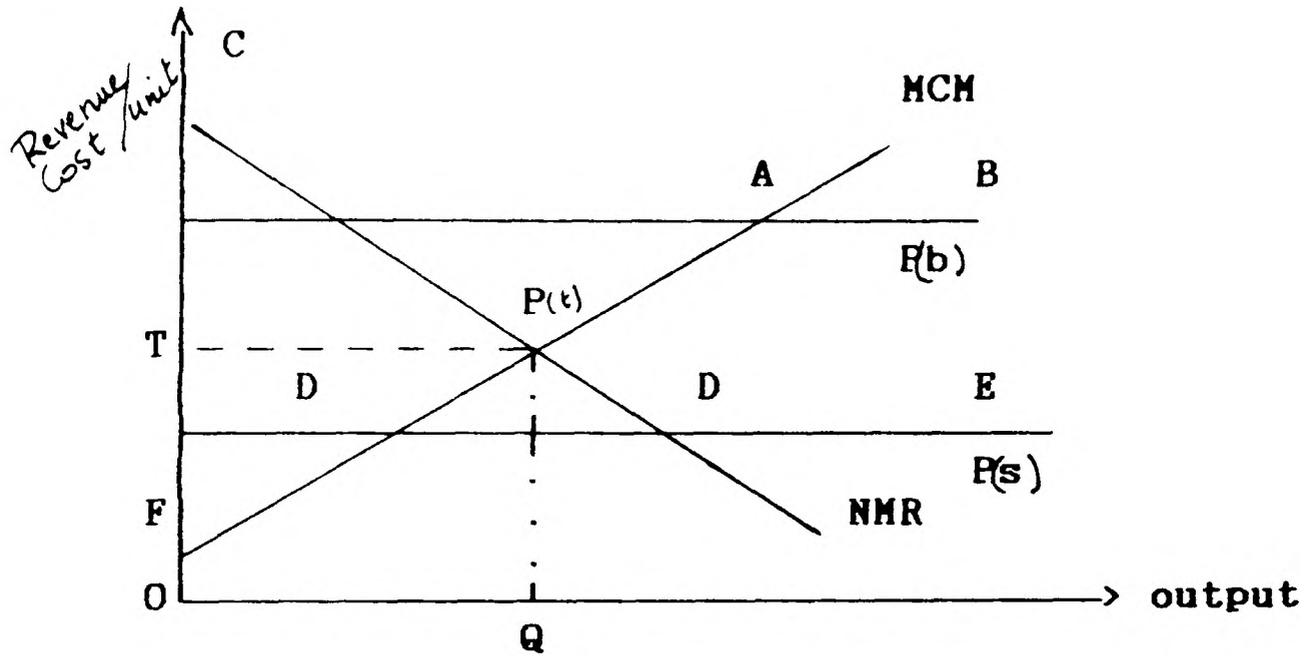


continued...

APPENDIX C continued

4) SITUATION 4:  $P_b > P > P_s$

The intersection of NMR and MCM is above  $P_s$  and below  $P_b$ . The optimal transfer price is  $P$ , and neither of the divisions trade on the external intermediate market.



APPENDIX D

TABLE 2.1

1950s

LITERATURE REVIEWING (R) or PROPOSING (P)  
PARTICULAR TRANSFER PRICING POLICIES

A U T H O R	YEAR OF PUBLICATION	MARKET PRICE	ADJUSTED MARKET PRICE	MARGINAL COST	NEGOTIATED PRICE	CONTRIBUTION MARGIN	DUAL PRICING	ACTUAL VARIABLE COST	STANDARD VARIABLE COST	ACTUAL FULL COST	STANDARD FULL COST	FULL COST PLUS	VARIABLE COST PLUS	MANUFACTURING COST	OPPORTUNITY COST	TWO-PART TARIFF	THREE-PART TARIFF	SHADOW PRICE	MANDATED PRICE	INPUT/OUTPUT LEVELS	SHAPLEY & MASSACHUSETTS FORMULA	
		COOK	1955	(P)			(P)										(P)					
DEAN	1955	R	R	R	(P)							R										
HIRSHLEIFER	1956	R	R	(P)	(P)																	
STONE	1956	R	R	(P)	(P)					R	(P)	R								R		
COOK	1957	R			R		R															
HIRSHLEIFER	1957			(P)																		
DEAN	1957																					
SHILLINGLAW	1957	R	R	R						R	R											
DREBIN	1959	R	R				(P)			(P)												
BIERMAN	1959	(P)		(P)	(P)					(P)												
ARROW	1959																	(P)				

APPENDIX D continued

TABLE 2.2

LITERATURE REVIEWING (R) or PROPOSING (P)  
 PARTICULAR TRANSFER PRICING POLICIES

A U T H O R	YEAR OF PUBLICATION	MARKET PRICE	ADJUSTED MARKET PRICE	MARGINAL COST	NEGOTIATED PRICE	CONTRIBUTION MARGIN	DUAL PRICING	ACTUAL VARIABLE COST	STANDARD VARIABLE COST	ACTUAL FULL COST	STANDARD FULL COST	FULL COST PLUS	VARIABLE COST PLUS	MANUFACTURING COST	OPPORTUNITY COST	TWO-PART TARIFF	THREE-PART TARIFF	SHADOW PRICE	MANDATED PRICE	INPUT/OUTPUT LEVELS	SHAPLEY & MASSACHUSETTS FORMULA
		ARROW & HURWICZ	1960																	(P)	
DANTZIG & WOLFE	1960																	(P)			
DEARDEN	1960	R	R									R	R								
HEFLEBOWER	1960	R																			
MCMURRAY	1961	R		(P)						R											
BOYD	1961	(P)																		R	
MENGE	1961	(P)		R																	
SHILLINGLAW	1961			R	R							R	R								
GREER	1962	R			R		(P)	R	R	R	R	R	R								(P)
SHUBIK	1962																				
BENSON	1963						R					(P)									
MCLAIN	1963																				
BAUMOL & FABIAN	1964									R	R	R								R	
DOPUCH & DRAKE	1964	(P)	(P)																		
GOULD	1964			(P)																	
HIRSHLEIFER	1964			(P)																	
WHINSTON	1964																				
KNIGHTON	1965	R	R	R	R		R	R		R	R										
LI	1965	R	R	R	(P)		(P)		(P)												
SOLOMONS	1965	(P)		R	(P)		(P)		(P)												
SAMUELS	1965																				
BALAS	1966																				
FINNEY	1966	R										R	R								
FREMGEN	1966	(P)						(P)													
RITCHIE	1966	R			R																
GOETZ	1967	R			(P)			R		R											
LIVESEY	1967	R				R		R		R											
MALINVAUD	1967																				
SCHACHNER	1967	R	R																		
HASS	1968																				
FLETCHER	1969																				
GOETZ	1969	R			(P)							R									
PIPER	1969	R																			
KRIEBEL & LAVE	1969																				
SAMUELS	1969																				

continued...

APPENDIX D continued

TABLE 2.3

LITERATURE REVIEWING (R) or PROPOSING (P)  
PARTICULAR TRANSFER PRICING POLICIES

1970s

AUTHOR	YEAR OF PUBLICATION	MARKET PRICE	ADJUSTED MARKET PRICE	MARGINAL COST	NEGOTIATED PRICE	CONTRIBUTION MARGIN	DUAL PRICING	ACTUAL VARIABLE COST	STANDARD VARIABLE COST	ACTUAL FULL COST	STANDARD FULL COST	FULL COST PLUS	VARIABLE COST PLUS	MANUFACTURING COST	OPPORTUNITY COST	TWO-PART TARIFF	THREE-PART TARIFF	SHADOW PRICE	MANDATED PRICE	INPUT/OUTPUT LEVELS	SHAPLEY & MASSACHUSETTS FORMULA	
HAIDINGER	1970	R			(P)			R		R												
FREMGEN	1970	R	R	(P)				R		R												
ONSI	1970	R	R	R											(P)				(P)			
LEMKE	1970	R	R																			
MANES	1970																		R			
GORDON	1970	(P)		R																		
RONEN & MCKINNEY	1970																					
BAUGHMAN	1970	R	R	R		(P)																
BINDING	1971	R	R	R	R					R	R	R	R	R								
CROMPTON	1972	R	R	R	(P)					R	R	R	R									
DITTMAN	1972	(P)		R				R	R	R	R	R	R	R					R			
HOLSTRUM & SAULS	1973	R		R				R	R	R	R	R	R		(P)							
VENDIG	1973							R	R	R	R	R	R			R	(P)					
TOMKINS	1973	R	R	R	R			R	R	R	R	R	R	R					R			
CHANDPA	1973	R	R	R	(P)			R	R	R	R	R	R									
TROXEL	1973	R		R	R		R			R	R											
ABDELKHALIK & LUSK	1974			R															R			
BURTON et al.	1974																		(P)			
FANTL	1974	R	R	R								R	R									
SHARAV	1974	R		R				R		R		R										
MAILANDT	1975				(P)																	
SCHWAB	1975	(P)		R	(P)																	
WATSON & BAUMLER	1975				(P)														R			
GRANICK	1975	R	R	R																		
EDWARDS & ROEMICH	1976	R		R						R												
FERRARA	1976							(P)														
YOUNG	1976	(P)	(P)	R	(P)					R						R					(P)	
HANEVELD	1976																					
CHAKRABORTY	1977	R	R	R	R			R	R	R	R				R							
DAGHER	1977	R			(P)			R		R												
EMMANUEL	1977a																					
EMMANUEL	1977b	R	R	R	R																	
FLAVELL	1977	R	R	R	R					R	R											
CLINTON	1978	R	R	R			R			R	R	R	R									
DAVIES	1978	R	R	R						R	R	R	R									
SHAUB	1976	R	R	R	(P)		R			R	R	R	R		R							
VANCIL	1976	R	R	R	R		R		R	R	R	R	R									
SIEGEL & SOUTH	1976	R		R	R					R	R	R	R									
ACKELSBURG & YUKI	1979				(P)																	
CHOUDHURY	1979	R	R		R																	
KANODIA	1979							(P)														
MADISON	1979	R								R	R	R	R	R	R							
TANG	1979	R	R	R						R	R	R	R	R								
WU & SHARP	1979	R	R	R	(P)																	
BATTACHARYYA et al.	1979	R	R							R			R									

continued...

APPENDIX D continued

TABLE 2.4 LITERATURE REVIEWING (R) or PROPOSING (P)  
1980s PARTICULAR TRANSFER PRICING POLICIES

AUTHOR	YEAR OF PUBLICATION	MARKET PRICE	ADJUSTED MARKET PRICE	MARGINAL COST	NEGOTIATED PRICE	CONTRIBUTION MARGIN	DUAL PRICING	ACTUAL VARIABLE COST	STANDARD VARIABLE COST	ACTUAL FULL COST	STANDARD FULL COST	FULL COST PLUS	VARIABLE COST PLUS	MANUFACTURING COST	OPPORTUNITY COST	TWO-PART TARIFF	THREE-PART TARIFF	SHADOW PRICE	MANDATED PRICE	INPUT/OUTPUT LEVELS	SHAPLEY & MASSACHUSETTS FORMULA	
BENKE & EDWARDS	1980	R	R	R	R	R		R	R	R	R	R			R	(P)						
HILTON	1980	R	R	R	R			R		R	R	R									(P)	
HARDING & HOULDEN	1980	R										R									(P)	
THOMAS	1980	R		R	R							R						R				R
BENKE & CASTER	1981																(P)					
BENKE & EDWARDS	1981					R	R			R	R	R	R				(P)					
FERGUSON	1981	R	R		R	R				R	R	R	R				(P)				(P)	
GUNN	1981																					
ELAM & HENAIDY	1981	R			R							R								(P)		
BENKE et al.	1982																(P)					
EMMANUEL & GEE	1982															(P)						
ISMAIL	1982	R														(P)				(P)		
MANES & VERRECHIA	1982																					(P)
INMAN	1982	R		R	R			R	R	R	R	R			R			R	R			
DAVIES	1982a																(P)					
DAVIES	1982b																(P)					
OWENS	1982			(P)																		
TANG	1982	R	R		R			R		R	R	R	R							(P)		
MONDEN	1982																					
BENKE & CASTER	1983								(P)													
BROWN	1983	R	R	R			R	R			R	R	R					R				
ECCLES	1983	R	R		R					R	R	R										
LOCOCO	1983					(P)	(P)															
WRAITH	1983																					
AMINUL ISLAM	1984	R	R	R	R		R	R		R	R	R	R									
SMYTH	1984	R	R		R	R	R	R	R	R	R	R	R									
SCARPO	1984																(P)					
CHARLES	1985a			R																		
CHARLES	1985b	R																				
KNOWLES & MATHUR	1985	R	R	R	R	R			R	R	R	R	R		R	R						
ECCLES	1985	R	R		R		R			R	R	R									(P)	
POGUE	1985			R							R		R									
ADELBERG	1986a	R					(P)															
ADELBERG	1986b	R	R				(P)															
LESSER	1987	R	R										R									
KEEGAN & HOWARD	1988	R																				
CATS-BARIL et al	1986				(P)																	

APPENDIX E

TABLE 4.1: MAJOR (PUBLISHED) EMPIRICAL STUDIES ON TRANSFER PRICING (AND RELATED TOPICS) [ IN CHRONOLOGICAL ORDER ]

AUTHOR AND/OR SPONSOR	YEAR	SURVEY METHODS	FOCUS: (D), (M) or Both	RESPONDENTS OR RESEARCH SITE	MAIN CONCERN OF THE STUDY
N. A. A.	1956	INTERVIEWS	D	40 AMERICAN COMPANIES	TRANSFER PRICING PRACTICES AND ACCOUNTING PROCEDURES
WHINSTON	1964	INTERVIEWS	D	2 AMERICAN COMPANIES	DECENTRALISATION AND TRANSFER PRICING
SOLOMONS (FERF)	1965	INTERVIEWS	D	25 AMERICAN COMPANIES	DIVISIONAL PERFORMANCE AND TRANSFER PRICING
B. I. C.	1965	INTERVIEWS	M	30 AMERICAN COMPANIES	INTERNATIONAL TRANSFER PRICING
N. I. C. B.	1967	QUESTIONNAIRE	D	190 US FIRMS	TRANSFER PRICING PRACTICES
LIVESKY	1967	QUESTIONNAIRE & INTERVIEWS	D	100 BRITISH COMPANIES	TRANSFER PRICE SETTING AND DIVISIONAL AUTONOMY
MAUTZ (FERF)	1968	QUESTIONNAIRE	D	412 AMERICAN COMPANIES	FINANCIAL REPORTING IN DIVERSIFIED COMPANIES
PIPER (ICAEW)	1968	QUESTIONNAIRE	D	34 UK FIRMS	TRANSFER PRICING PRACTICES
SHULMAN (1)	1969	INTERVIEWS	M	8 AMERICAN MNCs	INTERNATIONAL TRANSFER PRICING
GREENE & DUERR	1970	QUESTIONNAIRE COMPANIES	M	130 AMERICAN COMPANIES	INTERNATIONAL TRANSFER PRICING
HOOK (BIM)	1971	QUESTIONNAIRE	D	193 BRITISH COMPANIES	TRANSFER PRICING PRACTICES AND CONTROL POLICIES
BURSE et al.	1971	QUESTIONNAIRE & INTERVIEWS	M	34 AMERICAN MNCs	FINANCIAL CONTROL OF MULTINATIONAL OPERATIONS
ARVIDSSON	1971	QUESTIONNAIRE & INTERVIEWS	BOTH	194 SWEDISH COMPANIES	TRANSFER PRICING PRACTICES
ARPAN (2)	1972	OPEN-ENDED LETTERS AND INTERVIEWS	M	60 US OWNED FOREIGN SUBSIDIARIES	INTRACORPORATE PRICING AND MANAGEMENT CONTROL POLICIES
DRUMM (3)	1972	QUESTIONNAIRE & INTERVIEWS	D	24 LARGE GERMAN FIRMS	TRANSFER PRICING PRACTICES
M.B.S	1972	QUESTIONNAIRE	D	44 UK FIRMS	TRANSFER PRICING PRACTICES
TOMKINS	1973	QUESTIONNAIRE	D	44 BRITISH COMPANIES	TRANSFER PRICING, AUTONOMY & THE DIVISIONALISED FIRM
CHANNON	1973	INTERVIEWS	D	25 BRITISH COMPANIES	INTERNAL CHARACTERISTICS OF H-FORM COMPANIES

continued...

APPENDIX E continued

TABLE 4.1 continued:

LARSON	1974	INTERVIEWS	D	8 AMERICAN COMPANIES	TRANSFER PRICE SETTING, DIVISIONAL AUTONOMY AND PERFORMANCE EVALUATION
GRANICK (4)	1975	INTERVIEWS	D	7 FRENCH, 20 US & 6 UK FIRMS	TRANSFER PRICING PRACTICES AND ORGANISATIONAL ASPECTS
EMMANUEL	1977	QUESTIONNAIRE & INTERVIEWS	D	92 BRITISH COMPANIES	MARKET-ORIENTED TRANSFER PRICING AND DYSFUNCTIONAL DECISION-MAKING
MILBURN	1978	QUESTIONNAIRE & INTERVIEWS	M	20 CANAD. & 13 US PUBLIC ACCOUNTANTS	FINANCIAL ACCOUNTING IMPLICATIONS OF INTERNATIONAL TRANSFER PRICING
FINNIE (ICMA)	1978	QUESTIONNAIRE	D	33 UK FIRMS	TRANSFER PRICING POLICIES
VANCIL (FERF)	1978	QUESTIONNAIRE	D	239 LARGE US COMPANIES	DECENTRALISATION AND PROFIT CENTRE MANAGEMENT
WU & SHARP (5)	1978	QUESTIONNAIRE	BOTH	209 LARGE US COMPANIES	TRANSFER PRICING SYSTEMS, CRITERIA AND ARBITRATION
LAMBERT	1979	QUESTIONNAIRE	D	61 LARGE US COMPANIES	INTERDIVISIONAL CONFLICT AND TRANSFER PRICING
TANG (6)	1979	QUESTIONNAIRE	BOTH	145 US & 102 JAPAN FIRMS	TRANSFER PRICING SYSTEMS
KIM & MILLER	1979	QUESTIONNAIRE & INTERVIEWS	M	34 US MNCs & 5 ACCOUNTING FIRMS	TRANSFER PRICING AND ITS EFFECT ON DEVELOPING COUNTRIES
MEDNICK	1979	REVIEW OF ANNUAL REPORTS	D	250 AMERICAN COMPANIES	INDUSTRY SEGMENTATION, SEGMENT REPORTING AND TRANSFER PRICING
CHENHALL	1979	QUESTIONNAIRE & INTERVIEWS	D	173 LARGE AUSTRALIAN COMPANIES	DIVISIONALISATION, TRANSFER PRICING AND DIVISIONAL AUTONOMY
DRURY & BATES	1979	QUESTIONNAIRE & INTERVIEWS	D	95 CANADIAN ORGANISATION	TRANSFER PRICING OF COMPUTER SERVICES
BURNS	1980	QUESTIONNAIRE	M	62 AMERICAN COMPANIES	FACTORS INFLUENCING INTERNATIONAL TRANSFER PRICING
BAVISHI & WYMAN	1980	REVIEW OF ANNUAL REPORT	M	296 AMERICAN COMPANIES	FINANCIAL REPORTING
BENKE & EDWARDS	1980	INTERVIEWS	D	19 AMERICAN COMPANIES	TRANSFER PRICING PRACTICES
TANG (7)	1981	QUESTIONNAIRE & INTERVIEWS	BOTH	63 BRITISH & 163 CANADIAN LARGE FIRMS	TRANSFER PRICING PRACTICES AND INTERNATIONAL ENVIRONMENTAL VARIABLES

continued...

TABLE 4.1 continued:

YUNKER (8)	1982	QUESTIONNAIRE	M	52 AMERICAN MNCs	TRANSFER PRICING AND PERFORMANCE EVALUATION
SCAPENS et al.	1982	QUESTIONNAIRE & INTERVIEWS	D	211 BRITISH 205 US FIRMS	FINANCIAL CONTROL IN DIVISIONALISED COMPANIES
CZECHOWICZ et al. (BIC)	1982	QUESTIONNAIRE & INTERVIEWS	M	88 U.S. & NON U.S. MNCs IN THE U.S.A.	PERFORMANCE EVALUATION OF FOREIGN OPERATIONS AND TRANSFER PRICING
MOSTAFA (8)	1982	QUESTIONNAIRE	BOTH	46 BRITISH COMPANIES	TRANSFER PRICING DETERMINANTS AND PRACTICES
GOVINDARAJAN & RAMAMURTHY	1983	QUESTIONNAIRE & INTERVIEWS	D	41 LARGE INDIAN FIRMS	TRANSFER PRICING PRACTICES
SACKS	1983	INTERVIEWS	D	37 YUGOSLAV COMPANIES	DIVISIONALISATION AND TRANSFER PRICING
WHITTING & GEE (9)	1984	QUESTIONNAIRE & INTERVIEWS	D	57 BRITISH COMPANIES	INTERDEPENDENCE, TRANSFER PRICING & COST ALLOCATIONS
PRICE WATER- HOUSE (10)	1984	QUESTIONNAIRE	D	74 LARGE U.S. COMPANIES	TRANSFER PRICING PRACTICES
ECCLLES (11)	1985	INTERVIEWS	D	13 AMERICAN COMPANIES	STRATEGY, ADMINISTRATIVE PROCESS & TRANSFER PRICING
SOLOMON & TSAY	1985	QUESTIONNAIRE	D	185 AMERICAN ORGANISATION	TRANSFER PRICING OF COMPUTER SERVICES
ABDULLAH	1987	QUESTIONNAIRE	M	41 AMERICAN COMPANIES	TRANSFER PRICING OF FUNDS AMONG AFFILIATES AND FROM AFFILIATES TO PARENT FIRMS

continued...

NOTES TO TABLE 4.1:

**NAA** = National Association of Accountants (USA) previously National Association of Cost Accountants (NACA).  
**FERF** = Financial Executives Research Foundation (USA).  
**BIC** = Business International Corporation (USA).  
**NICB** = National Industrial Conference Board (USA).  
**ICAEW** = Institute of Chartered Accountants in England and Wales.  
**BIM** = British Institute of Management.  
**MBS** = Manchester Business School.  
**ICMA** = Institute of Cost and Management Accountants (UK) now The Chartered Institute of Management Accountants (CIMA).

- (1) also in: - Sloan Management Review, V.14, N.2, Winter 1972-73, pp.1-9  
 - Journal of International Business Studies, Spring 1972, pp. 1-8.  
 - Choi & Mueller (1978): Essentials of Multinational Accounting: An anthology. Details received through personal communication with Professor H.J. Drumm.
- (2) Data collected in the mid 1960s.
- (3) also in: The International Journal of Accounting, Education & Research, V.14, N.2, 1979, pp.71-99.
- (5) Also in: - Management Accounting(NAA), Jan.1979 & Abacus, V.15, N.1, June 1979, pp.3-12.
- (6) Also in: - Journal of Business Finance & Accounting, V.9, N.2, 1982, pp.179-89.  
 - CA Magazine (Can.), V.113, March 1980, pp.32-38.  
 - The Accountant's Magazine, V.8, June 1982, pp. 206-7 & 212
- (7) A summary also published in Columbia Journal of World Business, Autumn 1983.
- (8) Also in: - Mostafa et al (1984) Transfer Pricing: A survey using discriminant analysis. Omega, V.12, N.5, 1984, pp.465-474.
- (9) Paper received through personal contact with Professor K. Gee.
- (10) Full report received from Price Waterhouse, London branch.  
 Also in: Price Waterhouse Review, V.30, N.3, 1986, pp.36-45.
- (11) First reported in Harvard Business Review, Nov.Dec 1983, pp.149-61.

continued

APPENDIX E continued

TABLE 4.2: NUMBER OF STUDIES BY YEAR AND COUNTRY

YEAR OF PUBLICATION	C O U N T R Y										
	USA	U. K	SWE-DEN	GER-MANY	FRA-NCE	CANA-DA	JPAN	AUST-RAL.	IND-IA	YUGOS-LAVIA	TOTAL
1956	1	0	0	0	0	0	0	0	0	0	1
Total 1950s	1	0	0	0	0	0	0	0	0	0	1
1964	1	0	0	0	0	0	0	0	0	0	1
1965	2	0	0	0	0	0	0	0	0	0	2
1967	1	1	0	0	0	0	0	0	0	0	2
1968	1	0	0	0	0	0	0	0	0	0	1
1969	1	1	0	0	0	0	0	0	0	0	2
Total 1960s	6	2	0	0	0	0	0	0	0	0	8
1970	1	0	0	0	0	0	0	0	0	0	1
1971	1	1	1	0	0	0	0	0	0	0	3
1972	1	1	0	1	0	0	0	0	0	0	3
1973	0	2	0	0	0	0	0	0	0	0	2
1974	1	0	0	0	0	0	0	0	0	0	1
1975*	1	1	0	0	1	0	0	0	0	0	3
1977	0	1	0	0	0	0	0	0	0	0	1
1978*	3	1	0	0	0	1	0	0	0	0	5
1979*	4	0	0	0	0	1	1	1	0	0	7
Total 1970s	12	7	1	1	1	2	1	1	0	0	26
1980	3	0	0	0	0	0	0	0	0	0	3
1981*	0	1	0	0	0	1	0	0	0	0	2
1982*	3	2	0	0	0	0	0	0	0	0	5
1983	0	0	0	0	0	0	0	0	1	1	2
1984	1	1	0	0	0	0	0	0	0	0	2
1985	2	0	0	0	0	0	0	0	0	0	2
1986	1	0	0	0	0	0	0	0	0	0	1
1987	1	0	0	0	0	0	0	0	0	0	1
Total 1980s	11	4	0	0	0	1	0	0	1	1	18
GRAND TOTAL	30	13	1	1	1	3	1	1	1	1	53*
%age	57%	24	1.88	1.88	1.88	5.67	1.88	1.88	1.88	1.88	100%

(\*) = This indicates that some studies were carried out simultaneously in more than one country. Hence the difference (53-47=6) between the aggregate figure above and the actual number of publications.

Figure 4.1: empirical studies since 1956

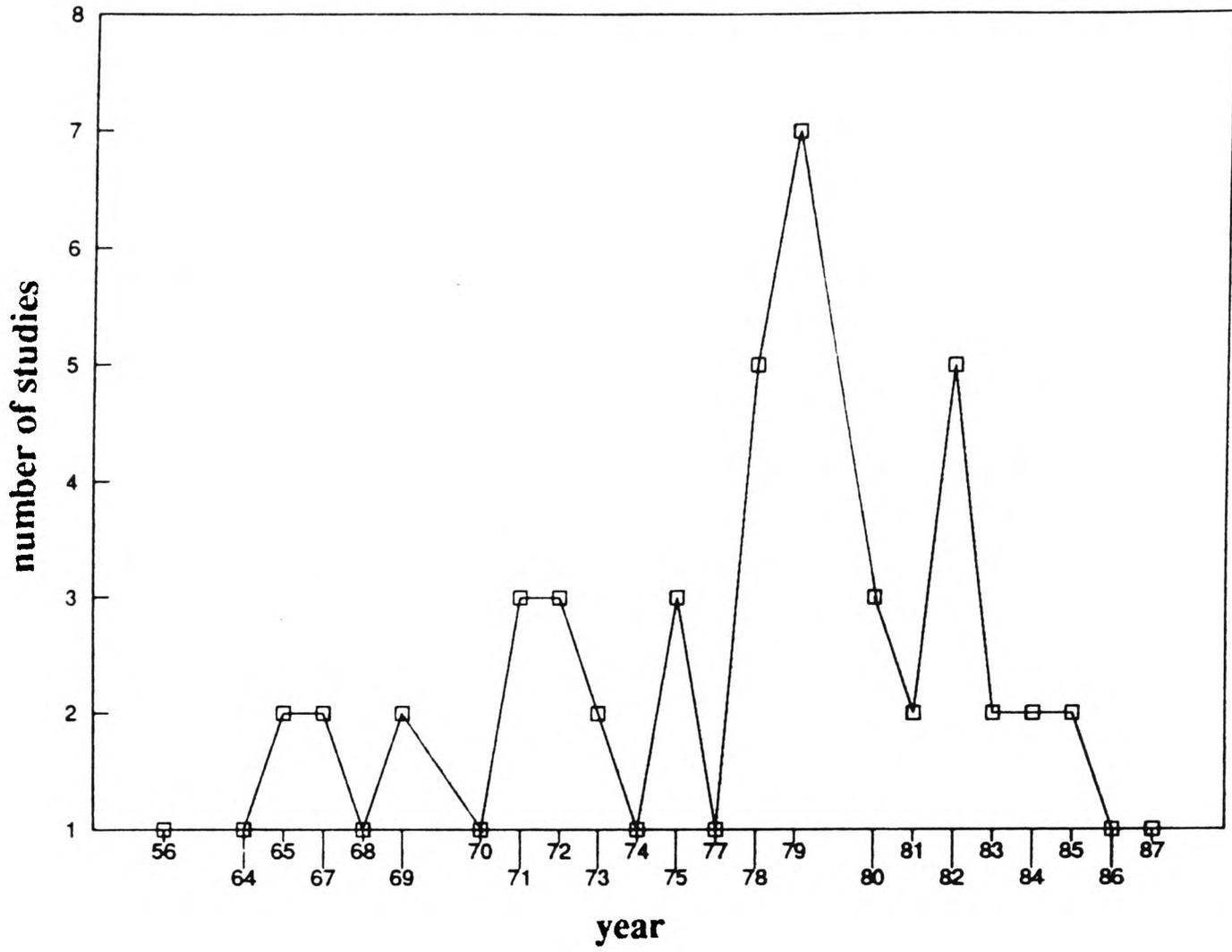
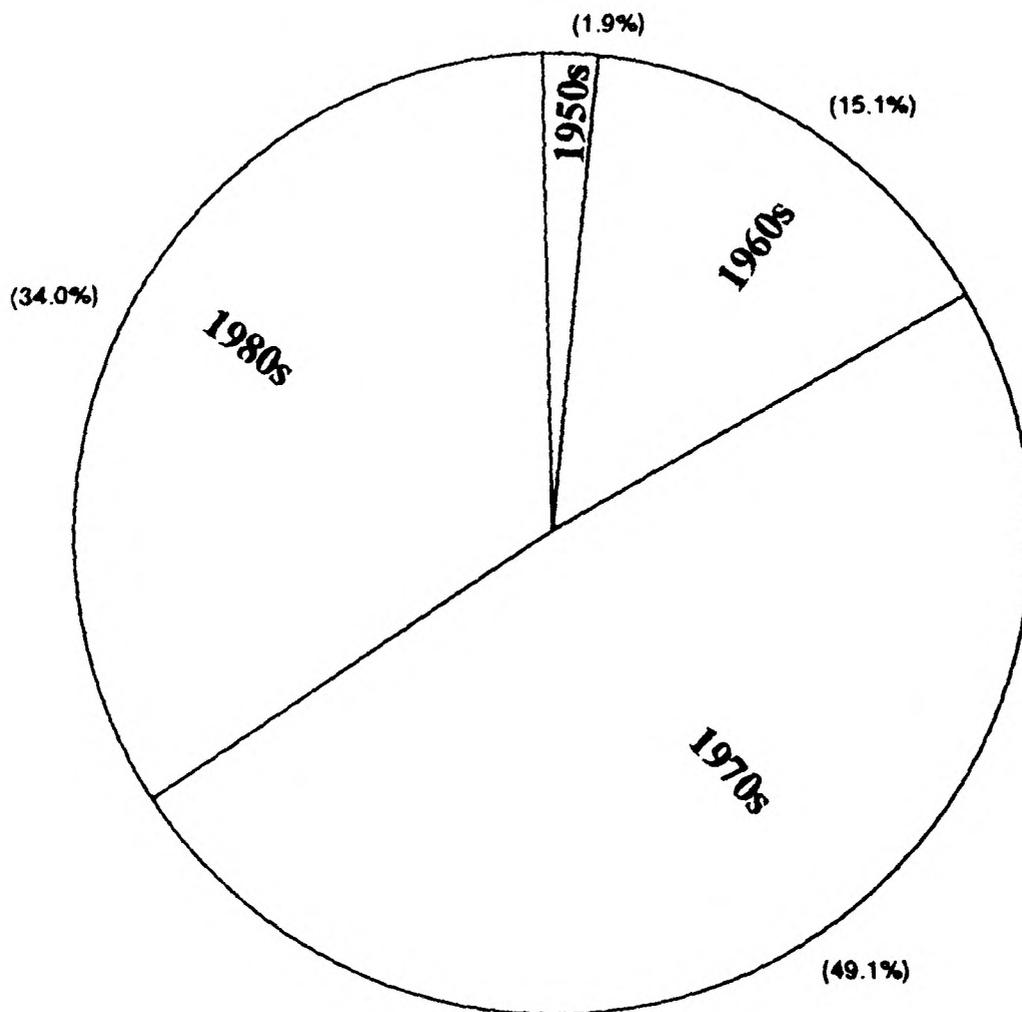


Figure 4.2: empirical studies by decade



APPENDIX G  
COVER LETTER



Incorporating Avery Hill and Garnett

Riverside House Beresford Street Woolwich London SE18 6BU  
Telephone 01-854 2030

Your ref  
Our ref  
Ext  
Date

**SCHOOL OF BUSINESS ADMINISTRATION**

Head of School G K Randall MA  
Second Head of School D J Fenton BA LLB LLM

Dear

I am a postgraduate student at the Thames Polytechnic, School of Business Administration, London SE18.

I am conducting M Phil/Ph D research on the pricing of transfers of raw materials, services and intermediate products between units of decentralised companies in the U.K.

The purpose of this study is to examine:

- 1) the relationship between transfer pricing and divisional performance evaluation;
- 2) the behavioural impact of transfer pricing on divisional managers;
- 3) the impact of the organisation of the firm on transfer pricing, and
- 4) the role of negotiated prices for integration and conflict resolution.

The reason for the study centres around the alarming gap between the theory and practice of transfer pricing. At present our understanding of why particular transfer prices are employed is limited and the behavioural implications of certain practices have not been fully appreciated.

Therefore, I should be very grateful if you would kindly complete the enclosed questionnaire and return it to me in the prepaid envelope provided.

I understand that some of the issues covered by the questionnaire may be somewhat sensitive and require extreme confidentiality. I guarantee that all identities of individuals, divisions, subsidiaries, products, etc... will remain anonymous.

A copy of the summary of the results of this study will be sent to all participants.

Yours sincerely

Messaoud MEHAFDI

RE-DRAFTED COVER LETTER



Incorporating Avery Hill and Garnett

Riverside House Beresford Street Woolwich London SE18 6BU  
Telephone 01-854 2030

Your ref  
Our ref  
Ext  
Date

**SCHOOL OF BUSINESS ADMINISTRATION**

Head of School G K Randall MA  
Second Head of School D J Fenton BA LLB LLM

Dear Mr

I am positive that yet another request to fill in a questionnaire for a doctoral student will be met with some dismay but before "filing" this request, please read on.

There is a huge gap between academic and professional thinking on the topic of transfer pricing. Little research has attempted to place companies' practices in their organisational context.

This questionnaire deals with domestic transfer pricing between units of UK companies. It specifically addresses the impact of transfer prices on performance measures and the subsequent evaluation of managers.

A corporate view of your company's practices would be especially useful and completion of the questionnaire will take no more than one hour of your time. Complete anonymity for all respondents and their companies is guaranteed and all participants will receive an analysis of the results of this study.

If you have any doubts about participating in what should be a very interesting study, I and my supervisors would be pleased to help you.

Thank you for your time.

Yours sincerely,

M MEHAFDI  
Business School  
Thames Polytechnic

Your ref  
Our ref  
Ext  
Date

## APPENDIX G

### FOLLOW-UP LETTER

Dear Mr....

In February I sent a questionnaire on transfer pricing to a number of large companies. The purpose of the survey is a modest attempt to bridge the wide gap that exists between the theory and practice of transfer pricing.

However, due to the sensitivity of the issues raised, respondents are guaranteed complete confidentiality and the information obtained will only be used as a data base for the present research.

So far very useful answers have been received but these do not constitute a sufficient sample for significant statistical analysis. Some questionnaires have not been returned to me and these could have been held up in the post system.

In the event that you may not have answered for one reason or another, I am enclosing another copy of the questionnaire. I should be very grateful if you would kindly fill it in and return it to me in the self-addressed envelope provided.

I thank you in advance and look forward to hearing from you.

Yours Sincerely,

Messaoud MEHAFDI  
Business School  
Thames Polytechnic

**APPENDIX G**

**QUESTIONNAIRE ON DOMESTIC TRANSFER PRICING IN DIVISIONALISED  
COMPANIES IN THE UNITED KINGDOM**

**PROJECT TITLE: BEHAVIOURAL ASPECTS OF TRANSFER PRICING IN  
DECENTRALISED COMPANIES.**

**SUPERVISOR:**

**PROFESSOR CLIVE EMMANUEL,  
ARTHUR YOUNG PROFESSOR OF ACCOUNTING  
SCHOOL OF FINANCIAL STUDIES  
DEPARTMENT OF ACCOUNTING AND FINANCE  
UNIVERSITY OF GLASGOW  
65-71 SOUTHPARK AVENUE  
GLASGOW, G12 8LE**

**Project coordinator:**

**Mr STEWART IVISON \*  
HEAD OF ACCOUNTING AND FINANCE DIVISION  
BUSINESS SCHOOL  
THAMES POLYTECHNIC  
WOOLWICH  
LONDON SE18**

**RESEARCH STUDENT:**

**MESSAOUD MEHAFFI B Sc (Licence) ACCOUNTING AND  
FINANCE, UNIVERSITY OF ALGIERS,  
M Sc, ACCOUNTING AND FINANCE, UNIVERSITY OF  
WALES, (UWIST), CARDIFF  
M Phil/Ph D CANDIDATE, THAMES POLYTECHNIC.**

**TO THE RESPONDENT:**

**THANK YOU FOR YOUR COLLABORATION IN FILLING IN THIS  
QUESTIONNAIRE.**

**ALL RESPONSES ARE CONSIDERED STRICTLY CONFIDENTIAL AND ARE  
INTENDED ONLY TO PROVIDE EMPIRICAL INFORMATION NEEDED FOR THE  
PRESENT RESEARCH. THE RESULTS OF THE ANALYSIS WILL NOT DISCLOSE  
THE IDENTITIES OF PARTICIPANTS.**

**IF YOU WISH TO RECEIVE A SUMMARY REPORT OF THIS RESEARCH, PLEASE  
TICK HERE: [ ]**

**\* later replaced by Dr Ian Tilley**

**continued...**

NOTES FOR COMPLETING THE QUESTIONNAIRE

1. When the space provided for an answer is not sufficient, please add separate sheets.
2. Please feel free to comment on the questionnaire.
3. **Definition of terms:**
  - a) *Transfer pricing:* Pricing of internal movements of raw materials, services and products between divisions of the same company.
  - b) *Transfer commodities:* Saleable raw materials, products and services traded internally between divisions of the company.
  - c) *Division:* Section, unit, department, centre or subsidiary which is separable for management and internal accounting purposes.

The questionnaire is divided into seven short sections:

- A. ORGANISATIONAL CHARACTERISTICS
- B. DECISION-MAKING RESPONSIBILITY
- C. TRANSFER PRICE SETTING
- D. PERFORMANCE MEASUREMENT, EVALUATION AND REWARD
- E. CONFLICT: CAUSES AND RESOLUTION
- F. REVIEW AND ADJUSTMENT OF THE TRANSFER PRICING SYSTEM
- G. GENERAL APPRECIATION

continued...

QUESTIONNAIRE ON DOMESTIC TRANSFER PRICING  
IN DECENTRALISED U.K. COMPANIES.

**SECTION 4: ORGANISATIONAL CHARACTERISTICS**

**1. GENERAL INFORMATION**

NAME OF THE COMPANY: .....

NAME AND POSITION OF PERSON  
FILLING THE QUESTIONNAIRE: .....

TURNOVER (ANNUAL SALES): £ .....

VOLUME OF INTERNAL TRANSFERS: .....

(as a %age of total volume sales)

TYPE OF ACCOUNTING SYSTEM: .....

**2. BASIS OF DIVISIONALISATION**

WHAT IS THE BASIS ON WHICH DIVISIONS ARE SET UP ?  
(*please tick where appropriate*)

- a) by product or service [ ] e) a combination of the above [ ]  
(*please state*) [ ]
- b) by production process [ ]
- c) by regions [ ] f) other [ ]  
(*please specify*)
- d) by markets served [ ]

**3. CLASSIFICATION OF THE DIVISIONS**

ARE THE DIVISIONS IN YOUR COMPANY CONSIDERED AS :  
(*please tick where appropriate and state number*)

- a) cost centres [ ] c) investment centres [ ]
- b) expense centres [ ] f) a combination of the above [ ]  
(*please state*) [ ]
- c) revenue centres [ ] g) other [ ]  
(*please specify*)
- d) profit centres [ ]

**4. CURRENT HIGH PRIORITY MANAGEMENT**

Could you please state how significant the following objectives  
are in your current business strategy?  
[Please check appropriate answer - one tick in each line]

OBJECTIVES	DEGREE OF SIGNIFICANCE			
	VERY HIGH	NOT HIGH	VERY LOW	VERY LOW
Short-run profit				
Long-run profit				
Sales growth				
Increase in market share				
New product development				
Customer relationship				
Technological modernisation				
Employment stability and welfare				
Other (please specify)				

continued...

**SECTION B: DECISION-MAKING RESPONSIBILITY**

1. How much discretion does the average divisional manager have on the following decisions?  
[please check the appropriate answer - One tick in each line]

DECISIONS	DEGREE OF DISCRETION			
	VERY HIGH	NOT HIGH	NOT LOW	VERY LOW
Setting divisional objectives				
Investment decisions				
Setting performance evaluation measures				
Participating in budget setting				
Make or buy decisions				
Joint cost allocations				
Setting transfer prices				
Reviewing/adjusting the transfer pricing system				
Buying externally items available internally				
Advertising and marketing				
Bargaining with other divisions over internal transfers				
Recruiting/dismissing personnel				
Paying personnel				
Other (please specify)				

[PLEASE ANSWER THE REMAINING QUESTIONS WITH THE TYPICAL INTERNAL TRADE BETWEEN A SELLING AND A BUYING DIVISION IN MIND]

2. When an external market exists for an internally transferred commodity, does the trading in that market need the approval of central management? YES [ ] NO [ ]
3. If yes, how often?
  - a) always [ ]
  - b) only when the transfer commodity is important [ ]
  - c) when the difference between the external price and the transfer price is big [ ]
  - d) other (please specify) [ ]
4. Are there any regulations for the enforcement of buy/sell agreements? (if yes please supply copy) YES [ ] NO [ ]
5. For the internally transferred commodity you have in mind, how significant is the trade by volume or capacity for the:

	supplying division	buying division
under 5 % -	[ ]	[ ]
between 5 % - 10 %	[ ]	[ ]
between 10 % - 25 %	[ ]	[ ]
between 25 % - 50 %	[ ]	[ ]
between 50 % - 75 %	[ ]	[ ]
over 75 % -	[ ]	[ ]

continued...

**SECTION C : TRANSFER PRICE SETTING**

6. Why does the company have such a policy ?

1. How are transfer prices usually determined and reviewed in your company ?
- a) by corporate management alone [ ]
  - b) by corporate management through consultation of divisions [ ]
  - c) between buying and selling divisions [ ]
  - d) other (please specify) [ ]

- a) because of additional costs involved [ ]
- b) to encourage internal trade depending on the type of customer [ ]
- c) other (please specify) [ ]

2. What is the dominant basis for pricing transfers ?

- a) market-based [ ]
- b) cost-based [ ]
- c) negotiated [ ]
- d) mathematical programming [ ]
- e) a combination of the above (please state) [ ]
- f) other (please specify) [ ]

3. Please give details of the particular methods used in the dominant basis (a sample list is given on page 8 for guidance).

4. How often is the dominant basis normally used :

- a) always [ ]
- b) often [ ]
- c) sometimes [ ]
- d) rarely [ ]
- e) when external market exists [ ]
- f) when external market does not exist [ ]
- g) other (please specify) [ ]

5. Is the transfer price the same for the same commodity when sold to different internal buyers ? YES [ ] NO [ ]

7. How important are the following criteria for the dominance of a particular transfer pricing policy ? [Please check appropriate answer - One tick in each line]

CRITERIA	DEGREE OF IMPORTANCE			
	VERY HIGH	NOT HIGH	VERY LOW	VERY LOW
Simplicity and ease of implementation				
Achieve corporate goals				
Maximise divisional autonomy				
Fairness and conflict resolution				
Pinpoint divisional responsibility				
Better performance evaluation				
Information economies				
Positive effects on economic decisions				
Better knowledge of market conditions				
Other (please specify)				

continued...

8. Please rank the following objectives for your transfer pricing system : 3. Is performance usually measured on :

	DOMINANT ← - - - - - → NOT DOMINANT				
	1	2	3	4	5
a) performance evaluation and control of : - divisions - managers					
b) profit maximisation					
c) divisional autonomy					
d) managerial motivation					
e) price-driven					
f) market-driven					
g) resource allocation					
h) a combination of the above (please state)					
i) other (please specify)					

- DIVISIONS MANAGERS**
- a) absolute profits
  - b) ratio of profits to equity
  - c) ratio of profits to total assets
  - d) ratio of profits to sales
  - e) residual income
  - f) cost performance
  - g) cash flow
  - h) sales growth rate
  - i) adherence to budgets
  - j) product innovation
  - k) market development
  - l) earnings per share (EPS)
  - m) a combination of the above  
(please state)
  - n) other (please specify)

4. Are there differences in the accounting information used for determining the division's as opposed to the manager's performance measures ? (please give details)

**SECTION D: PERFORMANCE MEASUREMENT, EVALUATION AND REWARD**

1. Are divisions and their managers evaluated on different bases ?  
YES ( ) NO ( )

2. If yes, please state why :

continued...

5. From the company's experience, how would divisional managers react when performance is evaluated solely on financial measures ?

- a) complain on the fairness of the transfer pricing system
- b) conflict over transfer prices
- c) indulge in bickering
- d) bias and build slack in reported information
- e) increase competition not cooperation
- f) increase mistrust between divisions
- g) increase mistrust between divisions and corporate management
- h) other (please specify)

6. Given the divisional performance, how does the company usually reward/sanction division managers ?

**SATISFACTORY PERFORMANCE**

- a) promote
- b) increase pay
- c) give bonuses
- d) give more power
- e) consult on strategic decision-making
- f) other (please specify)

**UNSATISFACTORY PERFORMANCE**

- a) dismiss
- b) transfer
- c) advise/train
- d) give more power
- e) help to overcome weaknesses
- f) other (please specify)

**SECTION E : CONFLICT - CAUSES AND RESOLUTION**

1. With regard to sections B and D above, what is the causal relationship between the following factors and internal conflict over transfer pricing ?  
[Please check appropriate answer - One tick in each line]

FACTORS	POTENTIAL OF CONFLICT FREQUENT-----INFREQUENT				
	1	2	3	4	5
General dissatisfaction with the system					
Centralisation of transfer pricing policy making					
Lack of trust between divisions					
Restricted information flow					
Lack of fairness of the system					
Negotiation over transfer prices					
Impact of the system on divisional profits					
Importance of the transferred commodity to the division					
Non-existence of external market					
External market exists but divisions not free to trade in it					
Other (please specify)					

continued...

2. How is conflict over transfer pricing usually resolved in your company ?

- a) by corporate management alone
- b) divisions ask for revision of transfer prices
- c) discuss the differences openly so as to reach a compromise
- d) disregard the differences and emphasise common interests
- e) opt for mutual concessions to settle differences
- f) each division tries to "win" the conflict for itself
- g) disputes not allowed at all
- h) no resolution procedures exist
- i) other (please specify)

2. To what extent do the following factors influence the need for reviewing and adjusting the transfer pricing system ?  
[Please check appropriate answer - One tick in each line.]

FACTORS	DEGREE OF IMPORTANCE			
	VERY HIGH	HIGH	NOT HIGH	VERY LOW
Reorganisation and changes in strategy				
Changes in raw material and labour costs				
Reevaluation of standard costs				
Volume variances				
Cost of capital				
Rates of inflation				
Level of competition				
Fiscal year end				
New product development				
Technological conditions				
Budget cycle				
Development of the operating plan				
Government regulations				
Market changes (please specify)				
Other (please specify)				

**SECTION F: REVIEW AND ADJUSTMENT OF THE TRANSFER PRICING SYSTEM**

1. How frequently are transfer prices reviewed and adjusted ?

- a) monthly  f) on request from divisions
- b) quarterly
- c) semi-annually  g) consistency with budget
- d) annually  h) other (please specify)
- e) when there is dispute

continued...

- 7 -

3. From the company's experience, has the review and adjustment of the transfer pricing system led to :
- |   |     |
|---|-----|
| a) better efficiency of the transfer pricing system | [ ] |
| b) reducing conflict over transfer prices           | [ ] |
| c) better control and performance evaluation        | [ ] |
| d) optimal resource allocation                      | [ ] |
| e) improving fairness of the system                 | [ ] |
| f) convergence of corporate and divisional goals    | [ ] |
| g) increasing conflict and dysfunctional behaviour  | [ ] |
| h) more dissatisfaction with the system             | [ ] |
| i) other ( <i>please specify</i> )                  | [ ] |
3. If not, what would the company like to be changed or adjusted in the present system ?
4. If any change is needed, would divisions be asked to submit proposals for improving the present system ?

**SECTION G : GENERAL APPRECIATION**

1. If the company has ever abandoned a previous transfer pricing system, what were the main reasons ?
5. With regard to question F.2, can divisions renegotiate transfer prices because of significant changes ?
6. Do you think that the present transfer pricing system is efficient and satisfactory?
6. If decision-making authority is concentrated at corporate headquarters, would that lead to complicating conflict or delaying the resolution of any dispute ?

continued...

7. If divisional performance is evaluated in terms of budgeted objectives, what are the likely effects on transfer pricing when there is deviation from the budget ?

8. Would non-accounting information be useful in evaluating divisional performance?

9. Additional thoughts and comments :

- PROPOSED LIST OF TRANSFER PRICING METHODS -

- 1) MARKET PRICE
- 2) ADJUSTED MARKET PRICE
- 3) ACTUAL UNIT VARIABLE COST
- 4) ACTUAL UNIT VARIABLE COST + MARK-UP
- 5) ACTUAL UNIT FULL COST
- 6) ACTUAL UNIT FULL COST + MARK-UP
- 7) STANDARD UNIT VARIABLE COST
- 8) STANDARD UNIT VARIABLE COST + MARK-UP
- 9) STANDARD UNIT FULL COST
- 10) STANDARD UNIT FULL COST + MARK-UP
- 11) CONTRIBUTION MARGIN
- 12) MARGINAL COST
- 13) MANUFACTURING COST
- 14) NEGOTIATED PRICE
- 15) OPPORTUNITY COST
- 16) DUAL PRICING (one price for the selling division and another for the buying division)
- 17) TWO-PART TARIFF (the price consists of two instalments)
- 18) MATHEMATICAL PROGRAMMING OPTIMAL PRICE

*(Please state if computer programs are used to determine transfer prices.)*

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THANK YOU FOR COMPLETING THIS QUESTIONNAIRE.

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## APPENDIX H: SUMMARY VARIABLES BY ACRONYM KEY

ACRONYM	QUESTIONNAIRE ENTRY	SEQUENCE NUMBER
<b>DIVB</b>	<b>DIVISIONALISATION BASE</b>	<b>(QA2)</b>
DIVB1 DIVB2 DIVB3 DIVB4	by product or service by production process by regions by markets served	
<b>DIVC</b>	<b>CLASSIFICATION OF THE DIVISIONS</b>	<b>(QA3)</b>
DIVC1 DIVC2 DIVC3	cost centres profit centres investment centres	
<b>CHPM</b>	<b>CURRENT HIGH PRIORITY MANAGEMENT</b>	<b>(QA4)</b>
CHPM1 CHPM2 CHPM3 CHPM4 CHPM5 CHPM6 CHPM7 CHPM8	short-run profit long-run profit sales growth increase in market share new product development customer relationship technological modernisation employment stability and welfare	
<b>DMRS</b>	<b>DECISION-MAKING RESPONSIBILITY</b>	<b>(QB1)</b>
DMRS1 DMRS2 DMRS3 DMRS4 DMRS5 DMRS6 DMRS7 DMRS8 DMRS9  DMRS10 DMRS11 DMRS12 DMRS13	setting divisional objectives investment decisions setting performance evaluation measures participating in budget setting make or buy decisions joint cost allocations setting transfer prices reviewing/adjusting transfer prices buying externally items available internally advertising and marketing bargaining over internal transfers recruiting/dismissing personnel paying personnel	
<b>APXS</b>	<b>APPROVAL FOR EXTERNAL SOURCING</b>	<b>(QB3)</b>
APXS1 APXS2 APXS3 APXS4	always when transfer is significant when difference between prices is big not required	

continued...

**Appendix H continued...**

<b>TPSG</b>	<b>TRANSFER PRICE SETTING</b>	<b>(QC1)</b>
<b>TPSG1</b> <b>TPSG2</b> <b>TPSG3</b> <b>TPSG4</b>	by corporate management alone through consultation with divisions between the divisions by selling division	
<b>FTPFB</b>	<b>FREQUENCY USAGE OF TRANSFER PRICING BASE</b>	<b>(QC4)</b>
<b>FTPFB1</b> <b>FTPFB2</b> <b>FTPFB3</b>	always often when external market exists	
<b>RSTP</b>	<b>REASONS FOR SAME/DIFFERENT TRANSFER PRICE</b>	<b>(QC6)</b>
<b>RSTP1</b> <b>RSTP2</b> <b>RSTP3</b> <b>RSTP4</b>	because of additional costs involved to encourage internal trade depending on the type of customer consistence and comparability	
<b>CDTP</b>	<b>CRITERIA FOR DOMINANCE OF TRANSFER PRICING POLICY</b>	<b>(QC7)</b>
<b>CDTP1</b> <b>CDTP2</b> <b>CDTP3</b> <b>CDTP4</b> <b>CDTP5</b> <b>CDTP6</b> <b>CDTP7</b> <b>CDTP8</b> <b>CDTP9</b>	simplicity and ease of implementation achieve corporate goals maximise divisional autonomy fairness and conflict resolution pinpoint divisional responsibility better performance evaluation information economies positive effects on economic decisions better knowledge of market conditions	
<b>OBTP</b>	<b>OBJECTIVES OF TRANSFER PRICING SYSTEM</b>	<b>(QC8)</b>
<b>OBTP1</b> <b>OBTP2</b> <b>OBTP3</b> <b>OBTP4</b> <b>OBTP5</b> <b>OBTP6</b> <b>OBTP7</b> <b>OBTP8</b>	performance evaluation of divisions performance evaluation of managers profit maximisation divisional autonomy managerial motivation price-driven market-driven resource allocation	

continued...

**Appendix H continued...**

<b>PERM</b>	<b>PERFORMANCE EVALUATION MEASURES</b>	<b>(QD3)</b>
<b>PERM1</b> <b>PERM2</b> <b>PERM3</b> <b>PERM4</b> <b>PERM5</b> <b>PERM6</b> <b>PERM7</b> <b>PERM8</b> <b>PERM9</b> <b>PERM10</b> <b>PERM11</b> <b>PERM12</b> <b>PERM13</b> <b>PERM14</b> <b>PERM15</b> <b>PERM16</b>	absolute profits ratio of profits to equity ratio of profits to total assets ratio of profits to sales residual income cost performance cash flow sales growth rate adherence to budgets product innovation market development earnings per share (EPS) product quality debtors levels stock turnover depend on nature of business	
<b>DMRC</b>	<b>DIVISIONAL MANAGERS REACTION TO FINANCIAL MEASURES OF PERFORMANCE</b>	<b>(QD5)</b>
<b>DMRC1</b> <b>DMRC2</b> <b>DMRC3</b> <b>DMRC4</b> <b>DMRC5</b> <b>DMRC6</b> <b>DMRC7</b> <b>DMRC8</b>	complain on the fairness of transfer pricing conflict over transfer prices indulge in bickering bias and build slack increase competition not cooperation increase mistrust between divisions increase mistrust with corporate management no significant effect	
<b>PRWD</b>	<b>SATISFACTORY PERFORMANCE REWARD</b>	<b>(QD6)</b>
<b>PRWD1</b> <b>PRWD2</b> <b>PRWD3</b> <b>PRWD4</b> <b>PRWD5</b>	promote increase pay give bonuses give more power consult on strategic decision-making	
<b>PSCN</b>	<b>UNSATISFACTORY PERFORMANCE SANCTIONS</b>	<b>(QD6)</b>
<b>PSCN1</b> <b>PSCN2</b> <b>PSCN3</b> <b>PSCN4</b> <b>PSCN5</b>	dismiss transfer advise/train give more power help to overcome weaknesses	

continued...

**Appendix H continued...**

<b>CSCF</b>	<b>CAUSES OF CONFLICT OVER TRANSFER PRICING</b>	<b>(QE1)</b>
<b>CSFC1</b> <b>CSFC2</b> <b>CSFC3</b> <b>CSFC4</b> <b>CSFC5</b> <b>CSFC6</b> <b>CSFC7</b> <b>CSFC8</b> <b>CSFC9</b> <b>CSFC10</b>	general dissatisfaction with the system centralisation of transfer pricing decision lack of trust between divisions restricted information flow lack of fairness of the system negotiation over transfer prices impact of the system on divisional profits importance of the transfer to the division non-existence of external market external market exists but divisions not free to trade in it.	
<b>CFRS</b>	<b>CONFLICT RESOLUTION</b>	<b>(QE2)</b>
<b>CFRS1</b> <b>CFRS2</b> <b>CFRS3</b>  <b>CFRS4</b>  <b>CFRS5</b> <b>CFRS6</b> <b>CFRS7</b> <b>CFRS8</b> <b>CFRS9</b>	by corporate management alone divisions ask for revision of transfer prices discuss the differences openly so as to reach compromise disregard differences and emphasise common interests opt for mutual concessions each division tries to win conflict for itself disputes not allowed at all no resolution procedures exist no significant conflict exists	
<b>FTRP</b>	<b>FREQUENCY OF TRANSFER PRICING REVIEW AND ADJUSTMENT</b>	<b>(QF1)</b>
<b>FTRP1</b> <b>FTRP2</b> <b>FTRP3</b> <b>FTRP4</b> <b>FTRP5</b> <b>FTRP6</b> <b>FTRP7</b> <b>FTRP8</b> <b>FTRP9</b>	monthly quarterly semi-annually annually on request from divisions consistence with budget when corporate management decide for each contract changes in market	

continued...

**Appendix H continued...**

<b>FCTR</b>	<b>FACTORS INFLUENCING THE REVIEW OF TRANSFER PRICES</b>	<b>(QF2)</b>
<b>FCTR1</b> <b>FCTR2</b> <b>FCTR3</b> <b>FCTR4</b> <b>FCTR5</b> <b>FCTR6</b> <b>FCTR7</b> <b>FCTR8</b> <b>FCTR9</b> <b>FCTR10</b> <b>FCTR11</b> <b>FCTR12</b> <b>FCTR13</b> <b>FCTR14</b>	reorganisation and changes in strategy changes in raw material and labour costs reevaluation of standard costs volume variances cost of capital rates of inflation level of competition fiscal year end new product development technological conditions budget cycle development of the operating plan government regulations market changes	
<b>RESL</b>	<b>RESULTS OF TRANSFER PRICING REVIEW AND ADJUSTEMENT</b>	<b>(QF3)</b>
<b>RESL1</b> <b>RESL2</b> <b>RESL3</b> <b>RESL4</b> <b>RESL5</b> <b>RESL6</b> <b>RESL7</b> <b>RESL8</b>	better efficiency of the system reducing conflict better control and performance evaluation optimal resource allocation improving fairness of the system convergence of corporate and divisional goals increasing conflict & dysfunctional behaviour more dissatisfaction with the system	

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