Military-experienced Senior Executives, Corporate Earnings Quality, and Firm Value

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Purpose: Accounting scandals and earnings management problems at large firms such as Global Crossing and Enron have resulted in lots of wealth loss not only to corporate investors, but also led tremendous damage to societies. Hence, policymakers and academic researchers have started to explore mechanisms to prevent improprieties in financial reporting and further enhance firm value. Using data from U.S.-listed companies between 2000 and 2018, this article explores the effect of ex-military executives on earnings quality, the role of financial analysts in their interplay, and the firm value implication of earnings quality driven by ex-military executives.

Findings: Authors reveal that companies with ex-military senior executives exhibit lower levels of accruals-based and real earnings management than those without. The effect of management military leadership on constraining earnings management is more prominent for companies with low analyst coverage, suggesting that the military experience of executives could be a substitute for external monitoring. Authors also find that these ethical managers alleviate the negative impact of earnings management on firm value and that companies managed by these managers exhibit higher firm performance.

Design/methodology/approach: This study employs a firm fixed-effects model to validate the main conjecture and adopts the weighted least squares, Granger causality analysis, instrumental variable approach, propensity score matching, entropy balancing approach, and dynamic system GMM estimator to address robustness and endogeneity issues.

Originality/value: This article adds new insights to the literature on the role of managerial military experience in decision-making processes, financial reporting outcomes, and firm performance by employing the upper echelons and imprinting theoretical perspectives.

Keywords: Accrual-based earnings management; Firm value; Imprinting theory; Military experience and ethical leadership; Real earnings management; Top management team

JEL Classifications: G30; G34; J24; M12; M40

1. Introduction

In recent decades, accounting scandals and severe earnings management problems at large entities such as Global Crossing and Enron have resulted in lots of wealth loss not only to corporate investors, but also led tremendous damage to societies. Hence, policymakers, regulatory authorities, and academic researchers have started to explore mechanisms to prevent the recurrence of improprieties in financial reporting and enhance shareholder value. For example, the Sarbanes–Oxley Act (SOX 404), enacted by the U.S. Congress in July 2002, requires all U.S. Securities and Exchange Commission (SEC) registrants to report on the effectiveness of financial control over earnings quality and to provide relevant auditor reports. Velury and Jenkins (2006) and Zhong *et al.* (2017) demonstrate that earnings quality improves as the investment by institutional investors increases. Kalelkar and Nwaeze (2011) note that the adoption of the SOX has increased the transparency in the valuation of earnings components. Although prior studies mainly focus on external governance to explain the occurrence of aggressive earnings management and pinpoint the mechanism that pushes companies toward better financial reporting quality (Irani & Oesch 2016), top management team (TMT) members' attributes receive only limited attention. This is surprising given that many senior-level executives have been found to be involved in damaging cases of accounting scandals and ethical breakdowns (Qi *et al.* 2018).

This research mainly explores the impact of ex-military executives on earnings quality and investigates whether their effects may vary across financial analyst coverage as well as the firm value implications linked to different levels of earnings management. In the 1980s, over half of Standard & Poor's 500 listed entities were headed by chief executive officers (CEOs) with a military background (Koch-Bayram & Wernicke 2018). Further, nearly 20% of Standard & Poor's 1500 entities appointed military-experienced CEOs in the 1990s (Law & Mills 2017). Even today, our data shows that approximately 40.8% of public

U.S. firms are run by ex-military executives between 2000 and 2018. Listed entities such as General Electric and Wal-Mart, which decry a lack of allegiance and leadership among junior executives, have also attempted to appoint young military officers, who have served in Afghanistan or Iraq, to address the concerns related to junior management leadership (O'Keefe 2010).

The impact of military service on personal characteristics has some societal and life consequences and implications. From a negative perspective, even for volunteer soldiers, military recruitment is considered a disruption of the youth human resource acquisition process compared with their civilian counterparts (Oi 1967). However, there are mounting findings of positive effects of the military background of executives in the business world. Compared with their counterparts, companies run by military-experienced managers are more likely to benefit from valuable leadership skills (Wong *et al.* 2003), exhibit better acquisition outcomes (Lin *et al.* 2011), and are related to lower audit fees (Quan *et al.* 2021). Despite these, the influence of the military background of senior executives on earnings quality, analysts' role in the above link, and market reactions to ex-military executives' financial reporting behaviours have received relatively little attention in the literature. Assessing the extent to which military-experienced executives influence earnings quality and related firm value may further provide a critical channel that pushes towards transparent reporting and economic performance.

The imprinting theoretical perspective notes that events experienced in the early stages of life (i.e., late adolescence) will usually exert significant and persistent influences on personal attributes later in life (Caspi *et al.* 2005). Individuals usually join the military in adolescence or young adulthood; thus, military service experience may play a part in shaping the attributes of military personnel. Military service may also alter behaviour in ways that could influence people who become senior managers (Luo *et al.* 2017). Most militaries

conduct well-organised training projects that associate on-the-job experience with education (Benmelech & Frydman 2015). Prior literature on sociology and organisational behaviours suggests that people can obtain hands-on leadership via military-related services, which is difficult to learn otherwise, and such people are capable of better decision-making under pressure (Benmelech & Frydman 2015). More importantly, the military service experience strongly emphasises the obedience of its personnel (Benmelech & Frydman 2015). The experience instils its personnel with values such as obedience, ethics, honesty, and integrity (Koch-Bayram & Wernicke 2018), these values and leadership which may be reinforced throughout military-experienced executives' careers. Hence, military-experienced senior executives may exhibit an attribute which is comparatively more likely to obey regulations and legal rules and highly stick to financial reporting practices that conform to the US Generally Accepted Accounting Principles (US GAAP), as well as make ethical decisions. This study examines whether the military service experience will guide 'individuals' (i.e., military personnel) to be more obedient to earnings reporting regulations and rules in the years after they have left the army and become senior executives. We argue that past military experience helps TMT members develop characteristics that enhance management leadership effectiveness, which cover the habit of precise honest communication and conscientiousness. These traits are likely to remain in place in the long run after the individual has left the military. Hence, we hypothesise that companies managed by ex-military senior executives are less likely to engage in earnings management.

We mainly focus on the military experience of TMTs because the roles played by them in a modern firm are considered to be important and have been widely examined in prior research (Ma *et al.* 2019). TMT members work in day-to-day operations, and they are responsible for improving business strategies and decision-making. Thus, it is worth investigating the attitudes and behaviours of ex-military TMT members in terms of earnings

management. Based on a sample of 49,110 U.S. firm-year observations between 2000 and 2018, our firm fixed-effect regression results show that firms run by ex-military senior managers exhibit lower levels of accrual-based earnings management compared with companies without. This effect is more prominent for companies followed by fewer financial analysts. Our additional analysis demonstrates that ex-military executives could alleviate the negative impact of earnings management on shareholder value and that companies run by these executives experience positive market reactions. Further, we develop our proxies for real activities manipulation because it often costs firms significant money and can reduce long-term performance under various settings (Xu *et al.* 2007). We find that ex-military executives help curtail real earnings management mainly through decreasing costs related to abnormal production. Finally, our empirical results survive various sensitivity and endogeneity tests.

Our study makes several important contributions to the literature. First, we update the ever-growing literature on the corporate outcomes of TMT by contributing to the upper echelons theoretical framework (Hambrick & Mason 1984; Buyl *et al.* 2014). Specifically, prior studies regarding the effects of ex-military directors or managers mainly focus on conservative and more precise financial disclosure styles (Bamber *et al.* 2010), merger and acquisition (M&A) outcomes (Lin *et al.* 2011), and investment decisions (Benmelech & Frydman 2015). We provide novel evidence of the effect of managers' military experience on earnings quality and show that the military service experience may act as a proxy for law-abiding and obedient behaviour, which matters in the context of corporate reporting behaviours. Our further analysis shows that ex-military executives address negative market reactions to earnings management. Although the military experience occurred decades before individuals entered the business world, the study findings indicate that the imprinting

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influence of the military experience cannot be easily shed, but it will persist in TMTs' decision-making process.

Second, our study contextualizes the literature on corporate governance and imprinting effects (Ma *et al.* 2019; Quan *et al.* 2021; Wesley *et al.* 2021) by empirically highlighting the importance of considering military imprint persistence. Specifically, we investigate the effect of TMTs' military leadership on constraining earnings management varies between companies followed by fewer financial analysts and those followed by more analysts, uncovering whether the earnings quality could be explained by the ex-military executives' intrinsic motivation to disclose trustfully. Also, senior executives who served longer in the army are more obedient to rules and regulations regarding financial reporting, thus enhancing internal governance and serving as a substitute for external monitoring.

Third, this study adds to the literature on the driving factors of earnings quality. Prior research has established that it is impacted by gender diversity (Srinidhi et al. 2011; Zalata et al. 2019), social capital (Jha 2017), institutional investors (Zhong et al. 2017), government and foreign ownership (Ben-Nasr et al. 2015), and disclosure of internal control weakness (Ji et al. 2017). Our study uncovers the military experience of senior executives as one of the important mechanisms that have the potential to promote a transparent reporting environment, thereby enriching the literature on the influence of executives' attributes on earnings quality (Ma *et al.* 2019).

The rest of this article proceeds as follows. The second section covers the theoretical framework, empirical literature, and hypothesis development. The third section presents the research design. The fourth section reports main findings and cross-sectional regression results. The fifth section extends the study by exploring firm value implications linked to ex-military executives. The sixth section performs robustness checks, and the final section concludes.

2. Theoretical lens and hypothesis development

2.1 Upper echelons and imprinting theoretical perspectives

This research mainly builds on the conceptual perspectives of the upper echelons theory (UET), which emphasises the influence of demographic attributes of top executives on corporate policies (Hambrick & Mason 1984; Hambrick 2007). Upper echelon executives rely heavily on their skills, functional backgrounds, and personalities in their management decisions (Plöckinger *et al.* 2016; Reimer *et al.* 2018; Turner & Merriman 2021). Specifically, the theory is based on two essential points: (1) TMT members' decision-making is mainly based on their understanding of the conditions of organizations in which they are engaged, and (2) their understanding of the above conditions is limited, being conditioned by their beliefs, previous job experience, and a range of relevant personal traits that selectively shift their focus and form their opinions. Simply put, the experiences, values, and career tracks of executives will significantly impact their interpretations of the situations that they encounter, which, in turn, affect their choices. Hence, the military experience provides a cultural environment different from that of civilian life and can generate long-lasting life-changing insights.

An increasing body of psychology and sociology literature suggests that the military service experience may instil its personnel 'a value system' which emphasises obedience and morality. A pioneering study, Stinchcombe (1965), formally introduced the notion of the imprinting effects to the organizational theory decades ago, consequently stimulating studies on the imprinting effects that reflect characteristics of the corresponding environment at different levels (Johnson 2007). Using a panel dataset consisting of 6,664 firm-year observations, Zhang *et al.* (2022) empirically reveal that firm managers with military imprint, which instils a sense of stewardship and following rules, tend to pursue innovative business strategies regarding environmental protection. Another empirical study explores why

corporate leaders with military experience are more likely to honestly self-report a financial restatement error, and finds that the culture regarding 'doing the right thing' advocated at each military service academy will influence managers' decision heuristics in the long term after they leave the military academy (Wesley *et al.* 2022). In the review of the imprinting theory, Marquis and Tilcsik (2013) note that a focal entity can generally help develop a series of attributes which may reflect prominent features of the external condition, and these attributes still exist even when the environment significantly changes over time. Applying this theoretical foundation to the military service experience, for example, the U.S. Army Operations Manual defines the core values shaping the character of military personnel as 'appropriate subordination to political power, obedience, allegiance, obligation, selflessness, morality, respect for human rights and a sense of justice' (Franke 2001). The U.S. Army emphasises these core values in military training and education. These traits of military servicepersons are evident in the corporate world, particularly in management culture and governance. For instance, companies managed by senior managers having military experience are highly likely to have minor internal control weaknesses and less unethical conduct (Quan *et al.* 2021), which suggests that military experience may confer senior executives with a stricter ethical and moral code. Studies on this issue are limited, and further investigation is needed to provide new insights into how military experience may impact corporate managers' beliefs and business strategies, as well as the implications for earnings management activities.

2.2 Link between ex-military executives and earnings quality

Earnings reporting and quality may serve as an essential channel of communication between corporate insiders and outside information users. As noted by Ma *et al.* (2019), corporate outsiders rely heavily on financial information to assess corporate operating activities, financial health, and future prospects. Since earnings reporting has critical

economic implications and consequences, the transparency of earnings information disclosed is highly associated with the decision-making of corporate information users. For example, transparent earnings reporting helps improve corporate investment efficiency and reduce the cost of equity capital, both of which have direct effects on firm performance (Biddle & Hilary 2006; Lambert *et al.* 2007). Therefore, scholars have been continually exploring specific driving factors of earnings quality (Ge *et al.* 2011).

Prior studies identify a series of firm- and market-level factors that can influence a firm's earnings quality and information disclosure quality (Lambert *et al.* 2007; Dechow *et al.* 2010; Srinidhi *et al.* 2011; Ma *et al.* 2019). Research on the impact of certain TMTs' traits on earnings reporting behaviour reveals that these attributes could either have a positive influence on the quality of earnings information or could be detrimental. Also, although Bamber *et al.* (2010) and Hoitash *et al.* (2016) have found companies run by ex-military TMT members disclose more conservatively, it is not clear whether their claimed impact is desirable because the resultant degree of conservatism may go beyond the optimal level (Lambert *et al.* 2007; Gigler *et al.* 2009; Lambert 2010).

TMT members particularly hold positions which can be either directly or indirectly involved in earnings reporting activities, and they may have incentives to engage in earnings management because financials usually reflect their managerial skills. The UET posits that senior managers' personalities and values strongly influence strategic decisions and performance. Functional backgrounds and other experiences can act as proxies for senior executives' personalities which provide filters for environmental and organisational interpretations. They, consequently, exert an influence on the decisions these executives make (Hambrick & Mason 1984; Ma *et al.* 2019). Manipulation of earnings is among those corporate decisions that are impacted by senior executives, because corporate earnings capabilities are highly linked to executive compensation packages (Ibrahim & Lloyd 2011).

As mentioned earlier, Akerlof and Kranton (2005) argue that service in the military will encompass a series of socialisation processes and explicitly make changes to the personality traits and behaviour of military personnel. For example, the high expectations regarding required behaviours, explicit norms, and the upholding of the military culture set by the U.S. military could significantly shape the daily behaviours of military personnel. The military also has an established incentive system to reward people who meet these stakeholder expectations and penalise those who do not (Jackson *et al.* 2012). Military service is one of the most far-reaching activities in a person's life course, since the military service will normally occur early in life and before many other triggering events that may pose other profound influence on personal traits (Elder *et al.* 1993).[1] Through the above military-related training and prescriptions of behaviour, the military experience will play an important role in shaping individual personalities and inducing values such as honesty and self-discipline (MacLean & Elder 2007). These, in turn, influence an individual's later legal behaviour and working life. Specifically, honest communication and integrity leadership attributable to military experience is reinforced throughout their careers, thereby inducing ex-military TMTs to prefer to base ethical decisions on data and facts. Taken together, whether to engage in earnings management could be considered a decision in which senior executives are involved, where they could apply their own value system. This study conjectures that ex-military senior executives reflect moral values, which may drive these senior executives to behave comparably more obediently regarding accounting rules and regulations (i.e., the U.S. GAAP). Thus, we predict that senior executives with military backgrounds are less likely to engage in the misapplication of accounting principles and are more likely to make ethical operating decisions, thereby maintaining good earnings quality.

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[1] For example, the CEO of Verizon, Lowell McAdam, said about his service in the Navy: 'The things you learn in the service will stay with you your whole life'. Details are available at https://www.veteransadvantage.com/blog/veterans-advantage-awards/topvet-lowell-mcadam-verizon.

A different perspective may exist. Malmendier *et al.* (2011) note that companies headed by CEOs who have ever participated in the military service are more likely to choose aggressive business strategies. Elder (1986) and Elder and Clipp (1989) find that military service experience could result in overconfidence. Some studies that evaluate senior executives' traits, such as aggressiveness and overconfidence, find that these traits are related to greater earnings management behaviours because these executives attempt to meet earnings targets via aggressive manipulation strategies (Hsieh *et al.* 2014; Hribar & Yang 2016). Hence, senior executives having military experience may, to some extent, be associated with greater earnings manipulation. However, according to more recent empirical evidence and core military values imprinted in ex-military senior executives (Quan *et al.* 2021), we argue that aggressiveness may not fully and directly indicate unethical and dishonest behaviours, and rather, executives with military service experience, given their character, tend to honestly engage in financial reporting. Thus:

Hypothesis 1: *Companies with senior executives who have military service experience are linked to better earnings quality relative to companies without such executives.*

2.3 Role of financial analysts in the link between ex-military executives and earnings quality

Further, the UET suggests whether the demographic characteristics of senior executives have weaker or stronger effects on corporate policies or behaviours may be influenced by the extent of managerial discretion and flexibility (Hambrick *et al.* 1987). That is, when managers have a higher level of latitude of action within the firm, their demographic characteristics may exert a greater influence on corporate policies (Finkelstein & Hambrick 1990; Finkelstein & Boyd 1998). Managerial discretion and flexibility normally appears where there are relatively few external constraints (Ma *et al.* 2019). Thus, when the external constraints are weak, TMT members may have strong ambiguity of action and thus rely more

on their personal experiences in making decisions or engaging in corporate activities. If the improvement in earnings quality is driven by senior executives' intrinsic motive to report trustfully and clearly, this effect is expected to be more salient at the time when the monitoring provided by the external governance is weak.

We mainly focus on the role of the monitoring pressures from the capital market (i.e., the scrutiny by analysts) in the interplay between military-experienced executives and earnings quality. Aerts *et al.* (2007) and Ma *et al.* (2019) highlight the strong influence of the scrutiny by financial analysts on senior executives' disclosure behaviours and on the production of firm specific information, thereby constraining the level of latitude of action of these executives. Therefore, we expect that, when a firm is followed by more financial analysts, senior managers may have less leeway to perform their duties or exert their influence. If the military experience is indeed a source of intrinsic ethical motivation, the association between executives' military experience and earnings quality should be more prominent in companies monitored less intensively. More formally:

Hypothesis 2: *The influence of military-experienced senior executives on earnings quality will be more salient when companies are followed by fewer financial analysts.*

3. Research design

3.1 Sample and data

We identify our key variables for TMT members with military backgrounds using BoardEx, which compiles the full list of corporate directors, senior managers (executives), and disclosed earners, and provides historical employment information on each of these individuals. BoardEx data is widely used in prior studies (Sunder *et al.* 2017; Simpson & Sariol 2018; Fu & Zhang 2019; Hegde & Mishra 2019). It uses 'Armed Forces' as a category under 'Organization Category'. TMT members with the 'Armed Force' label are classified as ex-military senior executives. Specifically, we follow Luo *et al.* (2017), Wiengarten *et al.*

(2017), Reimer *et al.* (2018), Ma *et al.* (2019), and Li *et al.* (2021) to define the TMT as comprising the senior executives who are directly involved in corporate investment, financing, reporting and general operating activities, including a firm's CEO, chairperson, chief financial officer (CFO), chief operating officer (COO), senior vice president, managing director, chief accountant, and general and vice manager. To provide a more comprehensive view of senior executives' military backgrounds, we manually collected detailed information from corporate filings archived by Bloomberg, since some executives' information is missing in BoardEx.[2]

We extract financial, accounting, and stock market variables from the COMPUSTAT and CRSP. We then combine TMT military information with COMPUSTAT and CRSP data. This generates an initial sample of 54,385 firm-year observations. Next, we exclude 5,275 firm-year observations from the financial industry (SIC codes 6000-6900) and the utility industry (SIC codes 4900-4949) because of their nuanced accounting rules, regulatory requirements, and financial incentives. After including non-missing data on TMTs' military experience, earnings quality, and control variables, we are left with a final sample of 49,110 observations, including 6,160 U.S. listed companies between 2000 and 2018. Our sample begins in 2000 due to the limited coverage of firms and managers' employment history in BoardEx prior to that year (Ege *et al.* 2022).

3.2 Measurement of earnings quality

3.2.1 Accrual-based earnings management

Prior studies mainly use measures of discretionary accruals as surrogates for earnings quality (Jones 1991; DeFond & Subramanyam 1998; Kim *et al.* 2012). We use the residuals from the annual cross-sectional industry regression model as our estimates of a firm's

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[2] For example, Alex Gorsky, the CEO/Chairman of Johnson & Johnson, was a member of the Army's elite Rangers and served in Europe, the U.S., and Panama. This West Point graduate served in the Army for six years, eventually achieving the rank of captain. He began his career in sales at the health products giant and rose up the ranks of J&J to become the CEO in 2012. Details are available at https://www.bloomberg.com/profile/person/16239711.

discretionary accruals. We augment the modified Jones model by including the one-year-lagged return on assets (*ROA*) as an explanatory variable. More formally:

$$\frac{TACC_{i,t}}{A_{i,t-1}} = \alpha_0 \frac{1}{A_{i,t-1}} + \alpha_1 \frac{\Delta REV_{i,t}-\Delta REC_{i,t}}{A_{i,t-1}} + \alpha_2 \frac{PPE_{i,t}}{A_{i,t-1}} + \alpha_3 \frac{IBXI_{i,t-1}}{A_{i,t-1}} + \varepsilon_{i,t} ,$$

(1)

where *TACC* is the total accruals for a firm in a given fiscal year; ΔREV is the net revenues for a firm in year *t* minus its net revenues in year *t-1*; ΔREC is the change in net receivables in year *t* from year *t-1*; *PPE* is the gross property, plant, and equipment; *IBXI* is the income before extraordinary items; and *A* is the book value of total assets. We use the absolute value of discretionary accruals (*ABS_DA*) as a proxy for earnings quality since earnings management can involve either income-increasing or -decreasing accruals (Kim *et al.* 2012). Higher values of *ABS_DA* indicate worse quality. According to our inferences, we expect a negative link between proxies for military backgrounds and the absolute value of discretionary accruals.

3.2.2 Real earnings management

Roychowdhury (2006), Cohen and Zarowin (2010), and Kim *et al.* (2012) define real earnings management as the management actions which deviate from normal business practices undertaken for meeting or beating certain earnings thresholds. Following prior studies (Roychowdhury 2006; Cohen *et al.* 2008; Cohen & Zarowin 2010; Zang 2011; Kim *et al.* 2012), we develop our proxies for real activities manipulation. In doing so, we use the following measures to inspect real earnings management: (1) abnormal levels of operating cash flows (*REM_CFO*), (2) abnormal production costs (*REM_PROD*), (3) abnormal discretionary expenses (*REM_DISX*), (4) the first combined proxy (*REM_1*), and (5) the second comprehensive metric (*REM_2*). The abnormal levels of the first three real activities manipulation are measured as the residual from the relevant models estimated by year and the two-digit Standard Industrial Classification (SIC) industry code.

Sales manipulations are expected to result in lower levels of current operating cash flows. We employ the method in Roychowdhury (2006) and Kim *et al.* (2012) and specify the following regression to estimate the normal level of operating cash flows:

$$\frac{CFO_{i,t}}{A_{i,t-1}} = \alpha_0 + \alpha_1 \frac{1}{A_{i,t-1}} + \alpha_2 \frac{Sales_{i,t}}{A_{i,t-1}} + \alpha_3 \frac{\triangle Sales_{i,t}}{A_{i,t-1}} + \varepsilon_{i,t} ,$$

(2)

where *CFO* denotes the cash flow from operations; net sales are denoted by *Sales*; and *△Sales* is the change in net sales from year *t* to year *t-1*. For each firm-year observation, the abnormal cash flow from operations (*REM_CFO*) is measured by the residual from the corresponding industry-year model and the firm-year's sales and lagged assets.

We next follow Roychowdhury (2006), Cohen *et al.* (2008), Badertscher (2011), Zang (2011), and Kim *et al.* (2012) to estimate the abnormal production costs. These studies define production costs as the sum of the cost of goods sold (*COGS*) and change in inventory during the year, and they express expenses as a linear function of contemporaneous sales. The normal level of *COGS* is estimated as follows:

$$\frac{COGS_{i,t}}{A_{i,t-1}} = \alpha_0 + \alpha_1 \frac{1}{A_{i,t-1}} + \alpha_2 \frac{Sales_{i,t}}{A_{i,t-1}} + \varepsilon_{i,t} ,$$

(3)

where *COGS* is the cost of goods sold in year *t*. Next, we use the following equation to model inventory growth:

$$\frac{\triangle INV_{i,t}}{A_{i,t-1}} = \alpha_0 + \alpha_1 \frac{1}{A_{i,t-1}} + \alpha_2 \frac{\triangle Sales_{i,t}}{A_{i,t-1}} + \alpha_3 \frac{\triangle Sales_{i,t-1}}{A_{i,t-1}} + \varepsilon_{i,t} ,$$

(4)

where *△INV* is the change in inventory in year *t*. Using Eqs. (3) and (4), we estimate the normal level of production costs from the model specification below:

$$\frac{PROD_{i,t}}{A_{i,t-1}} = \alpha_0 \frac{1}{A_{i,t-1}} + \alpha_1 \frac{Sales_{i,t}}{A_{i,t-1}} + \alpha_2 \frac{\triangle Sales_{i,t}}{A_{i,t-1}} + \alpha_3 \frac{\triangle Sales_{i,t-1}}{A_{i,t-1}} + \varepsilon_{i,t} ,$$

(5)

The abnormal production cost (*REM_PROD*) is measured as the difference between the actual values and the normal levels. That is, the residual estimated from Eq. (5).

Following Kim *et al.* (2012) and Irani and Oesch (2016), we introduce a third proxy for real activities manipulation, that is, abnormal discretionary expenses.

$$\frac{DISX_{i,t}}{A_{i,t-1}} = \alpha_0 + \alpha_1 \frac{1}{A_{i,t-1}} + \alpha_2 \frac{Sales_{i,t-1}}{A_{i,t-1}} + \varepsilon_{i,t} ,$$

(6)

where *DISX* is the discretionary expenses in a given year *t*, defined as the sum of advertising expenses, R&D expenses, and SG&A. For each firm-year, the abnormal discretionary expenditure (*REM_DISX*) is measured as the difference between the actual values and the normal levels estimated from Eq. (6).

To capture the total effects, we follow Cohen and Zarowin (2010) and Ni (2020) to construct our first comprehensive metric *REM_1* as *REM_PROD – REM_DISX* and the second comprehensive metric *REM_2* as *– REM_CFO – REM_DISX*. When companies engage in more aggressive real earnings management, our combined real activities manipulation proxies will increase. If the empirical results are consistent with our main conjecture, then companies run by senior executives having military experience are negatively linked to *REM_1*, *REM_2*, and *REM_PROD*, and positively related to *REM_CFO* and *REM_DISX*.

3.3 Econometric model

To test the validity of our hypothesis, we specify the following panel regression model:

$$EM_{i,t} = \alpha + \beta_1 MILITARY\_D_{i,t-1} + \beta_2 CONTROL_{i,t-1} + FIRM\ FIXED\ EFFECTS +$$

$$YEAR\ FIXED\ EFFECTS + \varepsilon_{i,t}, \tag{7}$$

where *EM* includes several measures of earnings management (*ABS_DA*, *POSITIVE_DA*, *NEGATIVE_DA*) of firm *i* in year *t*. For brevity, we perform the real earnings management regressions (*REM_1*, *REM_2*, *REM_CFO*, *REM_PROD*, and *REM_DISX*) in robustness

checks. *MILITARY_D* is a categorical variable equal to one if a company appoints at least one military-experienced senior executive in a given fiscal year, and zero otherwise. Next, we employ *MILITARY_RATIO*, computed as the number of senior managers having military experience scaled by the total number of TMT members, as an alternative proxy for the military background. If the military service experience affects earnings quality as predicted, we expect β_1 to be significantly negative when the dependent variable is *ABS_DA*. When the dependent variables are *REM_1*, *REM_2*, or *REM_PROD* (*REM_CFO*, *REM_DISX*), we expect β_1 to be significantly negative (positive).

Following previous studies (Osma 2008; Lee & Masulis 2009; Kim *et al.* 2012; Lara *et al.* 2017; Gull *et al.* 2018; Fan *et al.* 2019; Sha *et al.* 2021), we control for a wide range of factors (*CONTROL*) that are known to affect earnings quality. Specifically, a company's size (*SIZE*), measured as the natural logarithm of the book value of total assets, is included in our model, because larger companies are less likely to engage in earnings management. The leverage ratio (*LEV*) controls for the leverage-incentives for earnings management. Return on assets (*ROA*), measured as the net income scaled by the book value of total assets, is a proxy for a company's operating performance. Tobin's Q (*Q*) denotes growth potential. *CASH*, the ratio of the net operating cash flow to the book value of total assets, reflects a company's financial slacks. *RD* captures the R&D intensity. We also add a set of governance variables, including the CEO-Chairman duality (*DUALITY*) and the fraction of independent directors (*INDEP*). *FEMALE*, the percentage of female directors in the boardroom, captures the gender diversity. To the extent that earnings management might differ for companies audited by large auditing organizations, we employ *BIG4*, a dummy variable set to one if the company is audited by one of the Big 4 auditors (i.e., PwC, E&Y, KPMG, and Deloitte) and zero otherwise, since the presence of a big audit firm is linked to higher quality of earnings. See Appendix 1 for detailed variable constructions and data sources. We employ the firm fixed-

effect model in the main regression analysis, with year dummies included, to address potential concerns related to omitted time-invariant firm-specific factors. Standard errors are corrected for heteroskedasticity and clustered at the firm level.

4. Results and discussions

4.1 Summary statistics

Table 1 shows the sample distribution across years and industries. Panel A displays the year distributions for the accrual-based earnings management and real earnings management samples. Both samples show a marked increase in the number of observations in 2004, and the samples remain relatively constant in years subsequent to 2004. As shown in Panel B, the first two-digit SIC industries with larger representation are industries 73 (Business Services), 28 (Chemical & Allied Products), 36 (Electronic & Other Electric Equipment), and 38 (Instruments & Related Products).

[Insert Table 1 here]

The descriptive statistics of all variables are displayed in Table 2. First, *ABS_DA*, a proxy for accrual-based earnings management, has a mean (median) of 0.114 (0.063) and a standard deviation of 0.234, which is comparable to the findings reported by Kim *et al.* (2012). *REM_1*, an aggregate real activities management proxy, varies from –3.365 to 1.480, with a mean (median) of −0.152 (−0.051) and a standard deviation of 0.728. The mean values of *REM_CFO* and *REM_PROD* are −0.028 and −0.006, respectively, suggesting that, on average, companies do not seem to engage in real activities manipulation, such as sales manipulation or overproduction.[3] *REM_DISX* has a mean (median) value of 0.196 (0.011), with a standard deviation of 4.464. Second, for key independent variables, the mean value of *MILITARY_D* is 0.408, suggesting that 40.8% of our sample companies have senior executives with military experience. The mean value of *MILITARY_RATIO* is 0.032, meaning

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[3] As reported in Kim *et al.* (2012), the mean values of the abnormal cash flows from operations and abnormal production costs are 0.129 and -0.096, respectively.

that the percentage of ex-military executives on the TMT is 3.2% in our sample. 6.7% (2.2%) of our sample companies have military-experienced CEOs (CFOs).[4] In terms of some other variables, the means of the firm size (*SIZE*), leverage ratio (*LEV*), operating performance (*ROA*), and growth opportunities (*Q*) are 6.245, 0.597, −0.080, and 2.359, respectively. Moreover, 57.4% of the board directors are independent (*INDEP*), 8.6% of the board members are female (*FEMALE*), and 75.6% of firm-years are audited by the Big Four accounting firms (*BIG4*).

[Insert Table 2 here]

4.2 Main results

We estimate Eq. (7) to investigate the effect of military-experienced senior executives on accrual-based earnings management and report the results of the firm fixed-effects regressions in Table 3. The baseline result in column 1 shows a negative relationship between *MILITARY_D* and the magnitude of earnings management, *ABS_DA*, indicating that companies headed by military-experienced senior executives are less likely to engage in earnings management through discretionary accruals, which is evident by the negative and significant coefficient on *MILITARY_D* (t = −2.6118). Importantly, this effect is economically significant: the absolute value of discretionary accruals is, on average, 8.16% lower for companies with ex-military senior executives than for those without.[5] Similarly, in column 2, the coefficient on *MILITARY_RATIO* is significantly negative (−0.1045, t = −2.3075), indicating that a higher proportion of ex-military executives on the TMT is negatively associated with accrual-based earnings management. All else being equal, a one-standard-deviation increase in the ratio of ex-military TMT members (*MILITARY_RATIO*) translates into approximately 0.62-percentage point decrease in the absolute value of

[4] Our summary statistic regarding the ex-military CEOs is comparable to that reported by Benmelech and Frydman (2015), who document that 6.2% of CEOs of U.S.-listed entities have a military background.
[5] In column 1 of Table 3, the coefficient on *MILITARY_D* is -0.0093, and the mean value of *ABS_DA* reported in Table 2 is 0.114. These results indicate that the absolute value of discretionary accruals for companies having military-experienced senior executives will decrease by an average of 0.0093; hence, 0.0093/0.114=8.16%.

discretionary accruals. Given an average value of 0.114 for *ABS_DA*, this change represents an 5.41% reduction in the degree of accrual-based earnings management.[6] These results are in line with our theoretical prediction that firms managed by military-experienced senior executives exhibit better earnings quality relative to firms without such executives.

[Insert Table 3 here]

Further, we report the results using the positive and negative discretionary accruals (*POSITIVE_DA* and *NEGATIVE_DA*) in columns 3–4 and 5–6 of Table 3, respectively. Specifically, in the third column, *MILITARY_D* attracts a significantly negative coefficient (−0.0108, t = −2.5686) in the sample of companies with *POSITIVE_DA*, suggesting that companies run by senior executives having military experience engage less in income-increasing earnings management via accruals. That is, military experience helps deter corporate managers from reporting aggressive earnings. In the sixth column, we observe a significant and positive link between *MILITARY_RATIO* and *NEGATIVE_DA* (0.1676, t = 3.6788), implying that companies with a higher proportion of military-experienced executives on the TMT engage less in income-decreasing earnings management. In sum, the results in Table 3 support our first hypothesis.

4.3 The role of the scrutiny of financial analysts

Next, we examine the scope of the influence of TMTs' military experience on earnings quality, with a particular focus on the role of the external scrutiny of financial analysts in their interplay. In doing so, we empirically test whether the effect of military-experienced executives on constraining earnings management is more pronounced for companies followed by fewer financial analysts. We introduce an interaction term between *MILITARY_D* and *HIGH_ANALYST* to Eq. (7) and re-run the equation, where *HIGH_ANALYST* is a dummy variable assigned a value of one if the number of financial

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[6] This number is calculated as −0.1045×0.059=−0.0061655 or −0.62%, based on the standard deviation of 0.059 for *MILITARY_RATIO* displayed in Table 2. The percentage change in the level of the accrual-based earnings management is calculated as −0.0061655/0.114 = −5.41%.

analysts following a corporation is equal to or greater than the annual sample median of the number of analysts and zero otherwise. Table 4 reports the moderating influence of analyst coverage on the link between military-experienced senior executives and accrual-based earnings management. Taking the result of *ABS_DA* regression displayed in column 1 as an example, we find that the coefficients on *MILITARY_D* (–0.0186, t=–3.3862) and *MILITARY_D×HIGH_ANALYST* (0.0175, t=3.7173) are significant and in line with our expectations, indicating that the effect of the presence of ex-military senior executives on constraining accrual-based earnings management is more pronounced in companies with less effective monitoring (manifested as low analyst coverage). Specifically, the influence of *MILITARY_D* on *ABS_DA* is –0.0186 (= –0.0186+0.0175×0) in companies with low analyst coverage,[7] while that of *MILITARY_D* is –0.0011 (= –0.0186+0.0175×1) in companies with high analyst coverage.

[Insert Table 4 here]

After adopting the firm fixed effects model in column 1 of Panel A in Table 4, it is theoretically appropriate to carry out the procedures of Aiken *et al.* (1991) to estimate the simple slopes of the focal predictor (*MILITARY_D*) at different values of the moderator (*HIGH_ANALYST*).[8] Given that we have a large sample size, the estimation bias related to the simple slopes test will not be material (Aiken *et al.* 1991; Liu *et al.* 2017). When executing this procedure, we need to obtain simple slopes of *MILITARY_D* on *ABS_DA* at several points of *HIGH_ANALYST* (the moderator). There are two general ways of selecting the moderator's values to test the simple slope of *ABS_DA* on *MILITARY_D*. First, we can choose meaningful fixed values based on the nature of the moderator. Second, we can choose

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[7] The influence of *MILITARY_D* on *ABS_DA* in companies with low analyst coverage (*HIGH_ANALYST* = 0) can be interpreted as: –0.0186×*MILITARY_D* + 0.0175×*MILITARY_D*×*HIGH_ANALYST* = (–0.0186 + 0.0175× *HIGH_ANALYST*) ×*MILITARY_D* = (–0.0186 + 0.0175 × 0)×*MILITARY_D* = –0.0186×*MILITARY_D*.

[8] $ABS\_DA = (\alpha + \lambda_2 \ HIGH\_ANALYST) + (\lambda_1 + \lambda_3 \ HIGH\_ANALYST) \times MILITARY\_D + \lambda_4 CONTROL + FIRM \ FIXED \ EFFECTS + YEAR \ FIXED \ EFFECTS + \varepsilon_{i,t}$, where $(\lambda_1 + \lambda_3 HIGH\_ANALYST)$ is the simple slope of *MILITARY_D* at a particular value of *HIGH_ANALYST*.

a few convenient sample-based values (i.e., the mean value of the moderator, one standard deviation below the mean, and one standard deviation above the mean). In our case, both the independent variable and the moderator are dummy variables; that is, they only show a value of either one or zero. Thus, we can only test the simple slopes at two points (i.e., high analyst coverage vs. low analyst coverage), which is equivalent to the marginal effects of *MILITARY_D* on *ABS_DA* in the group of firms with lower analyst coverage and the group with higher analyst coverage. The coefficients with standard errors of the simple slopes test are displayed in Panel B of Table 4. The results show that ex-military executives significantly reduce the degree of accrual-based earnings management by approximately 0.0186 (Z-stat = −3.3862) in terms of the magnitude in firms with lower analyst coverage; however, in firms with better analyst monitoring, ex-military executives only reduce the level of earnings management by 0.0011, the slope which is not significantly different from zero (Z-stat = −0.3889), underpinning the interpretation of the results displayed in the interaction term and the main variables in column 1 of Panel A in Table 4.

To facilitate the graphical interpretation of the abovementioned effect, we plot the simple regression lines for the high and low analyst coverage groups in Figure 1. This figure splits the lines by the levels of the moderating variable and shows the two groups have different slopes. Specifically, the steeper down-sloping line (the dark blue line) demonstrates that in firms with lower analyst coverage, ex-military executives help mitigate more earnings management issues. The flatter down-sloping line (the red one) shows that in firms with already high analyst coverage, the influence of ex-military executives on constraining earnings management is less salient.

[Insert Figure 1 here]

Next, we plot the marginal effects of *MILITARY_D* on *ABS_DA* in the high-analyst-coverage and the low-analyst-coverage groups with 95% confidence intervals in Figure 2.

This figure shows that the magnitude of the influence of ex-military executives on accrual-based earnings management significantly varies across the number of financial analysts: in firms with lower analyst coverage, the coefficient of ex-military executives on constraining earnings management is significantly different zero (Point A); however, in firms with high analyst coverage, the influence of ex-military executives on constraining earnings management is close to zero (Point B).

[Insert Figure 2 here]

This influence is also observed in column 2 of Table 4: the magnitude of the influence of *MILITARY_RATIO* on *ABS_DA* in companies with low analyst coverage is –0.1437 (–0.1437+0.1412×0), whereas that of *MILITARY_RATIO* in companies with high analyst coverage is –0.0025 (–0.1437+0.1412×1). Similarly, the results displayed in columns 3, 5, and 6, the magnitudes of *MILITARY_D* (*MILITARY_RATIO*), and interaction terms between any of these management military proxies and *HIGH_ANALYST* together produce the same economic meaning.[9] Hence, the better earnings quality is mainly due to the ex-military executives' intrinsic motive to disclose trustfully, confronting to our second hypothesis.

5. Market perceptions of the enhanced earnings quality driven by ex-military executives

The literature to date has identified the importance of earnings quality in firm value (Gaio & Raposo 2011). Managed earnings weaken corporate controls, aggravate information asymmetry, and mislead investments, hence resulting in higher costs of capital and lower firm value (Bushman & Smith 2001; Gaio & Raposo 2011). Because ex-military senior executives, who possess ethical and integrity qualities, could help address issues associated with aggressive earnings management and thus convey a trustworthy signal to market participants, we conjecture that the ethical qualities of ex-military managers can compensate

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[9] In unreported analysis, we also test this assumption by partitioning our sample into two subsamples with high and low analyst coverage and find that the effect of military-experienced senior managers on accrual-based earnings management is more pronounced in companies followed by fewer financial analysts, who tend to provide less effective monitoring, when compared with greater analysts.

for the adverse value consequence of poor earning quality. Hence, when the market believes that ex-military executives will behave more ethically and rectify the misguided accounting policy, it imposes less severe punishment on earnings management.

To test the above economic related conjecture, we employ Tobin's Q to proxy the market's perception of firm value and present the results of the incremental effects of earnings quality in Table 5. As expected, we find a negative and significant coefficient on *ABS_DA*, suggesting earnings management reduces firm value. The coefficient on *MILITARY_D* is positive (0.0516) and statistically significant at the 5% level, consistent with the idea that companies' long-term value is high if senior managers are perceived as trustworthy and ethical (Guiso *et al.* 2015). More importantly, the coefficient on the interaction term (*MILITARY_D×ABS_DA*) is significantly positive, indicating that the ethical qualities of ex-military managers can compensate for the adverse value consequence of poor earning quality.

[Insert Table 5 here]

6. Robustness checks and endogeneity

To examine the validity and sensitivity of our results regarding the impact of managerial military experience on earnings quality, we perform the following robustness tests.

6.1 Proxies for real earnings management

We re-run Eq. (7) by employing the measures of real activities manipulation (*REM_1*, *REM_2*, *REM_CFO*, *REM_PROD*, and *REM_DISX*) as alternative dependent variables, respectively, and control for year and industry fixed effects. These results are displayed in columns 1–5 of Table 6. For the regressions of our comprehensive measures of real earnings management (columns 1–2), the coefficient on *MILITARY_D* is both significantly negative. For the regressions of *REM_CFO* and *REM_DISX* (see columns 3 and 5, respectively), the

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estimated coefficients on *MILITARY_D* are both positive, but insignificant. Notably, the coefficient on *MILITARY_D* is negative and statistically significant at the 1% level in column 4, where the dependent variable is the abnormal production cost (*REM_PROD*). Given that lower levels of overall real activities manipulation and abnormal production costs imply more conservative operating decisions, our results indicate that ex-military executives tend to curtail real earnings management mainly by reducing abnormal production costs.

[Insert Table 6 here]

6.2 Variations in the measurement of TMT military experience

Next, we investigate the effects of CEO and CFO military experience backgrounds on earnings management because the roles played by the CEO and CFO regarding reporting activities are more important than those played by other senior managers in the firm (Ma *et al.* 2019). Zhang and Wiersema (2009) argue that attributes of the CEO send important signals to the investment community regarding the credibility of the CEO certification, and, thus, the quality of the firm's financial statements, which, in turn, affects the stock market reaction to the CEO certification. Also, Ma *et al.* (2019) argue that CFO plays a more direct role in financial reporting activities. To mitigate the potential concern that our key finding is solely driven by CEOs' or CFO's military experience, we employ two dummy variables, *MILITARY_CEO* and *MILITARY_CFO*, respectively, as our key independent variable, and re-estimate Eq. (7). *MILITARY_CEO* (*MILITARY_CFO*) equals one if the CEO (CFO) has a military background, and zero otherwise.

The results in columns 1-2 of Table 7 reveal that the estimate on *MILITARY_CEO* (*MILITARY_CFO*) is negative and statistically significant, implying that firms run by ex-military CEOs (CFOs) are associated with better earnings quality. We further examine other TMT members' military experience. Extensive studies have shown that CEO has a significant impact on a range of firm policies, such as leverage, cash holding, capital expenditure,

acquisitions, and disclosure activities (Hertwig *et al.* 2004; Hertwig & Erev 2009; Custódio & Metzger 2013, 2014; Dittmar & Duchin 2016; Kalelkar & Khan 2016). There is no denying that the CEO is one of the most important characters in a firm, implying that CEOs may drive our results. However, the role of TMT cannot be underestimated because prior literature has highlighted the importance of the roles of all TMT members in day-to-day operations and in improving decision-making and business strategies (Cyert & March 1963). The UET (Hambrick & Mason 1984) argues that it is the positive interaction among all TMTs that creates a magnified impact on firm policies and outcomes. To validate the importance of TMT, we repeat our main analysis by using a re-defined ratio of senior executives having military experience (*MILITARY_RATIO_EXCEO*), where CEOs are removed from the TMT.[10]

Column 3 of Table 7 demonstrates that the estimate on *MILITARY_RATIO_EXCEO* is negative and highly significant (t = −2.3271), confirming that the CEO's military experience does not solely drive the association between TMT's military experience and earnings quality. The strong integrity leadership formed through the military experience motivate the whole TMT to communicate and report trustfully, thereby facilitating the awareness of ethical conduct and transparency throughout corporate disclosure activities.

[Insert Table 7 here]

6.3 The length of military service

As the length of military service increases, the ethical imprints attributable to military experience tend to have a more influential and long-lasting effect on the military serviced people. Therefore, in this auxiliary analysis we follow Benmelech and Frydman (2015) and Koch-Bayram and Wernicke (2018) to test if differences in terms of the length of military service experience may affect the level of earnings management. *LENGTH* is measured as the

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[10] More specifically, *MILITARY_RATIO_EXCEO* is measured as the number of TMT members with military experience over the total number of TMT members, where CEOs are excluded from the TMT.

average number of years that senior executives served in the military. We then re-estimate Eq. (7) by replacing *MILITARY_D* with *LENGTH* and report the result in column 4 of Table 7. The estimate on *LENGTH* is negative and statistically significant, indicating that companies run by senior executives who served longer in the army exhibit better earnings quality.

6.4 Controlling for TMT heterogeneity

Building on the UET, Liu *et al.* (2016) and Belot and Serve (2018) find that companies run by female CEOs (or female CFOs) engage in less earnings management than do male-run companies. Plöckinger *et al.* (2016) and Qi *et al.* (2018) argue that the demographic characteristics (i.e., gender, financial work experience, age, and education backgrounds) of the entire executive team are significantly associated with both accrual- and real-activities-based earnings management; these, in turn, affect a firm's earnings quality. To mitigate the concerns that our result may be biased by the omitted executive team heterogeneity, we additionally control for *FEMALE_CEO*, a dummy variable set to one if a firm's CEO is female, and zero otherwise; *FEMALE_CFO*, an indicator variable equal to one if a firm's CFO is female, and zero otherwise; *TMT_FEMALE*, measured as the proportion of female executives on the TMT; *TMT_FINANCIAL*, calculated as the percentage of managers with financial experience on the TMT; *TMT_AGE*, the natural logarithm of the average age of senior executives; and *TMT_IVY*, defined as the percentage of executives who graduated from Ivy League institutions on the TMT. We then re-estimate Eq. (7). Column 5 of Table 7 reveals that the estimate on *MILITARY_D* remains significantly negative (− 0.0094, t = −2.5588). The evidence suggests that our key finding is robust to controlling for TMT heterogeneity.[11]

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[11] In unreported analysis, we also control for the effect of litigation risk by including an indicator variable (*LITIGATION*) which is set to 1 if a firm operates in a high litigation risk industry. Our result confirms a negative link between military-experienced executives and earnings management.

6.5 Excluding companies in services and certain manufacturing industries

We further examine the industry distribution of military hiring companies using the two-digit SIC classification. As shown in Panel A of Appendix 2, companies operating in Business Services (SIC 73), Chemical & Allied Products (SIC 28), Electronic & Other Electric Equipment (SIC 36), and Instruments & Related Products (SIC 38) industries dominate our sample, accounting for approximately 41.03% (20,150 out of 49,110) of the firm-year observations distributed in these sectors. Notably, military-hiring companies are mainly clustered in these industries. For example, among 6,288 firm-year observations in the Business Services industry, 3,173 observations hire military-experienced executives, accounting for the majority (50.46%) of this sector. About 36.09% (2,244 out of 6,218) of the sample companies in the Chemical & Allied Products hire senior managers having military backgrounds. In addition, nearly 42.55% (35.28%) of the sample companies in the Instruments & Related Products (Electronic & Other Electric Equipment) sector hire ex-military senior managers. Our univariate results are similar to those reported by Law and Mills (2017), who show that the industries with the highest number of ex-military managers are Paper & Allied Products and some other manufacturing sectors that likely depend more on government contracts. Hence, our empirical result may reflect industry effects. It is important to identify whether it is the military experience of senior executives that exerts a positive influence on earnings quality, or it is the industries themselves that those ex-military executives concentrate on that exert this positive effect. We address such a concern by excluding companies in SIC 73, SIC 28, SIC 36, and SIC 38 industries, which reduces the study sample to 28,960 firm-years. Column 6 of Table 7 conforms with our central hypothesis.

6.6 Sub-samples with different time frames

Panel B of Appendix 2 illustrates that the percentage of companies run by senior executives having military experience drops over time, from around 60.27% (631 out of 1,047) in 2001 to 32.13% (999 out of 3,109) in 2018 in our sample. This may be because the U.S. government drafted every U.S. male to the military during the Vietnam War, so that many executives could have had military experience at some point in their life. Those who were drafted for the Vietnamese War are now retired, so the percentage of companies having an ex-military executive drops to a lower point.[12] The U.S. government started to send combat forces into the battle in Vietnam in 1965 and ended recruitment in 1973. Men who turned 18 (born between 1947 and 1955) during this period are highly likely to have been drafted into the war. Although retirement plans differ across individuals, the research in labour economics shows that most workers retire between 60 and 65 years (Jenter & Lewellen 2015). Thus, we may expect most senior executives who gained military experience during the Vietnam War to have retired around 2007. As such, the average percentage of companies having ex-military senior managers (56.68%) between 2000 and 2006 is generally higher than the average level (38.51%) between 2007 and 2018.

To alleviate the concern that our result may be driven by senior managers who gained military experience during the Vietnam War, we split our sample into two periods, 2000–2006 and 2007–2018, and re-estimate Eq. (7) across these time frames. The regression results for 2000–2006 and 2007–2018 are displayed in columns 7 and 8 of Table 7, respectively. The estimate on *MILITARY_D* in both columns is negative and statistically significant at conventional levels, affirming that our key finding is not driven by executives who obtained military experience during the Vietnam War.

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[12] Similarly, Koch-Bayram and Wernicke (2018) document that ex-military CEOs in Standard & Poor's 500 listed entities have experienced a dramatic decline from 59% in the 1980s to 8.4% in 2006 because of the retirement of World War II and Korean War soldiers.

6.7 Weighted least squares

As shown in Table 1, our sample, an unbalanced panel data set, is unevenly distributed across industries and years, potentially driving estimation bias. To address the concern related to the unbalanced sample, we introduce the weighted least squares to maximise the efficiency of our parameter estimation. The result presented in column 9 of Table 7 shows that *MILITARY_D* still attracts a negative and significant coefficient (− 0.0069, t = − 9.1160), reaffirming our conjecture.

6.8 Granger causality analysis

The reverse causality may result in estimation biases because companies exhibiting better earnings quality may attract upper echelons with military experience and ethical leadership. To alleviate the reverse causality concern, we follow Dyck *et al.* (2019) to conduct the Granger causality analysis by regressing *MILITARY_D* on lagged *MILITARY_D* and lagged *ABS_DA*, with the set of control variables employed in our baseline model. Column 10 of Table 7 displays the result of a probit model of the effect of lagged earnings quality on the likelihood of the presence of a military-experienced executive in the subsequent year. In the model where the explained variable is *MILITARY_D*, the coefficient on *LAGGED_ABS_DA* is insignificant, showing that it is ex-military executives who help enhance a company's earnings quality rather than companies with more transparent financial reporting that attract ex-military executives.

6.9 IV estimator

To further address the reverse causality issue, we adopt the IV approach in this sub-section. Given that the demand for soldiers during wartimes exogenously increases the propensity of individuals serving in the military (Benmelech & Frydman 2015), we follow prior studies (Law & Mills 2017) and use variations in executives' birth cohorts to instrument ex-military executives. Because individuals who were born on or before 1927 were more

likely to participate in World War II, we use the percentage of top managers of each firm who were born in this cohort, *IV_EXE_RATIO_WW2*, as our first instrument for *MILITARY_D*. Similarly, we further look into the birth cohort of the Korean War and construct an additional instrument, *IV_EXE_RATIO_KOREANWAR*, which is measured as the percentage of top managers of each firm born on or before 1935 who were more likely to serve in the Korean War.[13]

Columns 1 and 3 of Table 8 present the first-stage regression results and show that both *NUM_EXE_WORLDWAR2* and *IV_EXE_RATIO_KOREANWAR* attract a positive and highly significant coefficient. Also, the First-stage Cragg and Donald tests presented at the bottom of Table 8 show a p-value of 0.000 for both instruments used in the first stage of the IV approach, validating the use of our instruments. The second-stage results presented in columns 2 and 4 show a negative and highly significant coefficient on the predicted value of the military dummy (*PREDICTED_MILITARY_D*), supporting the negative relationship between ex-military executives and earnings management issues.

[Insert Table 8 here]

6.10 PSM and entropy balancing approaches

In this sub-section, we first carry out a PSM analysis to address the potential concerns that companies with military-experienced executives are fundamentally different from companies without. We adopt a matching process with the replacement requirement and use the nearest PSM approach with a caliper of 0.0002 to match each company-year observation with ex-military managers with a company-year observation without such managers on the set of control variables employed in the baseline model. We re-estimate Eq. (7) based on the matched sample to examine the validity of our hypothesis and report a propensity score analysis for the treatment group and non-treatment group in Table 9. Panel A displays the

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[13] The Korean War was one of the major worldwide military conflicts with over 50 nations directly or indirectly involved, including the US.

average treatment effect on the treated (ATT), which is the average difference between the *ABS_DA* of companies with senior executives with military experience and their counterfactual *ABS_DA*. The value of the ATT is –0.0063, statistically significant, indicating that the treatment firms exhibit a lower degree of earnings management relative to the control group. The regression result based on the matched sample in Panel B shows that the coefficient on *MILITARY_D* in the *ABS_DA* regression (column 1) is negative and statistically significant (– 0.0044, t = –2.4273).[14]This implies that companies run by military-experienced senior executives experience lower levels of absolute discretionary accruals relative to companies led by non-military senior executives.

[Insert Table 9 here]

Next, we adopt an entropy balancing approach to address the estimation bias driven by the imbalance issue among matching criteria, this approach which can effectively incorporate covariate balance into the weight function. The results are reported in Table 10. Panels A and B present the mean values of all control variables used in the matching procedure for both the treatment group and the control group. These show that after matching, the sample is well-balanced. The multivariate result with entropy balancing weighted on the first (mean) moments in Panel C shows that the coefficient on *MILITARY_D* is negative (– 0.0034) and statistically significant, reaffirming the negative influence of managerial military experience on earnings management. Together, the above evidence suggests that our findings are unlikely to be driven by the sample selection issue.

[Insert Table 10 here]

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[14] We also adopt a matching process without the replacement requirement and our finding still holds. In addition, when using the proxies for real earnings management activities, our results indicate that companies led by military-experienced senior executives engage in earnings management less by manipulating real operating activities. These results are available upon request.

6.11 Dynamic system GMM

In this sub-section, we further address common endogeneity problems by conducting the dynamic system GMM approach. The dynamic nature of our variables, according to which the current values of the independent variables are a function of past values of the explained variable, may drive endogeneity issues in our empirical setting. Following Blundell and Bond (1998) and Wintoki *et al.* (2012), we include the one-year lagged explained variable (i.e., the lagged absolute value of discretionary accruals) as an independent variable in Eq. (7) to implement the dynamic GMM method (Arellano & Bover 1995; Blundell & Bond 1998). Next, first-differencing the dynamic regression can address problems related to unobserved heterogeneity and omitted factors. The system of equations is estimated via GMM using lagged values of the endogenous variables as instruments. The lagged levels are then used as instruments for the differenced equation, and lagged differences are used as instruments for the level equation in the Arellano–Bond system procedure.

Table 11 reveals that the estimate on *MILITARY_D* is negative and highly significant (– 0.0131, t= –12.8723). In line with the previous argument that military training instils its personnel with obedience and ethical behaviours, we find that senior executives having military experience better serve as the role of goalkeepers to improve earnings quality. Collectively, the tests presented in this section show that our results are robust to alternative measures and sensitivity tests and are unlikely to be driven by common endogeneity issues.

[Insert Table 11 here]

7. Conclusions and implications

Our research mainly investigates whether the life experiences of TMTs help shape the type of people they will become by focusing on whether senior managers with military backgrounds behave differently from their non-military peers. We then find that companies run by ex-military senior executives are less likely to manage earnings through accruals. Our

cross-sectional analysis demonstrates that the impact of military-experienced senior executives on constraining accrual-based earnings management is more salient for companies exhibiting inefficient external monitoring. We also find that companies run by military-experienced senior executives are positively valued by the market and that these executives could alleviate the negative market perceptions to earnings management issues. By looking into real activities management, we find that ex-military managers curtail real earnings management mainly by reducing abnormal production costs. In addition, companies headed by military-experienced CEOs or CFOs exhibit higher earnings quality; more importantly for our purposes, after excluding CEOs from the TMT, we find that senior executives, other than the CEO, play a more vital role in facilitating earnings quality. Besides, we confirm that ex-military senior executives who served longer in the army are less likely to engage in earnings management. Our findings remain robust after addressing selection bias and endogeneity concerns. Collectively, our research offers new insights to the research on the role of senior executives' attributes in earnings quality and firm value by employing the UET and imprinting theoretical perspective and demonstrates that the enhancement in earnings quality is attributed to the collective endeavour of whole TMT members. Our study also has some limitations. This study mainly focuses only on the role of ex-military executives in earnings management and the moderating effects of analyst coverage on the above relationship as well as the influence of ex-military executives on firm value. Future studies could examine the effects of managerial military experience on governance-related issues such as the level of analyst forecasting accuracy and information asymmetry.

In summary, we enrich the existing literature on military experience by providing empirical evidence on the effect of ex-military TMT members on earnings quality and firm valuation among U.S.-listed companies. This study highlights the importance of the intrinsic motivation behind the effect of military experience on senior managers' personalities and

offers essential stakeholder-related implications regarding the effect of military experience. The military experience of senior managers helps facilitate the attainment of broader corporate governance and economic objectives. For example, in financing or investment activities, companies may experience economic instability that provides opportunities for managers to commit errors in financial reporting. Military-experienced executives will generally act at the interest of stakeholders and enhance shareholder value. Hence, companies could consider appointing senior executives with military backgrounds, since they may incorporate norms of ethical values, obedience, integrity, and morality into their business strategies.

Data Availability Statement

The data that support the findings of this study are publicly available from the sources noted in the text.

Conflict of Interest Statement

There are no conflicts of interest to declare.

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Figure 1 Simple regression lines for high- and low-analyst-coverage groups
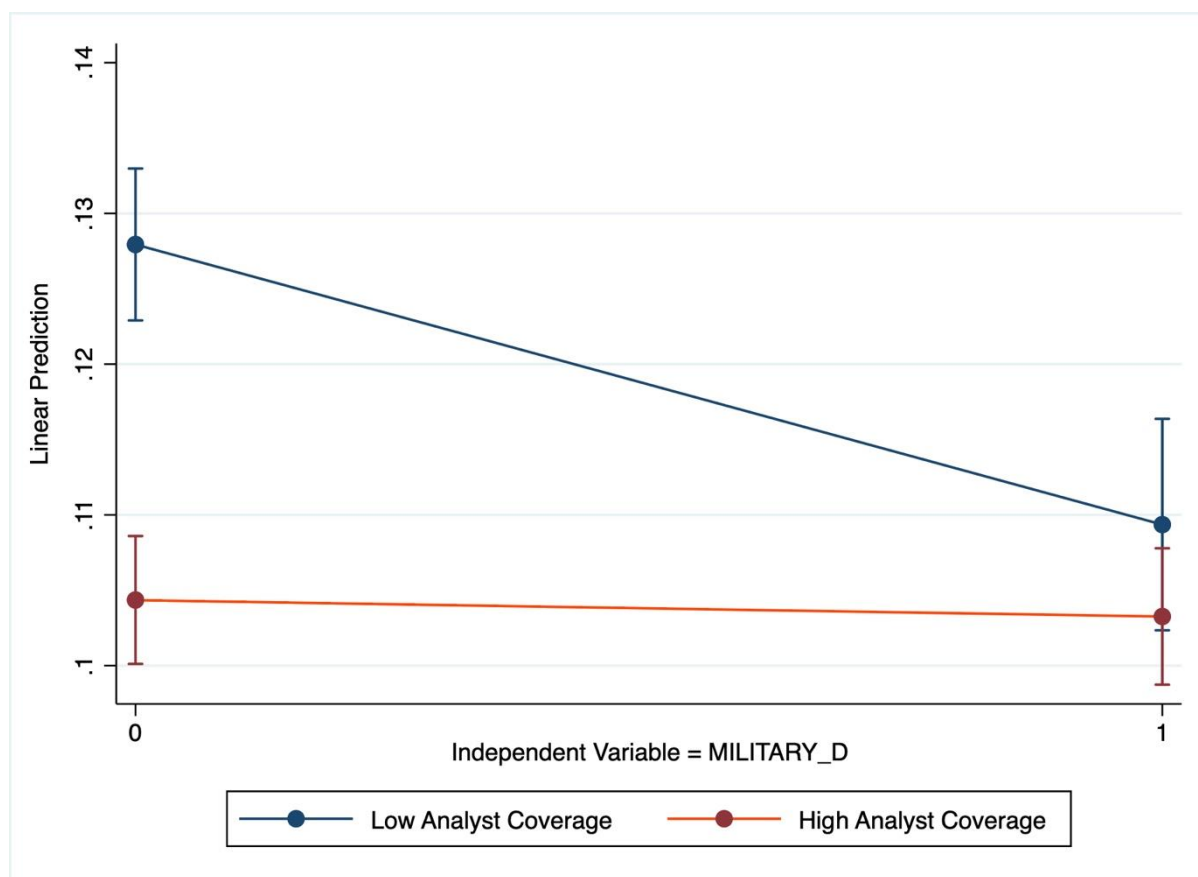
Notes: This figure displays simple regression lines for the high- and low-analyst-coverage groups, which demonstrates two different slopes for the two groups. The steeper down-sloping line (the dark blue line) demonstrates that, on average, in firms with lower analyst coverage, ex-military executives help mitigate more earnings management issues. The flatter down-sloping line (the red line) shows that in firms with already high analyst coverage, the influence of ex-military executives on constraining earnings management is less salient. This figure was generated by authors.

Figure 2 The plot for the effects of ex-military executive on accrual-based earnings management in the low-analyst-coverage and the high-analyst-coverage groups
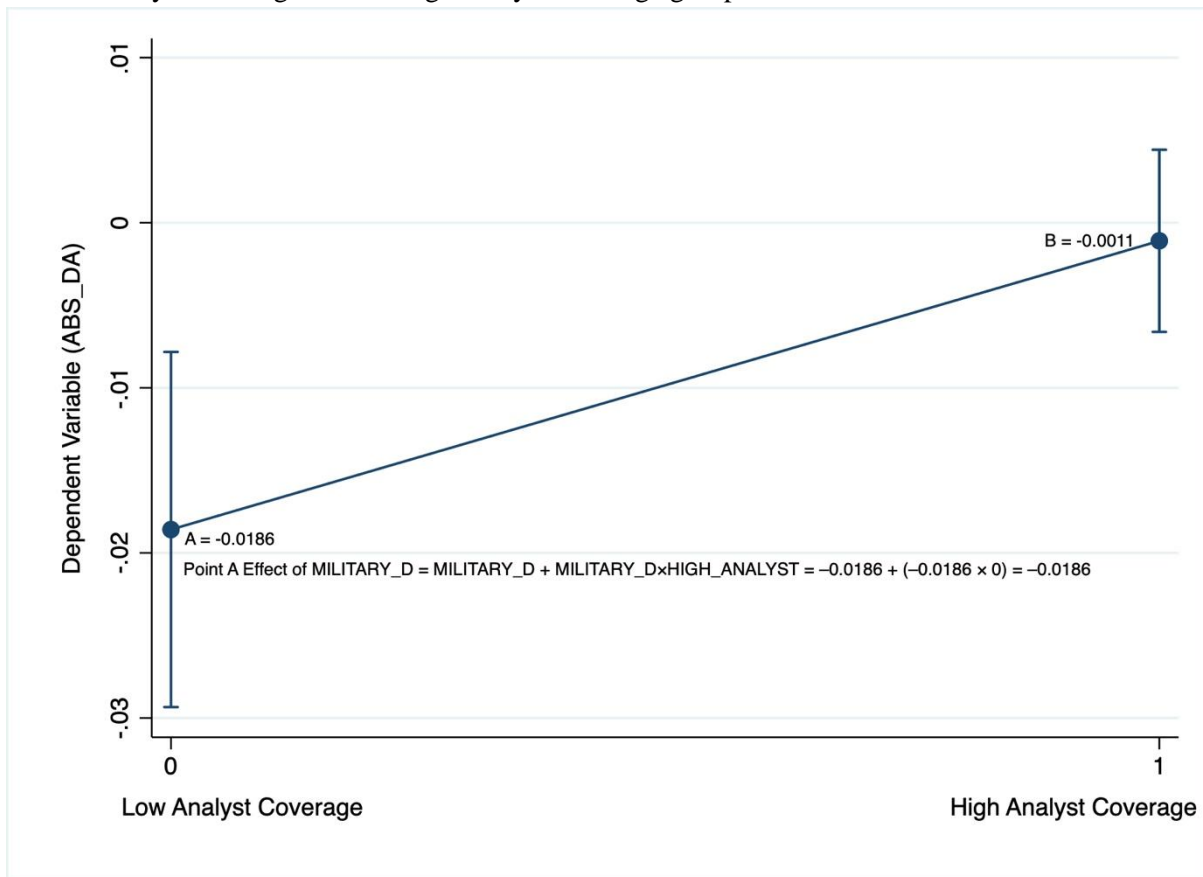
Notes: This figure depicts the effects ex-military executive (*MILITARY_D*) on accrual-based earnings management (*ABS_DA*) in the low-analyst-coverage and the high-analyst-coverage groups. Specifically, when firms have lower analyst coverage, the negative influence of *MILITARY_D* on *ABS_DA* is −0.0186, while when firms are followed by a bigger number of financial analysts, the influence of *MILITARY_D* on *ABS_DA* is only −0.0011. This figure was generated by authors.

Table 1 Sample distribution

Panel A Annual distribution

Year	Accrual-based earnings management sample		Real earnings management sample	
	Observations	Percent	Observations	Percent
2000	52	0.11	45	0.10
2001	1,047	2.13	896	2.09
2002	1,302	2.65	1,149	2.68
2003	1,358	2.77	1,215	2.83
2004	2,548	5.19	2,252	5.25
2005	3,072	6.26	2,716	6.33
2006	3,181	6.48	2,818	6.57
2007	3,167	6.45	2,761	6.44
2008	3,202	6.52	2,798	6.52
2009	3,015	6.14	2,637	6.15
2010	2,890	5.88	2,523	5.88
2011	2,922	5.95	2,553	5.95
2012	2,922	5.95	2,548	5.94
2013	2,940	5.99	2,579	6.01
2014	3,055	6.22	2,664	6.21
2015	3,095	6.30	2,693	6.28
2016	3,133	6.38	2,721	6.34
2017	3,100	6.31	2,680	6.25
2018	3,109	6.33	2,637	6.15
Total	49,110	100	42,885	100

Panel B Industry distribution

Accrual-based earnings management sample

Two-digit SIC code	Obs.	Percent	Two-digit SIC code	Obs.	Percent
10 Metal, Mining	1,882	3.83	42 Trucking & Warehousing	409	0.83
12 Coal Mining	193	0.39	44 Water Transportation	238	0.48
13 Oil & Gas Extraction	3,057	6.22	45 Transportation by Air	387	0.79
14 Non-metallic Minerals, Except Fuels	188	0.38	46 Pipelines, Except Natural Gas	173	0.35
15 General Building Contractors	273	0.56	47 Transportation Services	190	0.39
16 Heavy Construction, Except Building	257	0.52	48 Communications	1,629	3.32
17 Special Trade Contractors	115	0.23	50 Wholesale Trade Durable Goods	1,144	2.33
20 Food & Kindred Products	1,252	2.55	51 Wholesale Trade Nondurable Goods	702	1.43
21 Tobacco Products	60	0.12	52 Building Materials, Gardening Supplies	79	0.16
22 Textile Mill Products	115	0.23	53 General Merchandise Stores	328	0.67
23 Apparel & Other Textile Products	405	0.82	54 Food Stores	317	0.65
24 Lumber & Wood Products	342	0.70	55 Automative Dealers & Service Stations	352	0.72
25 Furniture & Fixtures	323	0.66	56 Apparel & Accessory Stores	615	1.25
26 Paper & Allied Products	488	0.99	57 Furniture & Home furnishings Stores	213	0.43
27 Printing & Publishing	505	1.03	58 Eating & Drinking Places	750	1.53
28 Chemical & Allied Products	6,218	12.66	59 Miscellaneous Retail	930	1.89
29 Petroleum & Coal Products	366	0.75	70 Hotels & Other Lodging Places	184	0.37
30 Rubber & Miscellaneous Plastics Products	427	0.87	72 Personal Services	186	0.38
31 Leather & Leather Products	189	0.38	73 Business Services	6,288	12.80
32 Stone, Clay, & Glass Products	252	0.51	75 Auto Repair, Services, & Parking	109	0.22
33 Primary Metal	536	1.09	78 Motion Pictures	232	0.47
34 Fabricated Metal Products	715	1.46	79 Amusement & Recreation Services	536	1.09
35 Industrial Machinery & Equipment	2,842	5.79	80 Health Services	1,048	2.13
36 Electronic & Other Electric Equipment	4,297	8.75	81 Legal Services	1	0.00
37 Transportation Equipment	1,305	2.66	82 Educational Services	256	0.52
38 Instruments & Related Products	3,347	6.82	83 Social Services	44	0.09
39 Miscellaneous Manufacturing Industries	379	0.77	87 Engineering & Management Services	970	1.98
40 Railroad Transportation	138	0.28	99 Non-Classifiable Establishments	310	0.63
41 Local & Interurban Passenger Transit	24	0.05			
Total				49,110	100

Real earnings management sample

Two-digit SIC code	Obs.	Percent	Two-digit SIC code	Obs.	Percent
10 Metal, Mining	2,080	4.85	42 Trucking & Warehousing	120	0.28
12 Coal Mining	158	0.37	44 Water Transportation	211	0.49
13 Oil & Gas Extraction	2,904	6.77	45 Transportation by Air	282	0.66
14 Non-metallic Minerals, Except Fuels	200	0.47	46 Pipelines, Except Natural Gas	161	0.38
15 General Building Contractors	340	0.79	47 Transportation Services	167	0.39
16 Heavy Construction, Except Building	254	0.59	48 Communications	1,351	3.15
17 Special Trade Contractors	107	0.25	50 Wholesale Trade Durable Goods	942	2.20
20 Food & Kindred Products	1,086	2.53	51 Wholesale Trade Nondurable Goods	583	1.36
21 Tobacco Products	51	0.12	52 Building Materials, Gardening Supplies	59	0.14
22 Textile Mill Products	5	0.01	53 General Merchandise Stores	311	0.73
23 Apparel & Other Textile Products	385	0.90	54 Food Stores	252	0.59
24 Lumber & Wood Products	338	0.79	55 Automative Dealers & Service Stations	346	0.81

25 Furniture & Fixtures	191	0.45	56 Apparel & Accessory Stores	619	1.44
26 Paper & Allied Products	462	1.08	57 Furniture & Home furnishings Stores	152	0.35
27 Printing & Publishing	325	0.76	58 Eating & Drinking Places	704	1.64
28 Chemical & Allied Products	4,282	9.98	59 Miscellaneous Retail	908	2.12
29 Petroleum & Coal Products	318	0.74	70 Hotels & Other Lodging Places	123	0.29
30 Rubber & Miscellaneous Plastics Products	321	0.75	72 Personal Services	155	0.36
31 Leather & Leather Products	187	0.44	73 Business Services	5,775	13.47
32 Stone, Clay, & Glass Products	185	0.43	75 Auto Repair, Services, & Parking	68	0.16
33 Primary Metal	490	1.14	78 Motion Pictures	151	0.35
34 Fabricated Metal Products	618	1.44	79 Amusement & Recreation Services	390	0.91
35 Industrial Machinery & Equipment	2,705	6.31	80 Health Services	835	1.95
36 Electronic & Other Electric Equipment	4,133	9.64	81 Legal Services	1	0.00
37 Transportation Equipment	1,154	2.69	82 Educational Services	237	0.55
38 Instruments & Related Products	3,184	7.42	83 Social Services	40	0.09
39 Miscellaneous Manufacturing Industries	326	0.76	87 Engineering & Management Services	859	2.00
40 Railroad Transportation	27	0.06	99 Non-Classifiable Establishments	254	0.59
41 Local & Interurban Passenger Transit	13	0.03			
Total				42,885	100

Notes: Panel A presents the respective year distributions. Panel B reports the industry distributions. This table was generated by authors.

Table 2 Descriptive statistics

Variables	No. of Obs.	Mean	STD.	P1	P25	P50	P75	P99
ABS_DA	49,110	0.114	0.234	0.001	0.028	0.063	0.128	0.800
POSITIVE_DA	22,871	0.122	0.234	0.001	0.027	0.065	0.139	0.892
NEGATIVE_DA	26,239	0.107	0.233	0.001	0.028	0.062	0.120	0.715
REM_1	42,885	-0.152	0.728	-3.365	-0.264	-0.051	0.088	1.480
REM_2	44,726	-0.124	1.414	-2.474	-0.179	-0.033	0.057	1.158
REM_CFO	48,948	-0.028	0.804	-1.256	-0.059	0.006	0.078	0.718
REM_PROD	46,952	-0.006	0.583	-0.861	-0.104	-0.009	0.060	1.118
REM_DISX	45,415	0.196	4.464	-1.966	-0.064	0.011	0.135	3.863
MILITARY_D	49,110	0.408	0.491	0.000	0.000	0.000	1.000	1.000
MILITARY_RATIO	49,110	0.032	0.059	0.000	0.000	0.000	0.048	0.267
MILITARY_RATIO_EXCEO	49,031	0.029	0.057	0.000	0.000	0.000	0.043	0.250
MILITARY_CEO	49,110	0.067	0.250	0.000	0.000	0.000	0.000	1.000
MILITARY_CFO	49,110	0.022	0.147	0.000	0.000	0.000	0.000	1.000
LENGTH	44,596	7.818	10.920	0.000	0.000	0.000	15.000	45.000
SIZE	49,110	6.245	2.073	1.743	4.796	6.256	7.638	11.027
LEV	49,110	0.597	2.243	-8.675	0.000	0.248	0.740	12.668
ROA	49,110	-0.080	0.559	-1.686	-0.060	0.029	0.074	0.295
Q	49,110	2.359	3.615	0.584	1.191	1.623	2.503	11.836
CASH	49,110	0.015	0.310	-1.167	0.007	0.075	0.129	0.338
RD	49,110	0.065	0.147	0.000	0.000	0.002	0.068	0.782
DUALITY	49,110	0.863	0.343	0.000	1.000	1.000	1.000	1.000
INDEP	49,110	0.574	0.158	0.111	0.500	0.583	0.700	0.857
FEMALE	49,110	0.086	0.099	0.000	0.000	0.077	0.143	0.385
BIG4	49,110	0.756	0.430	0.000	1.000	1.000	1.000	1.000
FEMALE_CEO	45,552	0.004	0.063	0.000	0.000	0.000	0.000	0.000
FEMALE_CFO	45,552	0.095	0.293	0.000	0.000	0.000	0.000	1.000
TMT_FEMALE	45,552	0.151	0.124	0.000	0.053	0.138	0.227	0.500
TMT_FINANCIAL	45,552	0.118	0.100	0.000	0.050	0.100	0.167	0.455
TMT_AGE	45,552	3.912	0.103	3.659	3.847	3.914	3.978	4.159
TMT_IVY	45,552	0.067	0.083	0.000	0.000	0.043	0.106	0.350
HIGH_ANALYST	49,110	0.456	0.498	0.000	0.000	0.000	1.000	1.000
ANALYST	35,868	1.669	0.945	0.000	0.981	1.735	2.405	3.423
LITIGATION	35,868	0.378	0.485	0.000	0.000	0.000	1.000	1.000

Note: This table was generated by authors.

Table 3 Effects of military-experienced senior executives on accrual-based earnings management

Dep. Var. =	ABS_DA	ABS_DA	POSITIVE_DA	POSITIVE_DA	NEGATIVE_DA	NEGATIVE_DA
	Absolute value of discretionary accruals		Positive value of discretionary accruals		Negative value of discretionary accruals	
	Firm fixed effects		Firm fixed effects		Firm fixed effects	
	(1)	(2)	(3)	(4)	(5)	(6)
MILITARY_D	-0.0093***		-0.0108**		0.0059	
	(-2.6118)		(-2.5686)		(1.2969)	
MILITARY_RATIO		-0.1045**		-0.0165		0.1676***
		(-2.3075)		(-0.4979)		(3.6788)
SIZE	0.0017	0.0013	0.0001	-0.0004	-0.0070**	-0.0067**
	(0.3622)	(0.2662)	(0.0289)	(-0.0749)	(-2.3066)	(-2.2149)
LEV	-0.0009**	-0.0009**	-0.0007	-0.0007	0.0008	0.0008
	(-2.3564)	(-2.3753)	(-1.2956)	(-1.3101)	(1.2035)	(1.1938)
ROA	-0.1003***	-0.1002***	-0.1713***	-0.1711***	-0.0251***	-0.0251***
	(-4.6779)	(-4.6737)	(-7.0021)	(-6.9930)	(-4.3402)	(-4.3488)
Q	0.0098***	0.0098***	0.0088**	0.0088**	-0.0073***	-0.0073***
	(3.1686)	(3.1728)	(2.1401)	(2.1485)	(-10.5533)	(-10.5351)
CASH	-0.1433***	-0.1432***	-0.0925**	-0.0926**	0.2619***	0.2616***
	(-3.6618)	(-3.6585)	(-2.4835)	(-2.4839)	(21.4431)	(21.4311)
RD	0.1231**	0.1228**	0.0424	0.0421	-0.4056***	-0.4050***
	(2.4252)	(2.4194)	(0.7201)	(0.7151)	(-13.8048)	(-13.7878)
DUALITY	0.0019	0.0018	-0.0053	-0.0052	-0.0003	-0.0002
	(0.4024)	(0.3863)	(-0.9239)	(-0.9081)	(-0.0666)	(-0.0409)
INDEP	-0.0401***	-0.0398***	-0.0174	-0.0168	0.0324**	0.0321**
	(-3.5778)	(-3.5562)	(-1.1762)	(-1.1389)	(2.2223)	(2.2018)
FEMALE	-0.0279	-0.0278	-0.0111	-0.0106	0.0330	0.0335
	(-1.4914)	(-1.4850)	(-0.5165)	(-0.4956)	(1.3746)	(1.3987)
BIG4	-0.0010	-0.0011	0.0021	0.0021	0.0099	0.0100
	(-0.1935)	(-0.2184)	(0.3565)	(0.3454)	(1.4624)	(1.4774)
_cons	0.0909***	0.0933***	0.1076***	0.1063***	-0.0422	-0.0477
	(2.8165)	(2.9098)	(3.4959)	(3.4322)	(-0.9372)	(-1.0602)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	49,110	49,110	22,871	22,871	26,239	26,239
R-square (within)	0.160	0.160	0.342	0.342	0.073	0.073

Notes: This table presents the results of the impact of managerial military experience on earnings quality using a firm fixed-effect model. In columns (1) and (2), the dependent variable is the absolute value of discretionary accruals (*ABS_DA*). Higher values of *ABS_DA* stand for worse reporting quality. In columns (3) and (4), the dependent variable is the positive value of discretionary accruals (*POSITIVE_DA*). Higher values of *POSITIVE_DA* indicate greater engagement in income-increasing earnings management through accruals. In columns (5) and (6), the dependent variable is the negative value of discretionary accruals (*NEGATIVE_DA*). Higher levels of *NEGATIVE_DA* suggest less income-decreasing earnings management. *MILITARY_D* takes a value of one if a firm-year observation has at least one ex-military senior executive, and zero otherwise. *MILITARY_RATIO* is measured as the percentage of the ex-military executives on the TMT (i.e., the number of senior executives having military experience scaled by the number of TMT members). All independent variables are lagged by one year except for *SIZE*. Standard errors are clustered at the firm level and are corrected for heteroscedasticity. T-statistics are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively. This table was generated by authors.

Table 4 The role of analyst coverage in the link between military experience and earnings management

Panel A Regression results regarding the moderation effect of the scrutiny of financial analysts

Dep. Var. =	ABS_DA	ABS_DA	POSITIVE_DA	POSITIVE_DA	NEGATIVE_DA	NEGATIVE_DA
	Absolute value of discretionary accruals		Positive value of discretionary accruals		Negative value of discretionary accruals	
	Firm fixed effects		Firm fixed effects		Firm fixed effects	
	(1)	(2)	(3)	(4)	(5)	(6)
MILITARY_D	-0.0186***		-0.0158***		0.0168*	
	(-3.3862)		(-2.6498)		(1.9355)	
MILITARY_D×HIGH_ANALYST	0.0175***		0.0108*		-0.0185**	
	(3.7173)		(1.8571)		(-2.5179)	
MILITARY_RATIO		-0.1437***		-0.0299		0.2503**
		(-2.6445)		(-0.7727)		(2.0354)
MILITARY_RATIO×HIGH_ANALYST		0.1412***		0.0602		-0.2435***
		(3.3174)		(1.2823)		(-2.8036)
HIGH_ANALYST	-0.0236***	-0.0208***	-0.0219***	-0.0196***	0.0192***	0.0189***
	(-6.0054)	(-5.8550)	(-4.8284)	(-4.8210)	(3.0191)	(3.1822)
SIZE	0.0039	0.0034	0.0024	0.0019	-0.0085	-0.0083
	(0.7944)	(0.6942)	(0.4767)	(0.3658)	(-0.9598)	(-0.9398)
LEV	-0.0009**	-0.0009**	-0.0006	-0.0006	0.0009	0.0008
	(-2.3566)	(-2.3558)	(-1.2528)	(-1.2455)	(1.6175)	(1.5967)
ROA	-0.1001***	-0.1000***	-0.1711***	-0.1709***	-0.0252	-0.0252
	(-4.6720)	(-4.6683)	(-6.9953)	(-6.9864)	(-0.6517)	(-0.6513)
Q	0.0099***	0.0099***	0.0089**	0.0089**	-0.0075	-0.0074
	(3.2077)	(3.2077)	(2.1682)	(2.1756)	(-1.5622)	(-1.5546)
CASH	-0.1428***	-0.1427***	-0.0922**	-0.0923**	0.2612***	0.2609***
	(-3.6525)	(-3.6499)	(-2.4785)	(-2.4808)	(3.2095)	(3.2072)
RD	0.1243**	0.1237**	0.0434	0.0430	-0.4065***	-0.4059***
	(2.4489)	(2.4381)	(0.7375)	(0.7315)	(-3.4434)	(-3.4393)
DUALITY	0.0020	0.0019	-0.0051	-0.0050	-0.0005	-0.0003
	(0.4353)	(0.4142)	(-0.8958)	(-0.8764)	(-0.0686)	(-0.0453)
INDEP	-0.0401***	-0.0399***	-0.0175	-0.0170	0.0324*	0.0325*
	(-3.5802)	(-3.5716)	(-1.1821)	(-1.1518)	(1.8227)	(1.8305)
FEMALE	-0.0269	-0.0268	-0.0093	-0.0085	0.0320	0.0325
	(-1.4381)	(-1.4342)	(-0.4320)	(-0.3984)	(1.0764)	(1.0991)
BIG4	-0.0006	-0.0008	0.0024	0.0023	0.0096	0.0095
	(-0.1228)	(-0.1575)	(0.4006)	(0.3849)	(1.1115)	(1.1025)
_cons	0.0872***	0.0875***	0.1019***	0.0997***	-0.0412	-0.0431
	(2.6678)	(2.6857)	(3.2844)	(3.1991)	(-0.6634)	(-0.6971)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

	(1)	(2)	(3)	(4)	(5)	(6)
Observations	49,110	49,110	22,871	22,871	26,239	26,239
R-square (within)	0.161	0.161	0.343	0.342	0.074	0.074

Panel B Procedures of testing simple slopes for significance

Dep. Var. =	ABS_DA	Delta-method Standard Errors	Z-statistics	p-value
MILITARY_D (when HIGH_ANALYST = 0)	-0.0186	0.0055	-3.3862	0.001
MILITARY_D (when HIGH_ANALYST = 1)	-0.0011	0.0028	-0.3889	0.697

Notes: Panel A of this table reports the regression results regarding the role of the scrutiny of financial analysts in the association between TMT's military experience and earnings quality. In columns (1) and (2), we regress the absolute value of discretionary accruals (*ABS_DA*) on the proxies for the military backgrounds of TMT members, the interaction term between TMT military experience proxy and a high analyst coverage proxy (*HIGH_ANALYST*), and the control variables used in Eq. (7). *HIGH_ANALYST* is assigned a value of one if the number of financial analysts following a firm is equal to or greater than the median of the number of analysts during the year; otherwise, it is set to zero. In columns (3) and (4), we regress the positive value of discretionary accruals (*POSITIVE_DA*) on the proxies for the military backgrounds of TMT members, the interaction term between TMT military experience proxy and *HIGH_ANALYST*, and the same set of control variables. In columns (5) and (6), we regress the negative value of discretionary accruals (*NEGATIVE_DA*) on the proxies for the military backgrounds of TMT members, the interaction term between TMT military experience proxy and *HIGH_ANALYST*, and the same set of control variables. Panel B reports the results of testing simple slopes for Model 1 of Panel A. All variables are defined in Appendix 1. Standard errors are clustered at the firm level and are corrected for heteroscedasticity. T-statistics are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively. This table was generated by authors.

Table 5 Firm value implication linked to ex-military executives and earnings management

Dep. Var. =	Tobin's Q
	(1)
MILITARY_D	0.0516**
	(2.4677)
MILITARY_D×ABS_DA	0.2530**
	(2.2715)
ABS_DA	-0.3063***
	(-4.7877)
SIZE	-0.1731***
	(-23.3953)
LEV	-0.0085**
	(-2.3640)
Q	0.5817***
	(140.8341)
DUALITY	-0.0378
	(-1.5144)
INDEP	-0.2539***
	(-4.2223)
BIG4	0.1195***
	(5.0235)
ANALYST	0.2226***
	(16.8344)
LITIGATION	0.1028***
	(3.3097)
_cons	2.6655***
	(10.6855)
Year fixed effects	Yes
Industry fixed effects	Yes
Observations	35,868
Adj. R-square	0.455

Notes: This table displays the fixed effect result of the moderation role of ex-military senior executives in the association between earnings management issues and market reaction (proxied by Tobin's *Q*). *MILITARY_D*, *MILITARY_D×ABS_DA*, and *ABS_DA* are key independent variables, all in year *t*. All control variables are lagged by one year except for *SIZE* and *LITIGATION*. Detailed variable definitions can be found in Appendix 1. T-statistics are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively. This table was generated by authors.

Table 6 The influence of managerial military experience on real earnings management activities

Dep. Var. =	REM_1	REM_2	REM_CFO	REM_PROD	REM_DISX
	Aggregate real earnings management activities		Abnormal cash flows from operations	Abnormal production costs	Abnormal discretionary expenses
	(1)	(2)	(3)	(4)	(5)
MILITARY_D	-0.0163**	-0.0337**	0.0015	-0.0246***	0.0144
	(-2.2680)	(-2.0714)	(0.2950)	(-4.6427)	(0.2968)
SIZE	0.0165***	0.0138**	-0.0010	0.0053**	0.0118
	(5.8828)	(2.1820)	(-0.2558)	(2.0752)	(0.6859)
LEV	0.0009	-0.0004	0.0006	0.0004	-0.0094**
	(0.6330)	(-0.2101)	(0.6214)	(0.3298)	(-2.2059)
ROA	-0.0349	-0.0885	0.1923	-0.1520	-0.4905
	(-1.1619)	(-0.8723)	(1.6444)	(-1.4546)	(-1.0348)
Q	-0.0187***	0.0155	-0.0192	-0.0247*	-0.0013
	(-4.3961)	(0.8050)	(-0.9747)	(-1.8764)	(-0.0394)
CASH	0.0467	-0.4024**	0.5811***	-0.1688	0.0476
	(0.7779)	(-2.3879)	(4.0831)	(-1.0725)	(0.0494)
RD	-1.9401***	-1.8297***	0.2698	0.1702	1.1908
	(-20.6003)	(-4.6428)	(0.9238)	(1.1187)	(1.2107)
DUALITY	0.0387***	0.0664***	-0.0111	0.0098	-0.0251
	(3.7130)	(3.0345)	(-1.1011)	(1.0488)	(-0.4978)
INDEP	-0.0202	-0.0414	-0.0262	-0.0321	0.3025**
	(-0.9148)	(-1.0812)	(-1.0083)	(-1.6080)	(2.0224)
FEMALE	-0.0071	0.2200**	-0.0032	-0.0270	-0.2781
	(-0.1809)	(2.2129)	(-0.1489)	(-0.9656)	(-1.4612)
BIG4	-0.0307***	0.0009	-0.0089	-0.0094	-0.0981*
	(-3.1453)	(0.0564)	(-1.2379)	(-1.1009)	(-1.7158)
_cons	-0.1720*	-0.3333*	0.1648	-0.0467	0.1009
	(-1.6942)	(-1.8015)	(1.1248)	(-0.7705)	(0.4009)
Year fixed effects	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes
Observations	42,885	44,726	48,948	46,952	45,415
Adj. R-square	0.176	0.035	0.136	0.047	0.022

Notes: This table reports the results of the impact of managerial military experience on real earnings management activities for the period from 2000 to 2018. In column (1), the dependent variable is a proxy for the aggregate real earnings management activities (*REM_1*), measured as *REM_PROD* minus *REM_DISX*. In column (2), the dependent variable is *REM_2*, measured as −*REM_CFO* minus *REM_DISX*. Higher values of *REM_1* and *REM_2* indicate worse earnings quality. The dependent variable is *REM_CFO*, the abnormal levels of cash flow from operations, in column (3), *REM_PROD*, the abnormal production costs, in column (4), and *REM_DISX*, the abnormal discretionary expenses, in column (5). All independent variables are one-year lagged. See Appendix 1 for detailed variable definitions. Standard errors are corrected for heteroscedasticity and clustered at the firm and year level. T-statistics are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively. This table was generated by authors.

Table 7 Variations in the measurement of military experience, TMT heterogeneity, sample selection issues, and Granger Causality test

Dep. Var. =	ABS_DA	ABS_DA	ABS_DA	ABS_DA	ABS_DA	ABS_DA	ABS_DA	ABS_DA	ABS_DA	MILITARY_D
	Ex-military CEOs	Ex-military CFOs	Excluding CEOs from the TMT	Length of the service	TMT heterogeneity	Excluding SIC 28/36/38/73	2000-2006	2007-2018	Uneven sample	Reverse causality
	Firm fixed effects	Firm fixed effects	Firm fixed effects	Firm fixed effects	Firm fixed effects	Firm fixed effects	Firm fixed effects	Firm fixed effects	WLS	Probit model
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
MILITARY_CEO	-0.0097*									
	(-1.7414)									
MILITARY_CFO		-0.0120*								
		(-1.8068)								
MILITARY_RATIO_EXCEO			-0.0869**							
			(-2.3271)							
LENGTH				-0.0003*						
				(-1.7572)						
MILITARY_D					-0.0094**		-0.0116*	-0.0086**	-0.0069***	3.0881***
					(-2.5588)		(-1.9192)	(-2.0368)	(-9.1160)	(143.8935)
MILITARY_RATIO						-0.0690***				
						(-2.6196)				
FEMALE_CEO					-0.0196					
					(-1.5381)					
FEMALE_CFO					-0.0010					
					(-0.2572)					
TMT_FEMALE					-0.0207					
					(-1.0087)					
TMT_FINANCIAL					0.0471					
					(1.4412)					
TMT_AGE					-0.0128					
					(-0.4196)					
TMT_IVY					0.0800*					
					(1.7467)					
LAGGED_ABS_DA										-0.0060
										(-0.1855)
SIZE	-0.0289***	0.0013	-0.0288***	-0.0027	0.0009	-0.0119***	0.0358***	0.0028	-0.0068***	0.1060***
	(-14.5615)	(0.2797)	(-6.9393)	(-0.5447)	(0.1869)	(-6.0345)	(7.5959)	(1.0340)	(-22.7395)	(16.2925)
LEV	-0.0006	-0.0009**	-0.0006	-0.0009**	-0.0009**	-0.0005	-0.0001	-0.0010*	-0.0006***	-0.0015
	(-1.2998)	(-2.3586)	(-1.5202)	(-2.3238)	(-2.3918)	(-1.3499)	(-0.1135)	(-1.7891)	(-5.2768)	(-0.3716)
ROA	-0.0976***	-0.1001***	-0.1004***	-0.0987***	-0.1128***	-0.0715***	-0.1705***	-0.0852***	0.1439***	-0.0413
	(-34.2137)	(-4.6713)	(-4.6718)	(-4.1863)	(-5.1780)	(-24.5196)	(-26.4374)	(-25.4158)	(33.5651)	(-1.3120)
Q	0.0091***	0.0098***	0.0105***	0.0070***	0.0086**	0.0077***	0.0134***	0.0103***	-0.0006	0.0117***
	(22.0038)	(3.1819)	(3.5293)	(2.3818)	(2.5328)	(16.2301)	(17.6592)	(19.6948)	(-1.3711)	(3.0815)
CASH	-0.1370***	-0.1433***	-0.1415***	-0.1351***	-0.1353***	-0.1163***	-0.0942***	-0.1537***	-0.0580***	0.0835
	(-21.2868)	(-3.6614)	(-3.6071)	(-3.1547)	(-3.3462)	(-14.4207)	(-6.6408)	(-20.1458)	(-10.6892)	(1.4021)
RD	0.0867***	0.1229**	0.0680	0.1214**	0.0994*	0.0618*	0.0553*	0.1245***	0.2555***	0.2608***
	(5.9202)	(2.4206)	(1.3897)	(2.2822)	(1.6795)	(1.6566)	(1.8014)	(6.9910)	(28.1819)	(2.6150)
DUALITY	0.0024	0.0019	0.0021	0.0021	0.0035	0.0009	-0.0033	0.0067	0.0039***	0.0382
	(0.6696)	(0.4075)	(0.4651)	(0.4353)	(0.7477)	(0.2650)	(-0.4703)	(1.4892)	(2.8070)	(1.2827)
INDEP	-0.0409***	-0.0396***	-0.0418***	-0.0182*	-0.0322***	-0.0287***	-0.0412**	-0.0301**	0.0211***	0.2291***
	(-4.2360)	(-3.5431)	(-3.7629)	(-1.7757)	(-2.6862)	(-3.0693)	(-2.2934)	(-2.3286)	(10.1149)	(3.5411)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
FEMALE	-0.0214	-0.0275	-0.0207	-0.0275	-0.0435**	-0.0309**	0.0205	-0.0427**	0.0723***	0.0777
	(-1.3259)	(-1.4714)	(-1.1176)	(-1.3783)	(-2.2977)	(-1.9631)	(0.5972)	(-2.0575)	(18.0912)	(0.7300)
BIG4	0.0057	-0.0011	0.0050	0.0006	0.0020	0.0046	-0.0036	-0.0002	-0.0215***	-0.1015***
	(1.3146)	(-0.2111)	(0.9857)	(0.1162)	(0.3519)	(1.0416)	(-0.6047)	(-0.0263)	(-13.0710)	(-3.8087)
_cons	0.2536***	0.0897***	0.2511***	0.1138***	0.1334	0.1658***	-0.1227***	0.0823***	0.1949***	-2.2635***
	(8.8250)	(2.7759)	(7.6985)	(3.5161)	(1.0758)	(5.3645)	(-3.4643)	(4.3293)	(13.0842)	(-13.1205)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	No	No	No	No	No	No	No	No	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Observations	49,110	49,110	49,031	44,596	45,552	28,960	12,560	36,550	49,110	48,856
R-square	0.164	0.159	0.167	0.126	0.151	0.117	0.229	0.146	0.983	0.701

Notes: This table reports the results of using alternative measures of military backgrounds, additionally controlling for TMT heterogeneity, a sub-sample excluding certain industries, sub-samples with different time frames, employing the weighted least squares, and a Granger Causality test. In columns (1)-(2), the key independent variable is *MILITARY_CEO* (*MILITARY_CFO*), which is an indicator variable set to one if the CEO (the CFO) of a firm has a military background in a given fiscal year, and zero otherwise. In column (3), *MILITARY_RATIO_EXCEO* is measured as the number of TMT members with military experience over the total number of TMT members, excluding CEOs from the TMT. In column (4), the key independent variable is *LENGTH*, defined as the average number of years that senior executives served in the military. Column (5) controls for CEO and CFO gender and the TMT heterogeneity. In column (6), companies in SIC 73, SIC 28, SIC 36, and SIC 38 industries are excluded from the regression analysis. Columns (7) and (8) present the baseline regression results during the periods from 2000 to 2006, and from 2007 to 2018, respectively. Column (9) presents the result of the managerial military experience on accrual-based earnings management using the weighted least squares (WLS). Column (10) reports the result of the Granger causality analysis. See Appendix 1 for the detailed variable definitions. Columns (1)-(8) include firm and year fixed effects. In the WLS regression, year fixed effects and two-digit SIC industry dummies are included. The probit model includes year and industry dummies. T-statistics are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively. This table was generated by authors.

Table 8 IV approach

Dep. Var. =	MILITARY_D	ABS_DA	MILITARY_D	ABS_DA
	1st stage	2nd stage	1st stage	2nd stage
	(1)	(2)	(3)	(4)
IV_EXE_RATIO_WW2	1.1103***			
	(8.5373)			
IV_EXE_RATIO_KOREANWAR			0.4088***	
			(9.8715)	
PREDICTED_MILITARY_D		-0.1128**		-0.1560***
		(-2.1343)		(-3.3329)
SIZE	0.0902***	-0.0027	0.0907***	0.0015
	(68.8042)	(-0.5697)	(68.6397)	(0.3469)
LEV	-0.0006	-0.0005	-0.0006	-0.0005
	(-0.6424)	(-1.1587)	(-0.6449)	(-1.2222)
ROA	-0.0203***	-0.0624***	-0.0217***	-0.0650***
	(-3.5754)	(-22.4696)	(-3.7952)	(-23.0575)
Q	0.0013**	0.0074***	0.0013**	0.0077***
	(1.9689)	(24.7607)	(2.0759)	(25.1507)
CASH	-0.0359***	-0.0470***	-0.0355***	-0.0488***
	(-3.1172)	(-8.4925)	(-3.0703)	(-8.7032)
RD	0.0952***	0.0353***	0.0929***	0.0362***
	(4.8653)	(3.5202)	(4.7241)	(3.6238)
DUALITY	0.0140**	-0.0074***	0.0140**	-0.0069**
	(2.5012)	(-2.8163)	(2.4835)	(-2.5720)
INDEP	0.1371***	-0.0179*	0.1424***	-0.0115
	(10.3568)	(-1.9161)	(10.6664)	(-1.2980)
FEMALE	0.0990***	-0.0146	0.0919***	-0.0159
	(4.6473)	(-1.3304)	(4.2933)	(-1.4590)
BIG4	-0.0488***	-0.0199***	-0.0467***	-0.0220***
	(-9.1842)	(-5.6427)	(-8.7304)	(-6.5314)
_cons	-0.5331***	0.1729***	-0.5463***	0.1449***
	(-32.1603)	(5.9691)	(-32.5022)	(5.5425)
Year fixed effects	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
Adj. R-square	0.167	0.111	0.166	0.060
Cragg and Donald estimation	p = 0.000		p = 0.000	
Minimum eigenvalue statistic	72.8853		97.4463	

Notes: This table displays the results of the IV estimator. First-stage regressions are reported in columns 1 and 3, while second-stage regression results are presented in columns 2 and 4. The first instrument employed in this study, *IV_EXE_RATIO_WW2*, is measured as the number of top managers of each firm who were born on or before 1927 divided by the total number of managers in the TMT. The second instrument, *IV_EXE_RATIO_KOREANWAR*, is computed as the number of top managers born on or before 1935 divided by the total number of managers in the TMT. All regression models control for year and industry fixed effects. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. This table was generated by authors.

Table 9 PSM analysis

Panel A The average treatment effect on the treated

Dep. Var. = ABS_DA	ATT (T-statistic)	Treated	Control	Observations
MILITARY_D	-0.0063* (-1.84)	0.0985	0.1048	46,842

Panel B Regression analysis based on the matched sample

Dep. Var. =	ABS_DA
	Absolute value of discretionary accruals
	(1)
MILITARY_D	-0.0044**
	(-2.4273)
SIZE	-0.0084***
	(-13.3298)
LEV	-0.0010***
	(-2.6211)
ROA	-0.1512***
	(-49.2153)
Q	0.0040***
	(12.7251)
CASH	-0.0485***
	(-8.7483)
RD	0.0774***
	(8.9979)
DUALITY	-0.0023
	(-0.9233)
INDEP	-0.0322***
	(-5.5113)
FEMALE	-0.0003
	(-0.0287)
BIG4	-0.0008
	(-0.3292)
_cons	0.1395***
	(3.7950)
Year fixed effects	Yes
Industry fixed effects	Yes
Observations	46,842
Adj. R-square	0.273

Notes: This table reports the results of a PSM routine. Panel A displays the average treatment effect on the treated (ATT), where the ATT is the average difference between *ABS_DA* of companies with senior executives with military experience and their counterfactual *ABS_DA*. Panel B shows the regression result by re-estimating the baseline model based on the matched sample. The outcome variable is *ABS_DA*, the absolute value of discretionary accruals. Higher values of *ABS_DA* are corresponding to worse reporting quality. All independent variables are one-year lagged. Detailed variable definitions can be found in Appendix 1. T-statistics are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% level, respectively. This table was generated by authors.

Table 10 Entropy balancing method

Panel A Before entropy balancing (without weighting)

	MILITARY_D = 1			MILITARY_D = 0		
Variables used in the matching	Mean	Variance	Skewness	Mean	Variance	Skewness
SIZE	7.0250	4.4030	-0.0930	5.6860	3.5450	-0.0134
LEV	0.7076	5.6540	2.1900	0.5157	4.5460	2.4990
ROA	-0.0322	0.1164	-12.1200	-0.1180	0.4571	-12.3900
Q	2.2120	4.5300	10.8600	2.4700	19.0000	15.2600
CASH	0.0484	0.0515	-7.5340	-0.0138	0.1294	-6.5820
RD	0.0552	0.0149	4.8050	0.0729	0.0265	3.7900
DUALITY	0.8754	0.1091	-2.2730	0.8541	0.1246	-2.0060
INDEP	0.5713	0.0217	-0.4137	0.5750	0.0274	-0.7266
FEMALE	0.0979	0.0094	0.8768	0.0770	0.0099	1.3330
BIG4	0.8302	0.1410	-1.7590	0.7052	0.2079	-0.8999

Panel B After entropy balancing (with weighting)

	MILITARY_D = 1			MILITARY_D = 0		
Variables used in the matching	Mean	Variance	Skewness	Mean	Variance	Skewness
SIZE	7.0250	4.4030	-0.0930	7.0250	3.3830	-0.0907
LEV	0.7076	5.6540	2.1900	0.7075	5.7500	2.0100
ROA	-0.0322	0.1164	-12.1200	-0.0323	0.2378	-17.0700
Q	2.2120	4.5300	10.8600	2.2130	8.4470	18.6600
CASH	0.0484	0.0515	-7.5340	0.0484	0.0655	-9.5430
RD	0.0552	0.0149	4.8050	0.0552	0.0185	4.8020
DUALITY	0.8754	0.1091	-2.2730	0.8754	0.1091	-2.2730
INDEP	0.5713	0.0217	-0.4137	0.5713	0.0277	-0.6039
FEMALE	0.0979	0.0094	0.8768	0.0979	0.0097	0.9885
BIG4	0.8302	0.1410	-1.7590	0.8302	0.1410	-1.7590

Panel C Multivariate results with entropy balancing weighted on the first (mean) moment

Dep. Var. =	ABS_DA
	Absolute value of discretionary accruals
	(1)
MILITARY_D	-0.0034*
	(-1.9409)
SIZE	-0.0024**
	(-2.4087)
LEV	-0.0010***
	(-2.8738)
ROA	-0.1768***
	(-6.2940)
Q	0.0087***
	(3.3521)
CASH	-0.0343
	(-1.1003)
RD	0.0533
	(1.5199)
DUALITY	-0.0028
	(-0.9996)
INDEP	-0.0116**
	(-2.0263)
FEMALE	-0.0192**
	(-2.0926)
BIG4	-0.0123***
	(-3.7154)
_cons	0.1020***
	(3.9791)
Year fixed effects	Yes
Industry fixed effects	Yes
Observations	49,110
Adj. R-square	0.311

Notes: This table presents the results of an entropy balancing analysis. Panels A and B report the mean, variance, and skewness for control variables for the treatment sample (*MILITARY_D*=1) versus the control sample (*MILITARY_D*=0) derived before and after the application of the entropy balancing approach, respectively. Panel C presents the regression

results of the entropy balancing method. The regression model includes industry and year fixed effects. Detailed definitions of the variables are reported in Appendix 1. *Statistical significance at the 10% level. **Statistical significance at the 5% level. ***Statistical significance at the 1% level. This table was generated by authors.

Table 11 Dynamic system GMM estimation

Dep. Var. = ABS_DA	Dynamic panel-data estimation
	System GMM
	(1)
MILITARY_D	-0.0131***
	(-12.8723)
LAG_ABS_DA	0.0332***
	(16.3775)
SIZE	0.0040***
	(3.3879)
LEV	-0.0003
	(-1.3015)
ROA	-0.1145***
	(-47.1261)
Q	0.0090***
	(29.8569)
CASH	-0.1439***
	(-27.1064)
RD	0.1493***
	(9.6147)
DUALITY	-0.0085***
	(-3.7767)
INDEP	-0.0321***
	(-6.7035)
FEMALE	-0.0721***
	(-6.7327)
BIG4	0.0093***
	(3.3699)
_cons	-0.0603**
	(-2.2389)
Year fixed effects	Yes
Industry fixed effects	Yes
Sargan test over-identification (p-value)	0.000
Difference-in-Hansen test of exogeneity (p-value)	1.000
Observations	48,659
No. of Firms	6,066

Notes: This table present the result from the dynamic GMM approach. The dependent variable is the absolute value of discretionary accruals (*ABS_DA*). Z-statistics are displayed in parentheses. The 0.01, 0.05, and 0.1 significance levels are denoted by ***, **, and * (two-tailed), respectively. This table was generated by authors.

Appendices

Appendix 1. The definition for each variable and data sources

Variable	Definition and data sources
Dependent variables	
ABS_DA	Accrual-based earnings management. The absolute value of discretionary accruals, where discretionary accruals are measured by using the modified Jones model including the lagged return on assets as a regressor. See Kim *et al.* (2012) for details. Source: COMPUSTAT and authors' calculation.
POSITIVE_DA	The positive value of discretionary accruals. Source: COMPUSTAT.
NEGATIVE_DA	The negative value of discretionary accruals. Source: COMPUSTAT.
REM_1	Real earnings management, *REM_PROD* minus *REM_DISX*. See Kim *et al.* (2012) for details. Source: COMPUSTAT and authors' calculation.
REM_2	Real earnings management, −*REM_CFO* minus *REM_DISX*. See Kim *et al.* (2012) for details. Source: COMPUSTAT and authors' calculation.
REM_CFO	The level of abnormal cash flows from operations. Source: COMPUSTAT and authors' calculation.
REM_PROD	The level of abnormal production costs, where production costs are defined as the sum of cost of goods sold and the change in inventories. Source: COMPUSTAT and authors' calculation.
REM_DISX	The level of abnormal discretionary expenses, where discretionary expenses are the sum of advertising expenses, R&D expenses, and SG&A expenses. Source: COMPUSTAT and authors' calculation.
Key independent variables	
MILITARY_D	*MILITARY_D* is an indicator variable equal to 1 if a firm has at least one military-experienced senior executive (i.e., a firm's CEO, chairperson, CFO, COO, senior vice president, managing director, chief accountant, and general and vice manager) on the TMT, and 0 otherwise. BoardEx provides employment history for each executive and non-executive director in each firm around the world under the Individual Profile, which ideally indicates "Armed Force" as one category under "Organisation Category". Source: BoardEx and authors' research.
MILITARY_RATIO	*MILITARY_RATIO* is measured as the percentage of the ex-military executives on the TMT (i.e., the number of senior executives having military experience scaled by the total number of TMT members). Source: BoardEx and authors' research.
MILITARY_RATIO_EXCEO	*MILITARY_RATIO_EXCEO* is measured as the number of TMT members with military experience over the total number of TMT members, excluding CEOs from the TMT.
MILITARY_CEO	*MILITARY_CEO* is equal to 1 if the CEO of a firm has a military background in a given year, and 0 otherwise. Source: BoardEx and authors' research.
MILITARY_CFO	*MILITARY_CFO* is equal to 1 if the CFO of a firm has a military background in a given year, and 0 otherwise. Source: BoardEx and authors' research.
LENGTH	The average number of years that senior executives served in the military. Source: BoardEx.
IV_EXE_RATIO_WW2	The percentage of top managers of each firm who were born on or before 1927. Source: BoardEx.
IV_EXE_RATIO_KOREANWAR	The percentage of top managers of each firm born on or before 1935. Source: BoardEx.
Control variables and variables in the further analysis	
SIZE	Natural logarithm of the book value of total assets. Source: COMPUSTAT.
LEV	Book value of total debts scaled by book value of total assets. Source: COMPUSTAT.
ROA	Net income scaled by the book value of total assets. Source: COMPUSTAT.
Q	Book value of total assets minus the book value of equity plus the market value of equity, all scaled by the book value of total assets. Source: COMPUSTAT.
CASH	Net operating cash flow scaled by the book value of total assets. Source: COMPUSTAT.
RD	The ratio of the Research & Development expenditure over the book value of total assets. Source: COMPUSTAT and annual reports.
DUALITY	A dummy variable set to 1 for any of the following combinations: CEO and board chair are the same person; vice-CEO and chair are the same; and/or CEO and vice-Chair are the same (otherwise=0). Source: BoardEx.
INDEP	The percentage of independent directors in the boardroom. Source: BoardEx.
FEMALE	The percentage of female directors in the boardroom. Source: BoardEx.
BIG4	An indicator variable equal to 1 if the firm is audited by a Big 4 auditor. The Big Four accounting organisations include PricewaterhouseCoopers, Ernst & Young,

	Deloitte, and KPMG. Source: COMPUSTAT.
FEMALE_CEO	A dummy variable set to one if a firm's CEO is female, and zero otherwise. Source: BoardEx.
FEMALE_CFO	A dummy variable set to one if a firm's CFO is female, and zero otherwise. Source: BoardEx.
TMT_FEMALE	TMT_FEMALE is measured as the percentage of female managers on the TMT. Source: BoardEx.
TMT_FINANCIAL	TMT_FINANCIAL is measured as the percentage of managers with financial working experience on the TMT. Source: BoardEx.
TMT_AGE	TMT_AGE is measured as the natural logarithm of the average age of managers on the TMT. Source: BoardEx.
TMT_IVY	TMT_IVY is defined as the percentage of executives who graduated from Ivy League institutions on the TMT. Source: BoardEx.
HIGH_ANALYST	An indicator variable assigned a value of one if the number of the analysts following a company is equal to or greater than the median number of unique analysts in a given fiscal year. Source: IBES and DATASTREAM.
ANALYST	The natural logarithm of the number of financial analysts following a company in a given year. Source: IBES and DATASTREAM.
LITIGATION	An indicator variable set to one if a company operates in a high litigation risk industry, and zero otherwise. Specifically, high litigation risk industries have the following SIC codes. Biotechnology: 2833–2836; computer: 3570–3577, 7370–7374; electronics: 3600–3674; and retailing: 5200–5961. Source: COMPUSTAT.

Note: This appendix was generated by authors.

Appendix 2. Additional information on sample distribution by industry and year

Panel A Military and non-military hiring sample distribution by industry

Accrual-based earnings management sample	Military hiring observations	Non-military hiring observations		Two-digit SIC code	Military hiring observations	Non-military hiring observations	
Two-digit SIC code	MILITARY_D=1	MILITARY_D=0	No. of Obs.	Two-digit SIC code	MILITARY_D=1	MILITARY_D=0	No. of Obs.
10 Metal, Mining	189	1,693	1,882	42 Trucking & Warehousing	130	279	409
12 Coal Mining	43	150	193	44 Water Transportation	141	97	238
13 Oil & Gas Extraction	906	2,151	3,057	45 Transportation by Air	327	60	387
14 Non-metallic Minerals, Except Fuels	43	145	188	46 Pipelines, Except Natural Gas	56	117	173
15 General Building Contractors	100	173	273	47 Transportation Services	92	98	190
16 Heavy Construction, Except Building	158	99	257	48 Communications	890	739	1,629
17 Special Trade Contractors	77	38	115	50 Wholesale Trade – Durable Goods	462	682	1,144
20 Food & Kindred Products	527	725	1,252	51 Wholesale Trade – Nondurable Goods	286	416	702
21 Tobacco Products	37	23	60	52 Building Materials & Gardening Supplies	38	41	79
22 Textile Mill Products	11	104	115	53 General Merchandise Stores	153	175	328
23 Apparel & Other Textile Products	126	279	405	54 Food Stores	114	203	317
24 Lumber & Wood Products	140	202	342	55 Automotive Dealers & Service Stations	99	253	352
25 Furniture & Fixtures	165	158	323	56 Apparel & Accessory Stores	145	470	615
26 Paper & Allied Products	210	278	488	57 Furniture & Home furnishings Stores	52	161	213
27 Printing & Publishing	220	285	505	58 Eating & Drinking Places	268	482	750
28 Chemical & Allied Products	2,244	3,974	6,218	59 Miscellaneous Retail	303	627	930
29 Petroleum & Coal Products	206	160	366	70 Hotels & Other Lodging Places	83	101	184
30 Rubber & Miscellaneous Plastics Products	165	262	427	72 Personal Services	84	102	186
31 Leather & Leather Products	33	156	189	73 Business Services	3,173	3,115	6,288
32 Stone, Clay, & Glass Products	141	111	252	75 Auto Repair, Services, & Parking	77	32	109
33 Primary Metal Industries	210	326	536	78 Motion Pictures	40	192	232
34 Fabricated Metal Products	262	453	715	79 Amusement & Recreation Services	238	298	536
35 Industrial Machinery & Equipment	1,347	1,495	2,842	80 Health Services	490	558	1,048
36 Electronic & Other Electric Equipment	1,516	2,781	4,297	81 Legal Services	0	1	1
37 Transportation Equipment	707	598	1,305	82 Educational Services	172	84	256
38 Instruments & Related Products	1,424	1,923	3,347	83 Social Services	12	32	44
39 Miscellaneous Manufacturing Industries	107	272	379	87 Engineering & Management Services	531	439	970
40 Railroad Transportation	110	28	138	99 Non-Classifiable Establishments	139	171	310
41 Local & Interurban Passenger Transit	8	16	24				
Total					20,027	29,080	49,110

Panel B Military and non-military hiring sample distribution by year

Accrual-based earnings management sample	Military hiring observations	Non-military hiring observations	
Year	MILITARY_D=1	MILITARY_D=0	No. of Obs.
2000	48	4	52
2001	631	416	1,047
2002	753	549	1,302
2003	801	557	1,358
2004	1,108	1,440	2,548

2005	1,279	1,793	3,072
2006	1,344	1,837	3,181
2007	1,300	1,867	3,167
2008	1,312	1,890	3,202
2009	1,261	1,754	3,015
2010	1,168	1,722	2,890
2011	1,171	1,751	2,922
2012	1,183	1,739	2,922
2013	1,198	1,742	2,940
2014	1,177	1,878	3,055
2015	1,161	1,934	3,095
2016	1,092	2,041	3,133
2017	1,041	2,059	3,100
2018	999	2,110	3,109
Total	20,027	29,083	49,110

Note: This appendix was generated by authors.