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Top management team expertise and corporate real earnings management activities☆

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ABSTRACT

This study investigates the effects of top management team (TMT) expertise on real earnings management (REM) activities by examining a hand-collected data set that contains 4,690 firm-year observations from Taiwanese listed firms during 2006 to 2010. The results of this study show that the percentages of TMT members possessing master's degrees (PMS) and managing core functional areas (CORE) negatively relate to REM activities, whereas the percentage of TMT members possessing a CPA certificate (PCPA) has the opposite effect. We also find that the PMS and CORE effects are mainly demonstrated through the channel of raising firm performance and thereby reduce managers' incentives to manage earnings. In addition, the effect of TMT expertise on REM activities becomes weaker with increasing firm age. Finally, the outcomes of several robustness tests, such as suspect firm analyses, endogeneity analyses, employing other TMT expertise variables, and additionally controlling for accrual-based earnings management also support our results.

1. Introduction

Over the past several decades, researchers have examined the role of top management team (TMT) characteristics and argued that TMT characteristics are associated with organizational outcomes. Specifically, previous studies document that TMT characteristics such as education background (Hambrick & Mason, 1984; Switzer & Bourdon, 2011)[1] and work experience (Aier, Comprix, Gunlock, & Lee, 2005; Bamber, Jiang, & Wang, 2010; Hambrick & D'Aveni, 1992; Matsunaga, Wang, & Yeung, 2013; Switzer & Bourdon, 2011)[2] are related to firm performance and earnings quality. Most related studies focus on the relationship between TMT characteristics and earnings quality from the perspective of financial statement restatements or accrual-based earnings management (AEM).[3] However, how TMT characteristics affect real earnings management (REM) activities is rarely discussed. Therefore, this study aims to determine how TMT expertise impacts a firm's earnings quality from an REM perspective.

When managers have incentives to communicate with or mislead the users of financial statements, they can use AEM as well as REM to smooth or manage earnings for private purposes (Cohen, Mashruwala, & Zach, 2010; Roychowdhury, 2006; Wongsunwai, 2013). In addition, Graham, Harvey, and Rajgopal (2005) suggest that managers are more likely to manage earnings through REM than AEM, despite REM costs possibly being higher for the firms. Moreover, after the passage of the Sarbanes–Oxley Act (SOX) of 2002, managers have preferred to engage in REM activities rather than false AEM because REM activities attract less scrutiny from auditors and regulators (Cohen, Dey, & Lys, 2008; Cohen & Zarowin, 2010; Francis, Hasan, & Li, 2016). In Taiwan, a series of noteworthy financial scandals broke out in 2004. For example, after Procomp Informatics Co. using falsified sales with fake foreign companies to boost its earnings, the authorities amended and promulgated relevant legislation to strengthen the quality of financial statements and

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[1] Hambrick and Mason (1984) indicate that education level is positively associated with innovation, whereas the type of educational curriculum (administration vs. non-administration) is not a significant factor. Aier et al. (2005) and Chevalier and Ellison (1999) find that firms with managers who attended undergraduate programs requiring higher SAT scores or who had an MBA degree exhibit higher performance or earnings quality. However, Switzer and Bourdon (2011) indicate that firms with TMTs that have members with MBAs exhibit lower performance.

[2] Related studies demonstrate that work experience also plays a critical role in firm outcomes and operations. Managers of a firm could learn better techniques for using work experience to create firm value for stockholders. Consequently, managers who have managerial experience regarding core functions, competitors, another industry, or law and finance jobs can substantially influence a firm's performance and earnings quality (Aier et al., 2005; Bamber et al., 2010; Hambrick & D'Aveni, 1992; Matsunaga et al., 2013; Michel & Hambrick, 1992).

[3] Previous studies also use the extent of information asymmetry (Chemmanur et al., 2009), the content of voluntary disclosure (Bamber et al., 2010), information content of earnings (Warfield, Wild, & Wild, 1995), management earnings forecasts (Baik et al., 2011), and asymmetric timeliness of loss recognition (Ahmed & Duellman, 2013) as indicators of earnings quality.

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reporting. Since the Procomp scandal, Taiwan listed firms have less discretionary accruals (Shih, 2005), tend to engage in REM (Chou, 2010), and auditors reduce their acceptable level of clients' financial risk (Liu, Wang, & Lai, 2009). Consequently, REM activities have generated increased interest and gained importance. Numerous recent studies focus on investigating the causes and consequences of REM activities.[4] However, studies that empirically document the link between the characteristics of TMT and REM activities are scant. The current study, therefore, fills this gap in the literature by investigating how TMT expertise affects firms' REM activities.

TMT expertise refers to a management team's knowledge and experiences and may exert both positive and negative effects on a firm's operating performance. Several related studies find that TMTs with more expertise are associated with higher firm operating performance (e.g., Chemmanur & Paeglis, 2005; Haleblian & Finkelstein, 1993; Hambrick & D'Aveni, 1992; Hambrick & Mason, 1984). For example, Chemmanur and Paeglis (2005) suggest that firms with more TMT expertise, such as higher education levels and superior core functional knowledge, are likely to select higher-quality projects, implement them more effectively, and, therefore, have higher operating performance. In addition, superior firm operating performance also lessens managers' incentives to manage earnings (Balsam, Haw, & Lilien, 1995; DeFond & Park, 1997; Doyle, Ge, & McVay, 2007; Keating & Zimmerman, 1999).[5] Hence, based on incentive-reduction concerns, TMT expertise is reasonably conjectured to be negatively associated with a firm's REM level (called the *incentive-reduction effect*).

However, some other studies report that managerial expertise also augments the incentives of managerial entrenchment (Finkelstein, 1992) and has a negative effect on firm value (Dane, 2010; Schwenk, 1993). In such circumstances, the motives for managers to engage in earnings management would increase. Finkelstein (1992) demonstrates that managerial expertise is a critical factor that leads to a powerful or an entrenched TMT, thus suggesting that TMT members with greater expertise are more likely to engage in entrenchment activities and subsequently to manage earnings in order to prevent information leaks about their entrenched behaviors (Ding, Zhang, & Zhang, 2007). Therefore, based on managerial entrenchment concerns, TMT expertise is expected to be positively associated with a firm's REM activity level (called the *managerial entrenchment effect*). According to these discussions, TMT expertise is expected to affect the level of REM activities through the incentive-reduction effect and the managerial entrenchment effect. The effects of TMT expertise on REM levels are unclear. It is, however, apparent that how TMT expertise affects REM activity levels is an empirical question warranting further examination.

Following Chemmanur and Paeglis (2005), this study hand-collects the percentage of TMT members who have a master's degree (*PMS*), manage core functional areas (*CORE*), and possess a certified public accountant (CPA) certificate (*PCPA*) to measure TMT expertise. The variable *PMS* represents the education level of TMT members, whereas *PCPA* and *CORE* refer to the TMT members' level of expertise in accounting and core functions, respectively. To capture firms' REM levels, this study follows Cohen and Zarowin (2010) and estimates abnormal operating cash flows (*R_CFO*), overproduction (*R_PROD*), and abnormal discretionary expenses (*R_DISX*). In addition, three comprehensive metrics are developed according to Cohen et al. (2008), Cohen and Zarowin (2010) and Zang (2012) to capture the total effects of REM. After considering relevant control variables, industry and year fixed effects, and one-way clustering by firm (Petersen, 2009), this study regresses the indications of REM on *PMS*, *CORE*, and *PCPA* to examine the association between TMT expertise and REM.

Using a sample of 4,690 firm-year observations in Taiwan from 2006 to 2010, the current study presents the following results. First, the percentage of TMT members who have master's degrees (*PMS*) and manage core functional areas (*CORE*) are both negatively associated with REM activity levels, indicating that TMTs with higher education levels and greater core functional knowledge improve firm performance and reduce the incentives to engage in REM activities. The results also imply that the incentive-reduction effect dominates the managerial entrenchment effect, which leads to negative associations between REM and TMT education levels as well as TMT core functional expertise. Second, this study finds that the percentage of TMT members who possess a certified public accountant certificate (*PCPA*) is positively associated with REM activity levels, which suggests that the managerial entrenchment effect dominates the incentive-reduction effect for TMTs with greater accounting expertise. When managers with expertise in accounting choose to hide their entrenched behavior through earnings management, they tend to engage in REM activities to avoid the ligation risk of AEM behaviors. Third, the discussed results are attenuated by firm age, possibly indicating that older and more established firms have stronger corporate cultures (Van den Steen, 2005) and lower information asymmetry (Zhang, 2006). These conditions weaken managers' influence on firm operational and reporting strategies, thereby reducing the impact of TMT expertise on REM activity levels. Finally, as a robustness check, this study restricts the analysis to sample firms with incentives to meet earnings benchmarks (suspect-firm analysis), controls omitted variable biases (the endogeneity problem), uses other variables, such as CEO/CFO expertise and MBA degree, to proxy TMT expertise, and controls for the effect of discretionary accruals on REM. The results of the additional tests are consistent with our main findings.

This study contributes to TMT characteristics and REM research in several respects. First, it contributes to the literature by demonstrating that TMT characteristics are associated with REM activities from a managerial expertise perspective. Prior studies have explored the relationship between TMT features and earnings quality by employing discretionary accruals (Geiger & North, 2006), financial statement restatement (Aier et al., 2005; Demerjian, Lev, Lewis, & McVay, 2013), the content of voluntary disclosure (Bamber et al., 2010), forecast accuracy (Baik, Farber, & Lee, 2011), and information asymmetry (Chemmanur, Paeglis, & Simonyan, 2009). We demonstrate the effect of TMT expertise on REM and advance the growing literature on the determinants of REM.

Our second contribution takes the form of a response to Hambrick's (2007) call for more research on upper echelons theory. Jiang, Zhu, and Huang (2013) and Matsunaga et al. (2013) suggest that the experience of CEOs plays a role in improving earnings quality. Aier et al. (2005) indicate that CFOs with prior work experience as CFOs or CPAs are less likely to restate their earnings. In contrast to the work of Jiang et al. (2013), Matsunaga et al. (2013), and Aier et al. (2005), this study echoes Hambrick's (2007) argument by suggesting that considering the characteristics of the entire management team rather than an individual manager, such as the CEO or CFO, and thus creates a fuller picture of the effect of TMT characteristics on earnings quality.

Third, the examination of TMT's fields of expertise helps explain the effect of TMT characteristics on earnings quality. Cao, Myers, and Omer (2012) and Demerjian et al. (2013) employ a composite measure of managerial ability and propose that managers that are more able are less likely to restate their financial statements.[6] This study both differs

[4] For example, CEOs' position protection, internal governance, independent directors and high-quality venture capitalists diminish firms' REM (Chen et al., 2015; Cheng et al., 2016; Ge & Kim, 2014; Osma, 2008; Wongsunwai, 2013; Zhao et al., 2012), whereas firms have more REM because of longer auditor tenure (Chi et al., 2011) or stricter debt covenant slack (Kim et al., 2011). Bereskin et al. (2015) find that cutting R&D expenditures to manage earnings can lead to firms being less influential and less productive in patent performance and exhibiting further diminished market valuations, whereas the aggregate REM measure generated by Cohen et al. (2010) is positively related to firms' future crash risk (Francis et al., 2016) and negatively affects firms' future performance (Huang & Sun, 2014).

[5] In addition, managers with more core functional expertise have a more complete understanding of the negative effect of REM. It also reduces their incentives to engage in REM.

[6] The composite measure of managerial ability describes a firm's excess output performance given the fixed resource inputs. The managerial ability measure cannot indicate any specific talent or experience possessed by managers.