THE IMPACT OF TOP MANAGEMENT TEAM DIVERSITY ON EARNINGS MANAGEMENT

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"Failure is not an option in life."

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Abstract: The need to increase diversity among employees gained attention several decades ago. Heterogeneous groups are more inclined to make ethical decisions in comparison to homogeneous groups. Organizations manage their earnings to show higher profits and lower expenses, and this has negative consequences for stakeholders. Earnings management activities contributed to the bankruptcies and collapse of Enron and WorldCom. Shareholders use financial information as a source for decision-making regarding investments. Thus, distortions in financial information may cause shareholders to make unintended decisions. In this study I investigated the moderating effect of top management team diversity on earnings management. Data were collected from the Compustat databases for the S&P 500 publicly traded firms from the period 2008–2018 to estimate the earnings behavior of firms during the meltdown and post-recession periods. I used the generalized estimating equation statistical method to evaluate the results. I found that the demographic diversity of an executive board positively impacts the company's performance. The moderation variables risk diversity (a composite of age and tenure), gender diversity, knowledge diversity (education) and values diversity (a composite of political affiliation and culture) did not support the study. Gender diversity showed a weakened direction in the relationship but was not significant and therefore did not support the study, while risk diversity and knowledge diversity increased earnings management behavior, which was statistically significant and did not support the study. Values diversity showed strength in the relationship but was not significant and did not support the study as predicted.

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CHAPTER I

INTRODUCTION

Historically, both management researchers and practitioners have recognized the importance of diversity among company employees, especially top executives. Two opposing views exist regarding the impact of diversity on the efficiency of a business. While proponents of executive diversity assert that heterogeneity provides significant benefits to business performance, opponents contend that the demographic heterogeneity of the top management team (TMT) leads to conflicts and decreased communication efficiency (Ashton, 2010; Coleman, 2013, Mayhew, 2013).

The need to increase diversity among employees gained attention several decades ago. The demographic diversity of an executive board positively impacts the company's performance (Joshi et al., 2011; Parry & Urwin, 2011). Several authors have argued that diversity stimulates debates, improves the decision-making process, and positively affects firm performance (Joshi et al., 2011; Parry, 2014; Parry & Urwin, 2011; Watson et al., 1993). Relatedly, Qi and Tian (2012) buttressed the discussions that TMT diversity provides opportunities for changing earnings management behavior. Similarly, myriad research conducted along this line of study has suggested that most variables of diversity, including age, gender, and culture, could impact the firm's performance significantly (Nielsen & Nielsen, 2013; Parola et al., 2015; Sila et al., 2016; Talke et al., 2010).

An organization's earnings management is performed by its TMT, and several scholars have noted that diversity in TMT influences the team's decisions (Joshi et al., 2011; Nielsen &

Nielsen, 2013; Parry & Urwin, 2011). Yet there is little or no literature in the management research findings investigating how TMT diversity influences earnings management.

Earnings Management

Earnings management is the process of choosing accounting practices that result in reporting earnings that are advantageous to the firm and its TMT at the expense of its external stakeholders (Bhaumik, 2010; Dal Maso et al., 2020; Healy & Wahlen, 1999; Jara et al., 2019; Tessma, 2020). Earnings management includes financial reporting through various manipulations, such as reporting higher profits and lower expenses in a given year when creating periodic or annual reports (Qi & Tian, 2012). Earnings management is not dependent on solely the chief executive officer (CEO) or the chief financial officer (CFO) but on the entire TMT. Hence, earnings management requires collaboration between TMT members (Bonacchi et al., 2017; Qi & Tian, 2012). For instance, the manipulative practice of sending more products into the market than can be sold, called channel stuffing, must be coordinated with operations and marketing officers in order to work (Dechow & Skinner, 2000; Fields et al., 2001; Habib, 2007).

When organizations manage their earnings to show higher profits and lower expenses, it has negative consequences for stakeholders (Bhaumik & Gregorious, 2010; Hong & Andersen, 2011; Prior et al., 2008; Xu et al., 2007). For example, shareholders use financial information as a source for decision-making regarding investments. Thus, distortions in financial information may cause shareholders to make unintended decisions (IFN, 2015). Earnings management activities are blamed for the bankruptcies and collapse of Enron and WorldCom. Enron avoided recording liabilities, while WorldCom employed inappropriate revenue recognition procedures. These inappropriate earnings management behaviors misled investors and caused them to lose their investments, eventually resulting in the collapse of the companies (Beaudoin et al., 2015; Walker,

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2013; Kim & Park, 2012). Earnings management practices are dishonest and unethical, especially if management's intentions are opportunistic, like benefiting from stock options and bonuses or misleading stakeholders (IFN, 2015).

Accounting Standards

Accounting standards give a wide range of discretion to managers on how financial statements should be prepared and presented to stakeholders (Bartov et al., 2005; Brown et al., 2014; Burgstahler et al., 2006; Psaros, 2007). This latitude and discretion unfortunately create an avenue for some managers with opportunistic tendencies to manipulate earnings. These managers prepare financial statements and reports that are beneficial to themselves at the expense of the shareholders (Bartov et al., 2005; Brown et al., 2014; Burgstahler et al., 2006). Overwhelming evidence suggests that earnings management is practiced for opportunistic reasons (Beaudoin et al., 2015; Elias, 2004; Qi et al., 2018; Roychowdhury, 2006). The managers' opportunism influences them to unethically deceive stakeholders on the actual performance and risk of the firm they are managing. It has been established that publicly traded firms indulge in earnings management for a variety of reasons, including deliberate attempts to influence analysts' and the public's perceptions of the value of the firm; attract a lower cost of debt; and potentially reduce debt covenant violations.

Ethical Decision-Making

The subject of ethical decision-making in the workplace has generated growing interest from both researchers and practitioners. Ethics has been studied at both the individual and organizational levels (Beaudoin, 2014; DeGrassi et al., 2012; Ford, 1994). Individual-level studies include cognitive moral development and moral identity, while firm-level studies comprise ethical

culture and corporate social responsibility (DeGrassi et al., 2012). These studies have concluded that heterogeneous groups are more inclined to make ethical decisions in comparison to homogeneous groups (DeGrassi et al., 2012; Mahadeo et al., 2012; Rao & Tilt, 2016).

Aim

The current study examines the impact of TMT diversity on ethical decision-making in earnings management at the firm level. I carried out this study purposely to extend the existing literature by building upon the argument that TMT heterogeneity leads to improved ethical behavior, which subsequently leads to fewer earnings management practices at the firm level.

Scope of the Study

Extant studies have documented relationships between CEO- and CFO-specific characteristics and earnings management (Beaudoin et al., 2015; Elias, 2004; Qi & Tian, 2012). In this study I concentrate on how TMT diversity attributes such as gender, age, job, culture, education, tenure, and political affiliation moderate the relationship between ethical decisions of earnings management and return on assets (ROA) or debt. Within the framework of the upper echelons theory, Hambrick (2007) and Hambrick and Mason (1984) posited that observable and verifiable characteristics of TMTs should form the basis of ethical decision-making at the firm level. This theory has led to myriad studies.

DeGrassi et al. (2012) examined the impact of team heterogeneity on strategic decisions. They posited that teams with diverse backgrounds are more inclined to be ethical due to the prevalence of divergent ideas and inclusiveness of the thought process. Nielsen and Nielsen (2013) furthered the argument in their study, which examined nationality diversity and firm performance. They posited that TMT heterogeneity plays a significant role in the overall decision-making

process, which implies that TMT members with diverse backgrounds tend to formulate viable strategic alternatives marked by a high degree of ethical standard. However, firms tend to hire and retain employees who fit their personal preferences, resulting in the employment of comparable workers and the creation of homogeneous groups that limit the ability of the company to deal with complex decision issues like earnings quality (Nielsen & Nielsen, 2013; Velinov & Kubicek, 2013).

In addition to their study on ethics about the decision-making process, DeGrassi et al. (2012) revealed that conglomerates such as Enron, Tyco, Hewlett-Packard, and WorldCom experienced massive failures and loss of shareholder value due to their lack of ethical behavior in corporate boardrooms and sometimes on Wall Street. The authors bolstered their argument with the fact that TMT members face challenges in making difficult decisions that could be morally confusing, hence blurring the divide between doing right and doing wrong. This lack of ethical behavior led to the eventual collapse of these firms, resulting in losses of stakeholders' lifetime investments.

The Role of Diversity in Organizations

The role of diversity in an organizational setting needs the understanding of practitioners and researchers. Group diversity is vital to decision-making in the workplace since decisions may involve ethical issues like the quality of earnings reporting (DeGrassi et al., 2012; Mahadeo et al., 2012; Rao & Tilt, 2016). When an organization is faced with a moral dilemma, group diversity plays a vital role because there is a need for divergent views to resolve the issue.

Diversity is an essential attribute in group composition, and a heterogeneous group is better at making ethical workplace decisions (DeGrassi et al., 2012; Harris et al., 2019). In heterogeneous

groups, individuals from various backgrounds bring exceptional viewpoints and knowledge to dealing with ethical issues, but these might be lacking in a homogenous group. Furthermore, researchers have pointed out that diverse groups show a greater increase in performance over time than homogenous groups (DeGrassi et al. 2012; Wan Mohammad et al., 2016). Researchers have further indicated that comparatively, when there is an ethical issue that needs resolution, homogenous groups are more likely to come to a quick consensus than heterogenous groups (DeGrassi et al., 2012; Kouaib & Almulhim, 2019; Qi et al., 2018). A homogenous group may not select the morally correct action, probably due to the similarity in viewpoint, which may lead to unethical decisions in issues like earnings management. However, the dissimilarity in viewpoint of a heterogeneous group brings different qualities and personal knowledge onboard, leading the group to delve into the issues at stake before reaching a consensus—for instance, taking better action regarding ethical issues like managing earnings (DeGrassi et al., 2012; Kouaib & Almulhim, 2019; Qi et al., 2018).

Problem Statement of This Study

Since earnings management requires an organization's TMT to execute it, understanding the relationship between TMT composition and earnings management is imperative to theory and practice. However, prior literature has paid little attention to TMT composition as a predictor of earnings management. In this study I address the literature gap by examining the impact of TMT attributes on an organization's earnings management decisions. More specifically, I test whether a high degree of TMT diversity influences an organization's earnings management behavior. I also examine how the diversity of the TMT can diminish accounting malpractice, as suggested by various studies mentioned in the review of the existing literature.

The reason for this study is to contribute to the existing literature by enhancing our understanding of the drivers of TMT behaviors regarding earnings management in publicly traded firms, specifically in the United States.

Research Questions

I proposed the following research questions (RQs) to achieve the objectives of this study:

RQ 1: Does a firm's TMT diversity impact earnings management?

RQ2: Which type of TMT diversity has the strongest impact on earnings management?

RQ3: Do the results of the study fill in the research gaps observed during the literature review?

In the next section I review the existing literature on earnings management and TMT. The subsequent sections comprise discussions of the hypotheses formulation, the empirical methods I used to test the predictions, and, lastly, the study's findings and implications.

CHAPTER II

LITERATURE REVIEW

Over time, accounting professions have become concerned with earnings management behaviors (Ghazali et al., 2015; Healy & Wahlen, 1999; Khan, 2012). Earnings management transpires when accounting transactions are altered to either mislead stakeholders about organizational performance or to report accounting numbers that influence contractual outcomes through management judgment (Ghazali et al., 2015; Healy & Wahlen, 1999; Khan, 2012). An organization has short-term goals to present financial reports to meet specific objectives that they deem essential. For the managers to achieve these reporting goals, they manipulate earnings. Managers' manipulation of earnings creates a conflict of interest between stakeholders and management (Ghazali et al., 2015; Zakaria et al., 2015).

Financial reporting is a necessary ingredient for the smooth operation of corporate governance. For this reason, the management responsible for the provision of the accounting information needs to be of uncompromised integrity and competence. Overwhelming evidence suggests that incidents of accounting malpractice used by firms, such as creative accounting, earnings management, and earnings guidance, lead to opportunistic gains, so accounting practices need to be scrutinized by managers (Beaudoin et al., 2015; Elias, 2004; Qi et al., 2018; Roychowdhury, 2006).

Stakeholders demand financial data to predict future cash returns and evaluate risks associated with their investments. Stakeholders provide incentives to managers for accurate

reporting of periodic financial data, and any manipulation of earnings could mislead the investors. Watts and Zimmerman (1978) indicate that "one function of financial reporting is to constrain management to act in the shareholder interest" (p. 113). However, accounting standards allow flexibility for managers to use discretion with the earnings they report. Additionally, accounting standards enable the use of earnings management for income smoothing, which is a legitimate and acceptable practice when used for short-term purposes (Ghazali et al., 2015; Healy & Wahlen, 1999; Khan, 2012).

Accounting standards give managers an extensive range of discretion on how they should prepare financial statements and present them to stakeholders (Auken & Carraher, 2013; Burgstahler et al., 2006; Jamali, 2008; Voinov & Bousquest, 2010). This accounting practice creates an opportunity for managers to prepare financial reports that are beneficial to their own interests. The opportunistic impulses of these managers influence them to deceive the stakeholders about the actual performance and risk of the firm. Accrual management of earnings is the term used to describe a change in accounting methods or estimates within the generally accepted accounting principles (Dechow & Skinner, 2000; Gunny, 2010; Peasnell et al., 2005; Zang, 2012). Similarly, Roychowdhury (2006) described earnings management as varying the normal operation of real business transactions.

Earnings management occurs when a firm gives a price discount for an increase in sales to reduce the cost of goods when the firm purposefully engages in overproduction to improve margins by keeping discretionary spending down (Albernathy et al., 2014; Roychowdhury, 2000; Zang, 2011). In a related study, Hribar et al. (2006) examined whether management increases earnings per share (EPS) by reducing the number of shares, which is the denominator using stock repurchase as a means of managing earnings. Interestingly, these authors found that if firms do not repurchase

stocks, they will miss the EPS forecast (Hribar et al., 2006). Some other scholars have examined the use of derivatives and discretionary accruals as a means of managing earnings. Their respective studies indicated that management can use hedging by smoothing cash flows through decreasing or increasing accruals (Barton, 2001; Bartram et al., 2012; Beneda, 2013; Choi et al., 2015). Additionally, these authors showed that firms with lower absolute levels of discretionary accruals; having derivative portfolios holding large amounts are partially substituting derivatives and discretionary accruals for earnings smoothing accruals (Barton, 2001; Bartram et al., 2012; Beneda, 2013; Choi et al., 2015).

Al Azeez et al. (2019) researched the impact of board characteristics, including CEO duality, board unconventionality, board diversity, and the magnitude of the board on the levels of earnings management in the global oil and gas corporations. The results from their study indicated that sovereign board diversity has the ability to reduce levels of earnings guidance. On the contrary, CEO duality was found to increase earnings management. Thus, separating the roles of the CEO and the board of directors chair could solve the problem by enhancing the board's monitoring and control capability, which tends to improve the board's information-processing capacities. In a related study in Nigeria, Omoye and Eriki (2014) conducted a study of Nigerian quoted corporations about high and low earnings management and found that, while most of these corporations use elevated levels of earnings management, a gender-diversified board has a considerable likelihood of using a earnings management. Likewise, a number of authors have carried out research on gender diversity (Lakhal et al., 2015; Ozbilgin et al., 2011; Smith-Doerr et al., 2017; Turban & Zhang, 2019) and in their respective studies concluded that as the numbers of women board directors increase there is an automatic decrease in earnings management and creative accounting.

The motivation for earnings management by an organization is mostly from capital markets and other users of financial statements, which put pressure on management to produce a quality financial report for public companies. Capital markets and investors depend on a firm's financial statements to make investment decisions and expect the firm to produce a financial report that meets the needs of the stakeholders (Clarkson et al., 2008; Cummins et al., 2017; Homberg & Bui, 2013; Sherma & Young, 2016). In short, managers are motivated to engage in earnings management to meet the stakeholders' expectations.

The quality of a financial statement is impacted when the firm's management participates in managing earnings for opportunistic reasons such as boosting their compensation value, bonuses, and stock options (Bonacchi et al., 2017). A firm's management may engage in earnings manipulation to satisfy their opportunistic tendencies, which include capital markets, seasoned equity issues, and debt covenants (Armstrong, 2010; Bonacchi et al., 2017). These financial statements can also mislead external users and harm the stakeholders or shareholders of the firm. Furthermore, for short-term decisions managers could manipulate earnings to present their financial statements to meet specific objectives that they deem advantageous to themselves or the firm (Han et al., 2010). Even though the primary role of accounting accrual is to enhance the forecast of future cash flow, research shows that managers may use their discretion to report earnings opportunistically (Becker et al., 1998; Healy & Wahlen, 1999; Qu et al., 2013; Samudhram et al., 2010; Wadesango & Wadesango, 2016; Williams & Adams, 2013).

Management can use accruals to opportunistically increase or decrease earnings in various contexts, including before preliminary public and seasoned equity offerings. There are several studies on the management of earnings during the issuance of equity security (Qu et al., 2013; Rangan 1998; Samudhram et al., 2010; Teoh et al., 1998a, 1998b). The amount of money raised

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during an equity offering mostly depends on the firm's stock price on the day of the equity issuance, along with its reported earnings. For these reasons, to boost the stock price and increase the amount of capital raised, managers can be motivated to manipulate earnings (Baker et al., 2019; Goldschmidt & Schmieder, 2017; Kothari et al., 2015). In related research, authors have examined seasoned equity offerings and found that firms underperformed years after managers had manipulated discretionary accruals to increase earnings during the time of issuance of equity (Qu et al., 2013; Rangan 1998; Samudhram et al., 2010; Teoh et al. 1998a; Wadesango & Wadesango, 2016). The researchers further reported that during the issuance of the seasoned equity, discretionary accrual activities went up significantly at the time of the offering and obviously declined in later years. Therefore, the process of discretionary accrual manipulation increases net income before and during the offer of the equity, and after the equity issuance, the net income falls (Maverick, 2020; Qu et al., 2013; Samudhram et al., 2010; Wadesango & Wadesango, 2016).

Teoh et al. (1998) again evaluated the relationship between equity offerings and managing earnings but found a negative correlation between the net income and stock returns at pre- and post-issuance stages of the equity offering. Thus, the stock price achieved during the issuance of an equity falls considerably the year after the issue. These authors interpreted their results to mean that there is a negative relationship between current accruals and stock returns after issuance. This was pertinent to all firms during the period 1976 to 1990.

When going through the initial public offering, companies could apply for positive accruals to present net income more than cash flow. However, Teoh et al. (1998a) showed a negative relationship between earnings management and the long-term performance of initial public offerings (IPOs). Relatedly, other scholars have discovered that firms that portray strangely high accrual during the IPO period will show a lower performance in stock three years after the IPO

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(Teoh et al., 1998; Yoon et al., 2015). The use of earnings management is considered an unethical practice and such manipulations could be deemed financial fraud. Use of accounting discretion is dishonest in the sense that the managers are distorting the economic reality of the firm to benefit management at the expense of other stakeholders. For instance, Greenfield et al. (2008) provided evidence on the relationship between earnings management implementation and proper ethical orientation. Likewise, Elayan et al. (2016) argued that changes in accruals were usually associated with corporate ethical rankings. Hence, the implementation of earnings management leads to unethical behavior, which leads not only to reputation destruction but also to significant legal issues.

Firms with high stock price sensitivity with fewer earnings use cookie jar reserves and income smoothing to manage their earnings by giving more income to foundations as funding choices in the current year and increased revenues in the subsequent periods (Petrovits, 2006). Highlighting this manipulative practice, Mande et al. (2000) carried out a study on Japanese companies that had reductions in their research and development (R&D) during the 1990 recession. The study reported that the reduction in the companies' R&D during the recession indeed showed significant income-increasing behavior, which portrays the cutbacks as a signal of earnings management instead of ideal business decisions.

Another incentive for management to manipulate earnings to meet contractual agreements is through debt covenant by the organization. Firms must raise their amount of debt to finance their operations or enter into debt contracts with financial institutions to get the debt to embark on capital expenditures (Alavi et al., 2008; Altman & Stoneberg, 2006; Hofstrand, 2013; Miloud & Alpes-Savoie, 2014). The debt contract protects the lender against nonpayment by the borrower. DeFond and Jiambalvo (1994) investigated abnormal total and working capital accruals of 94 firms that

reported debt covenant violations in annual reports from 1985 through 1988. The study employed both time-series and cross-sectional models of normal accruals. The results showed the existence of unusual total and working capital accruals in the year before the firms violated the debt covenants. These authors further explained that, in the year of violation, both models' results showed negative abnormal total and working capital accruals. After controlling for fixed effects in the year of a breach, there were positive abnormal working capital accruals (Bhandari et al., 2018; Cheng & Thomas, 2006; DeFond & Jiambalvo, 1994; Diaz & Martin, 2017; Shi & Zhang, 2011). When the firm's compensation contract tied to earnings provided incentives for managers, the managers manipulated accounting numbers out of self-interest (Guidry et al., 1999; Healy, 1985; Holthausen et al., 1995; Man & Wong, 2013; Sun & Rath, 2008).

A similar study by Franz et al. (2014) examined the effect of length of time of debt violation by firms on earnings management. The deterring nature of debt covenants inspires some executives to manage earnings to conform to the demands of the debt covenant and avoid the cost of default on the debt. Franz et al. (2014) further proposed that, comparatively, firms that are on the edge of defaulting on their debt obligations have stronger tendencies to use earnings management than firms that have a more extended period to fulfill their debt covenant. Firms that were closer to violating their debt obligation embarked on more aggressive accrual management than those that had a more extended period before breaking their debt covenants. This assumption was also supported by a number of other authors (Franz et al., 2014; Man & Wong, 2013; Rahman et al., 2013; Sun & Rath, 2008). The use of earnings management by a TMT for opportunistic purposes may affect the authenticity of the firm's financial statements, which may reduce the reliability, relevance, compatibility, and quality of its accounting information (IFN, 2015). Currently,

earnings management practice appears to be one of the most widely discussed topics in accounting science (Beaudoin et al., 2014; Elias, 2004; Kouaib & Almulhim, 2019).

Diversity in TMT improves decision-making at the executive level and enhances the performance of a firm (Homberg & Bui, 2013). Equally, other authors have examined the impact of team heterogeneity on strategic decisions and hypothesized that teams with diverse backgrounds are more inclined to be ethical due to the prevalence of divergent ideas and inclusiveness in problem-solving (DeGrassi et al., 2012; Mahadeo et al., 2012; Rao & Tilt, 2016). In another addition to the literature, Nielsen and Nielsen (2013) examined nationality diversity and firm performance and also reported that TMT heterogeneity plays a significant role in the overall decision-making process. TMT members with diverse backgrounds tend to formulate viable strategic alternatives marked by a high degree of ethical standard (Nielsen & Nielsen, 2013; Parola et al., 2015; Sila et al., 2016). However, firms tend to hire and retain employees who fit their personal preferences. This results in the employment of comparable workers, creating homogeneous groups that limit the ability of the company to deal with complex decision-making issues such as earnings quality (Nielsen & Nielsen, 2013; Parola et al., 2015; Sila et al., 2016).

Similarly, DeGrassi et al. (2012) proved that an executive team's composition influences the amount, diversity, and value of resolutions it deems ethical. Hence, researchers agree that leadership diversity increases the quality of the decision-making process in the area of earnings management strategy, thereby playing a significant role in bringing the business strategically in line with better decision-making processes with current and future market movements (Qi et al., 2018). In recent times, the reason for increasing diversity has been the necessity to include a broader range of talents. For instance, more than a third of companies (38%) surveyed by PricewaterhouseCoopers (2017) implemented diversity strategies to attract talent discovered that,

21% of surveyed companies implemented diversity improvements into their human resource strategies to address the requirements of new legislation. For instance, Sharma (2016) found that banks started to increase female participation on their boards mainly due to the necessity to address new laws.

Nevertheless, the idea that diversity results in higher creativity, productivity, and efficiency in a workforce is continuously gaining popularity. Companies with implemented diversity strategies can maximize their potential and ensure a higher contribution from their employees to the business's success (Patrick & Kumar, 2012). Similarly, heterogeneity in decision-making and problem-solving styles produce better results through the implementation of a broader range of perspectives and a more critical analysis of issues expressed by executives (Saeed, 2016). Gender diversity gained significant attention from scientists examining its impact on the efficiency of managing a business. For instance, researchers have suggested that diverse executive teams tend to undertake more socially desirable actions compared with all-male boards. Adam and Ferreira (2009) found that higher numbers of female executives are associated with higher ethical decision-making, which results in higher efficiency (Adams & Ferreira, 2009; Barua et al., 2010). Moreover, a survey by McKinsey (2018) showed that companies with diverse executive teams reported higher earnings before interest and tax levels compared with firms with only male executives.

Similarly, Owen and Temesvary (2017) discovered that a higher share of women among bank executives led to better financial performance reported by companies. Additionally, Jizi and Nehme (2017) determined that companies' stock volatility decreased after an increase in the participation of females on their boards, which could mainly be explained by the introduction of a lower level of risk-taking. However, the efficiency of introducing diverse executive teams depends

on other factors, which also should be considered. For instance, Owen and Temesvary (2017) showed that, for low-capitalized banks, the introduction of gender diversity among top managers resulted in a decrease in return on assets. Contrary to this, other researchers have shown that well-capitalized banks succeeded after increasing the gender diversity of the board, which can be explained by the overall better quality of management at such companies. Increasing the participation of females onboard also can result in several problems. Owen and Temesvary (2017) discovered that companies with 7% to 8% female executives tend to have higher communication costs, which decreases the efficiency of the top leaders' activity.

Leszczynska (2018) discovered a significant relationship between a company's stock prices and its gender quota announcement. The researcher found that in these companies, female executives were comparatively younger than their male counterparts and, therefore, perceived as less experienced. Additionally, Leszczynska (2018) further showed that unlike firms that attracted outsiders on board, companies with female insider executives experienced a positive impact on their business performance.

Other research has shown that, in addition to gender, the most widely recognized factors are education level, age, and tenure. This is especially important in the case of forming a TMT by a diversity principle. Others also have suggested or agreed that executive boards that include people of different ages, educational levels, and tenure are not able to gain positive outcomes to their business performance (Leszczynska, 2018). This could prove that executive diversity based on age, education level, and tenure may not be as efficient as gender diversity.

The large number of corporate scandals in the 21st century, which includes Enron, Tyco, Hewlett-Packard, and WorldCom, has left behind memories of ethics and diversity in organizations (DeGrassi, 2012). A lack of ethical behavior in these firms led to their eventual
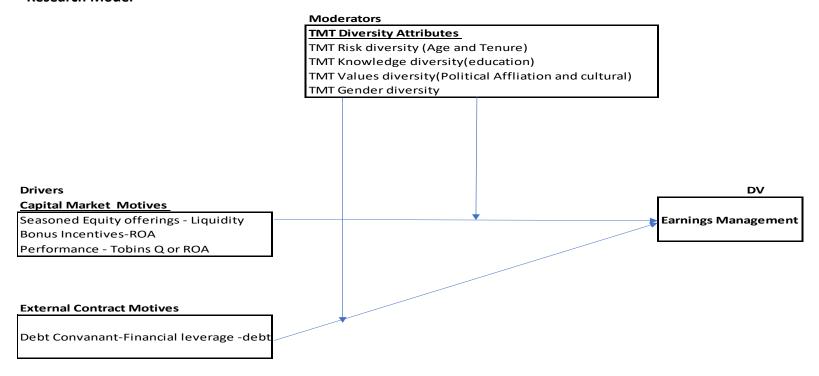
collapse, resulting in the loss of stakeholders' lifetime investments. According to some researchers (Beaudoin et al., 2014; DeGrassi 2012; Wan Mohammad et al., 2016), group diversity may be the key to ethical decision-making in the workplace. The study further pointed out that there is a need for multiple divergent views when a moral dilemma arises at a workplace, and a group with more diversity leads to more ethical decision-making. Hence, heterogeneous groups make more ethical decisions than homogenous groups (DeGrassi, 2012). The findings suggest that demographic diversity is an essential consideration for group decision-making involving ethical issues. Other studies also have stated that individuals from various backgrounds bring unique perspectives, experiences, and information to considering ethical issues that may be absent in homogenous groups. Furthermore, the results from several studies showed that there is an increase in the performance of the diverse group over time (DeGrassi, 2012, Qi & Tian, 2012; Saona et al., 2019).

The current study proposes that heterogeneous groups bring different attributes and personal experiences onboard, and heterogeneous groups are more likely to share information and develop new ideas that will result in ethical action regarding earnings management. Heterogeneous teams are composed of individuals with different attributes that impact their views on moral decision-making tasks like earnings management. This implies that if TMT members are not ethical they can manipulate the firm's earnings to benefit the managers or the firm rather than the stakeholders/shareholders (owners') interest. Firms with diverse TMTs are perceived to be genuine and are more likely to root out bad behavior, including indications of poor morals like earnings management or unethical accounting practices, than firms with homogenous teams at the management level.

A company with diversity sends a strong signal that the perception of ethicality depends on the diversity of the firm. Several studies have shown that the more diverse the top management,

the more ethical the team. This diversity subsequently diminishes the possibility of earnings management or any other unethical accounting practice (DeGrassi, 2012; Qi & Tian, 2012; Saona et al., 2019). Hence, in this study I propose that TMT diversity will moderate the relationship between capital or external contract motives and level of earnings management or any unethical accounting practices. I expect that the more diverse a firm's TMT, the less unethical accounting behavior like earnings manipulation. I focus on variations in attributes of top managers' diversity moderating effects on earnings management, instead of examining the effects of diversity by these characteristics.

Figure 1

Research Model

Moderators

| **TMT Diversity Attributes** |
| TMT Risk diversity (Age and Tenure) |
| TMT Knowledge diversity(education) |
| TMT Values diversity(Political Affliation and cultural) |
| TMT Gender diversity |

Drivers

Capital Market Motives

| Seasoned Equity offerings - Liquidity |
| Bonus Incentives-ROA |
| Performance - Tobins Q or ROA |

DV

| **Earnings Management** |

External Contract Motives

| Debt Convanant-Financial leverage -debt |

Control Varlables

| Firm Size |
| Revenue volatility |
| Cash flow volatility |
| Operating Circle |
| Sales Volatility |

Source: Geletkanycz and Sanders (2004) expand the general gist to provide a drawing of (then) current knowledge of upper echelons theory

Theories and Hypotheses Formulations

Cognitive theory posits that expectations and emotions determine the behavior of human beings. This theory assumes that the individual remembers based on what they know, and so people will solve problems based on their memories of past experiences. Based on cognitive theory, accounting malpractices will diminish when accounting personnel perform their duties according to what is expected of them by top management (Merkl-Davies & Brennan, 2011). The emotions of accounting personnel will guide their actions; they will act on what they feel is right or wrong. According to cognitive theory, people from different backgrounds based on the expectation and feelings, will not exaggerate financial information (Merkl-Davies & Brennan, 2011).

TMT diversity variables, such as gender, ethnicity, and education, will result in divergent opinions regarding accounting malpractice. These ideas will come from the variety of views in terms of individuals' expectations and emotions. Thus, the right financial information will be reported based on what is right, which intend diminishes unethical accounting malpractice.

Hambrick and Mason's (1984) conceptual work on managerial qualities and organizational outcomes laid the basis for what has since become a significant stream in the field of research concerning heterogeneity and homogeneity in the upper echelons of management. Essentially, upper echelons theory argues that senior managers make strategic choices based on their cognitions and values and that the organizations they lead are reflections of their behaviors and preferences (Hambrick, 2007; Hambrick & Mason, 1984). Hambrick and Mason (1984) used upper echelons theory to explain how the demographic diversity of TMTs impact a firms' outcomes. The conduct and personal attributes of TMTs influence financial reporting quality. Managers' diversity in gender, tenure, education, age, and functional background are some features that also influence the quality of accounting information. The effects of TMT dynamism in management and decision-

making in accounting and finance can explain upper echelons theory (Hambrick, 2007; Hambrick & Manson, 1984).

Decision-making consists of numerous models in an organization (Courtney, 2001; Daft & Weick, 1984; Nutt, 1984; Sun & Naveh, 2004; Van de Ven & Ferry, 1980). The paths in the decision-making process include identification of formulation of a problem, followed by discovery, ratification, and possible solutions to the problem, and last, implementation of a solution. Each phase of the decision-making process will influence individual attributes, which is an integral part of ethics. Regarding earnings quality, ethics plays a crucial role in the TMT decision-making process (DeGrassi et al., 2012).

The quality of earnings management depends on the efficiency of the decision-making process provided by the TMT. The senior management team includes persons who reside in the upper echelons of the organization, who are charged with the responsibility of managing the firm and setting its strategic agenda (Carpenter et al., 2003). The primary function of the executive board is to set the strategic direction for the firm's daily operations. Due to their position at the top of the organizational hierarchy, senior management have the ability to misrepresent figures through earnings manipulations during the communication process with the company's stakeholders (Wan Mohammad et al., 2016). Given the critical nature and importance of the executive board as the principal governing body of a firm and its mandate to make the day-to-day corporate decisions, many studies have focused on the link between TMTs and firm performance.

Researchers have suggested that most variables of diversity (age, gender, culture, etc.) could have a significant impact on firm performance (Nielsen & Nielsen, 2013; Parola et al., 2015; Sila et al., 2016; Talke et al., 2010). Hence, one of the main ideas in the literature is the assumption that the efficiency of leadership can be increased by manipulating the top managers' demographic

characteristics, such as gender, age, background, education level, and organizational tenure (Sila et al., 2016). Researchers also agree that leadership diversity could have an impact on earnings management (Adams et al., 2009; Elias, 2004). Therefore, there can be two opposite states of diversity in the TMT. The first state is closer to homogeneity (similarity) of the senior executive members. The second state is closer to heterogeneity (dissimilarity) of the company's leaders.

In this study I examine the diversity composition of the TMT's either heterogeneous or homogenous group, which will make (un)ethical decisions in managing its firm's earnings. The main focus of TMT diversity impact on earnings management is the decision-making process in homogenous and heterogeneous teams. The subject of homogeneity or heterogeneity of top executive teams has been of great interest to both academic researchers and managers. The psychological dimensions of cognition values and perceptions are difficult to measure directly. Hambrick (2007) recommended that future studies examine the observable background characteristics of all TMT members. Pfeffer (1993) stated that the demographic composition of a group could result in variations in communication, cohesion, and integration depending on whether the TMT members aligned themselves to be similar to or dissimilar from the others in the group. Because of these studies, most upper echelons research has been conducted using demographic variables as proxies for cognitive capacities in attempts to comprehend the influence of TMT attributes on organizational processes and results.

There appears to be some doubt as to the value of TMT diversity in the organizational setting. One line of reasoning suggests that TMT demographic diversity decreases internal cohesion, communication, consensus, social integration, and cooperation, and increases group identification. TMT demographic heterogeneity provides a variety of opinions and stimulates debate and the use of various abilities and comprehensive decision-making, which positively

impact firm performance (Ararat et al., 2015; Parry, 2014; Shukeri, et al., 2012; Watson et al., 1993).

Smith et al. (1994) examined the effects of TMT demography and TMT processes (social integration, informality of communication, and frequency of discussion) on organizational performance in a sample of 53 hi-tech firms. The study found that TMT heterogeneity concerning industry experience was directly and negatively related to return on investment and sales growth. The study suggested that the more diverse the industry experience of TMT members, the more different the group, and thus the more effort required to coordinate and monitor strategic decisions, which would take the focus from the organization's performance. Also, industrial heterogeneity may negatively relate to informal communication, which adversely affected TMT social integration.

Attributes such as gender, education, age, and tenure of the top management impact organizational functioning and the strategic decisions of an organization, including regarding ethical issues like earnings management. Firm management has a critical role in the financial performance of the organization they are mandated to operate through the decision-making process, according to the upper echelons theory (Finkelstein & Hambrick, 1996). Furthermore, Hambrick and Mason (1984) mentioned that cognitive and behavioral attributes such as education and gender affect top management's strategic choices, including ethical decisions like the earnings quality reporting process. Studies show that more observable traits such as education, background, and organizational tenure impact decision-making by the TMT (Sila et al., 2016).

When top managers are faced with issues like managing earnings, they act based on their cognitions, values, and perceptions, which is the core idea of the upper echelons theory. The top management assesses or interprets the issues arising from their day-to-day operations based on

their own attributes, such as their gender, education, and tenure. Hambrick (2007) stated that the upper echelons theory is in line with the limit of bounded rationality. However, since executives' psychological constructs are difficult to measure the theory posits that observable characteristics such as gender, age, work experience, education, cultural background, and political affiliation are reasonable representations for the variances underlying their thoughts, values, and perceptions (Carpenter et al., 2004). Firm financial success, according to both researchers and practitioners, depends on leadership diversity. Management diversity plays a critical role in the strategic business decision-making process for current and future market movements (Qi et al., 2018).

Capital Market Motives (Profitability, Return on Assets, Liquidity)

For an organization to achieve the objective of improved short-term stock price performance, some managers have employed earnings management manipulation in the organization's financial reports (Mangala, 2017). Due to the sensitivity of stock prices, investors evaluate the company's market position by the earnings benchmarks. Unscrupulous managers, therefore, try to increase short-term stock prices by managing the earnings reported in the company's financial statements. Most of this research was conducted at corporate events such as IPOs, seasoned equity offerings, and management buyouts (Samudhram et al., 2010; Teoh et al., 1998a; Yoon et al., 2015).

IPO firms are involved in more income-increasing earnings management activities than non-IPO firms. But the IPO firms show weak earnings and stock performance in subsequent years after such activities (Ahmad-Zaluki et al., 2011; Ahorany et al., 1993; Miloud, 2013). Recently, Maheshwari and Agrawal (2015) confirmed that graded IPOs indicate lower earnings management compared to non-graded IPOs. Also, earnings management is lower in the highest graded IPOs than in the small, graded IPOs.

Firms revise their earnings upward around seasoned equity offerings to increase the value of the shares in the capital market and decline their earnings in later years due to the reversal of discretionary accruals (Caton et al., 2011; Daniel et al., 2008; Rangan, 1998; Teoh et al., 1998b). Rao and Dandale (2008) conducted a study with Indian firms that were undergoing the process of equity offerings and found that the firms overstated their earnings temporarily during the offerings. Similarly, some authors have found significant evidence that managers understated earnings before the announcement of a management buyout (Begley et al., 2003; Brown et al., 2009; Perry & Williams, 1994). Conversely, De Angelo (1986) did not find substantial evidence of understatement of revenues before management buyout.

Another driver for companies to participate in earnings management is the desire to meet the expectations of stock market analysts, because investors often make decisions based on the analysts' expectations. When managers' bonuses are tied to the firm's earnings, management may manipulate accruals either upward or downward to increase their compensation (Healy, 1985; Holthausen et al., 1995). When the bonus is paid to the top executives after the level of earnings has reached the bonus cap, management may engage in income-decreasing earnings management or hold onto current earnings until the next period, since no additional bonus will be paid. The extra revenue is saved for a future bonus. The earnings-based bonus plan encourages top management to alter financial statements to boost their compensation (Healy, 1985; Holthausen et al., 1995).

In a related study, Zhang (2009) stated that on average, CEOs who have long tenure with an organization report less aggressive earnings compared to CEOs with short tenure. Long-tenure GEOs at the beginning of their term tend to inflate their earnings to build their reputation, after which they will report less aggressive earnings until their last year before leaving the office.

Last-year earnings give the departing GEOs short-term benefits such as higher current period compensation and higher pension annuity. Dechow and Sloan (1991) reported that CEOs in the final years of their service spend less on research and development in order to increase their reported earnings, because their retirement benefits are based on the compensation received in their last years with the company.

I will use performance measured by return on assets (ROA) in the regression model for this study, as good performance may lead to a low incentive to manage earnings (Doyle & Ge, 2007a). I will examine performance using ROA calculated as net income divided by total assets (Finkelstein & Boyd, 1998; Ridge et al., 2014; Schmalensee, 1985).

The use by some authors of ROA to control the effects of current performance on the creation of discretionary accruals has found a negative relationship between ROA and earnings management (Kothari et al., 2005; Wassimullah et al., 2010). Managers of poorly performing firms are more likely to engage in manipulation of earnings. Current performance from past may lead managers to use discretionary accruals. Taking these findings together, I propose the following hypotheses:

Hypotheses for This Study

Hypotheses—Direct Effects (ROA & Debt) and Earnings Management

H1: *There is a positive association between capital market motives (ROA) and earnings management.*

ROA: *Measured by net income divided by lagged total assets at year-end.*

H2: *There is a positive association between external contract motives (debt) and earnings management.*

Debt: *Measured by the ratio of total debt to total assets at year-end.*

Hypotheses—Moderating Variables and Earnings Management

H3: *TMT gender diversity will moderate the relationship between capital market motives (ROA) and the level of earnings management, such that the relationship will weaken in conditions of higher variations of TMT gender diversity.*

H4: *TMT gender diversity will moderate the relationship between external contact motives (debt) and the level of earnings management, such that the relationship will weaken in conditions of higher variations of TMT gender diversity.*

H5: *TMT knowledge diversity (education) will moderate the relationship between capital market motives (ROA) and the level of earnings management, such that the relationship will weaken in conditions of higher TMT knowledge diversity.*

H6: *TMT knowledge diversity (education) will moderate the relationship between external contact motives (debt) and the level of earnings management, such that the relationship will weaken in conditions of higher TMT knowledge diversity.*

H7: *TMT values diversity (political affiliation and culture) will moderate the relationship between capital market motives (ROA) and the level of earnings management, such that this relationship will weaken in conditions of higher TMT values diversity.*

H8: *TMT values diversity (political affiliation and culture) will moderate the relationship between external contact motives (debt) and the level of earnings management, such that this relationship will weaken in conditions of higher TMT values diversity.*

H9: *TMT risk diversity (age and tenure) will moderate the relationship between capital market motives (ROA) and the level of earnings management, such that the relationship will weaken in conditions of higher TMT risk diversity (age and tenure).*

H10: *TMT risk diversity (age and tenure) will moderate the relationship between external contract motives (debt) and the level of earnings management, such that the relationship will weaken in conditions of higher TMT risk diversity (age and tenure).*

External Contracts Motives (Financial Leverage [Debt])

Lenders often enforce some financial limits in order to maintain a specified level of reported accounting figures and ratios that assure them a firm will repay its borrowings. Therefore, firms with a considerable portion of debt in their capital structure have an incentive to alter their accounting data using earnings management to avoid breaching their covenant. Dechow et al.'s (1996) study on some firms concluded that managers performed earnings management practices to prevent debt covenant restrictions and also to raise financing from external sources at low cost. Similarly, Defond and Jiambalvo (1994) examined a sample of 94 debt covenant violation firms and reported that the sampled firms used accruals to accelerate their earnings before the covenant violation year. Recently, Nagar and Sen (2016) revealed that financially distressed firms in India manipulated earnings to avoid defaulting on their debt obligations. Healey (1985) also theorized that a debt contract can prompt the selection of discretionary accounting policies. Zimmerman (1986) stated that executives are likely to pick income-increasing methods of accounting when their firms have high debt ratios.

The debt covenant premise asserts that managers whose firms are closer to defaulting on their debt are more likely to shift their earnings from a future period to the current period. When net earnings are higher, the probability of technical default on the debt is likely to be reduced. In

practical terms, when firms see the potential of defaulting on their debt, they tend to manage their earnings to prevent debt violation. The above literature leads to the following proposed hypothesis:

H2: *External contract motives (debt) will positively be associated with earnings management.*

The next factor that is expected to have an impact on the quality of executives' decisions is the length of the leader's tenure. Researchers agree that length of tenure influences managers' cognitive principles, and therefore affects earnings management strategy. Longer tenure allows the development of better communication and mutual understanding between senior managers, thus ensuring a lower level of conflict between them. For instance, Wiersema and Bantel (1992) discovered that the average executive tenure at companies that had gone bankrupt was comparatively shorter than the average executive tenure at organizations that were successful. Under these circumstances, leaders' tenure serves as an indicator of the quality of the organizational experience. Hence, a positive relationship between the company's success and its executives' tenure explains the fact that the longer managers work as a team, the better they understand the company's policies and procedures. Therefore, managers with longer tenure usually make fewer mistakes in their strategic decision-making process, which is also reflected in their earnings management strategy.

An executive's age is considered an essential factor that impacts the quality of strategic decisions. Older leaders tend to choose more conservative strategies, and thereby choose less risky approaches. Hence, older executives are steadier and implement a conservative strategies of earnings management. Prendergast and Stole (1996) explained this relationship between age and management style and stated that younger managers prefer to exhibit overconfidence in the organizational decision-making process, which consequently increases the level of earnings manipulations. Older leaders usually have a higher level of reputation compared to younger ones

and prefer to choose more ethical steps to prevent the threat of affecting their status by manipulating earnings management practices. For moderating effects, more aged leaders would likely prefer to keep their reputation than receive a monetary reward. Also, as a result of their longer period working in the firm (tenure), they have already acquired wealth through bonuses and other compensation. Ali and Konrad (2017) supported this assumption and reported that older members of a TMT would not destroy their reputation for monetary rewards due to the fact that they had already acquired wealth through their longer service, as compared to relatively younger members of the TMT. Hence, an older TMT will not engage in unethical earnings management but rather will keep their hard-built reputation earned over years of service. To test the moderating effect of TMT risk diversity, the literature combined with upper echelons theory led to the following proposed hypotheses:

H3: *TMT risk diversity (age and tenure) will moderate the relationship between capital market (ROA) motives and the level of earnings management, such that the relationship will weaken in conditions of higher TMT risk diversity (age and tenure).*

H4: *TMT risk diversity (age and tenure) will moderate the relationship between external contract motives (debt) and the level of earnings management, such that the relationship will weaken in conditions of higher TMT risk diversity (age and tenure).*

Ethical considerations are essential in a variety of accounting and business decisions. Not only will maintaining this focus avoid potential economic and legal costs due to the consequences of unethical behavior, it will also uphold the interests of the shareholders. Managers of public firms might manipulate earnings for their own dishonest, opportunist objectives. According to Frankie et al. (1997), gender differences play a significant role in ethical and economic decision-making. Their study (1997) explained that women and men experience pressure in different ways in

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organizational settings. For instance, in the same organizational position, women are likely to act differently than men. Similarly, women are more likely to adopt ethical behavior than men.

If a company's financial information is distorted by false earnings reported on the financial statements, the external users are deceived, the information in the financial statements is less useful, and stakeholders' resource allocation is affected (Healy & Wahlen, 1999). Management has the ethical obligation and professional responsibility to report quality earnings in a reasonable manner in the interest of the stakeholders.

Women tend to show higher ethical behavior and more socially desirable standards than their male counterparts in the same positions in organizational settings. Women are more ethical in the workplace and less likely to engage in unethical behavior to gain financial rewards (Frankie, 1997).

Prior diversity literature suggests that most variables of diversity (age, gender, culture, etc.) positively or negatively impact a firm's performance (Nielsen & Nielsen, 2013; Parola et al., 2015; Sila et al., 2016; Talke et al., 2010). Carter et al. (2003) stated that the proportion of women on boards between Fortune 1000 firms and Tobin's Q is positive and significant after controlling for size, industry, and other corporate governance measures. Heminway (2007) found that females are more truthful than men and are unlikely to manipulate corporate financial data and other disclosures. Peni and Vahamaa (2010) provided evidence that female CFOs participate in less earnings management than male CFOs. Females in a TMT may be more conservative than their male counterparts and, therefore, would not engage in unethical manipulations of earnings. The analysis of the literature concludes that factors such as gender, education, age, and tenure impact the process of earnings management. Prior research suggests that female executives are less risk-taking in questions regarding earnings management (Adams & Ferreira, 2009; Barua et al., 2010;

Sharma, 2016). Females tend to make less aggressive decisions related to discretionary accruals and earnings management (Xiong, 2016).

Women in leadership roles usually have better reputations than their male counterparts, and they prefer to choose more ethical behavior due to the threat of their status being affected by the implementation of earnings management practices. For moderating effects, women in leadership roles are more likely to keep their reputation over monetary rewards. Women tend to show higher desirable ethical standards than their male counterparts in the same positions in organizational settings. Women are more moral in the workplace and less likely to engage in unethical behavior to gain financial rewards (Frankie, 1997). Consequently, women will not engage in dishonest earnings management but will keep their hard-won good reputation. To test the moderating effect of TMT gender diversity, the literature combined with upper echelons theory leads to the following proposed hypotheses:

H5: *TMT gender diversity will moderate the relationship between capital market motives (ROA) and the level of earnings management, such that the relationship will weaken in conditions of higher variations of TMT gender diversity.*

H6: *TMT gender diversity will moderate the relationship between external contact motives (debt) and the level of earnings management, such that the relationship will weaken in conditions of higher variations of TMT gender diversity.*

Further, the literature analysis allows us to discover that an individual's education level also could contribute to the quality of top managers' decisions regarding earnings management policies. Researchers agree that, to some extent, an individual's level of education reflects their personal knowledge and skills (Xiong, 2016). Therefore, it is assumed that executives with a

relatively higher education level have a more systematized knowledge system and produce more diverse thoughts on the range of existing business issues. Researchers believe that due to the high potential risk of earnings management activity, executives with a higher level of education will understand the potential severe consequences of such behavior, such as the multiple ethical issues it involves. As a result, it is assumed that better educated leaders will make more ethical decisions than their less-educated counterparts and prevent the practice of earnings management. Finkelstein and Hambrick (1997) stated that holders of Master's in Business Administration degrees are risk averse and also part of the business elite that values conformity and conventionality. Also, according to Bamber et al. (2010), CEOs with an accounting and business education are cautious and will not engage in earnings manipulation because it could ruin their reputation. These findings suggest that TMTs with diverse knowledge will keep their reputation rather than engage in the unethical accounting practices of managing earnings. Hence, to test the moderating effect of TMT knowledge diversity, the literature combined with upper echelons theory leads to the following proposed hypotheses:

H7: *TMT knowledge diversity (education) will moderate the relationship between capital market (ROA) motives and the level of earnings management, such that the relationship will weaken in conditions of higher TMT knowledge diversity.*

H8: *TMT knowledge diversity (education) will moderate the relationship between external contact motives (debt) and the level of earnings management, such that the relationship will weaken in conditions of higher TMT knowledge diversity.*

Researchers have also studied cultural diversity and its impact on earnings management practices. Qi and Tian (2012) believed that there is an interrelation between social values and accounting values, which influence each other. Thus, societal values in culture provide a fair

indication of the accounting values and practices in that culture. In turn, culture influences bank lending, risk-taking, and earnings management behaviors in addition to accounting values and practices. In their survey, Kanagaretnam et al. (2011) suggested that cultural values have an impact on financial reporting practices in many firms across the globe. For instance, according to Kanagaretnam et al. (2014) there is a significant cultural influence on the lender's risk-taking propensity and accounting conservatism. Researchers have discovered that individualism has a positive relationship with the lender's risk-taking behavior and is negatively associated with accounting conservatism. Republican managers are expected to implement more conservative corporate strategies, which is consistent with their conservative individual ideologies (Hutton et al., 2015). Likewise, similar political ideologies may result in connections among people. The Republican Party espouses a cautious viewpoint, which implies fewer stages of leverage, less capital, fewer R&D disbursements, less risky investments, and higher profitability (Hutton et al., 2015).

Hong and Kostovetsky (2012) discovered that managers' individual partisan preferences influence their investment decisions. Democratic mutual fund managers are likely to hold fewer of their portfolios in companies that are considered collectively irresponsible (e.g., tobacco, guns, defense firms, or companies with bad employee relations or diversity records) compared to other mutual fund managers who identify with the Republican party or no party at all. Given the connection between personal philosophy and political choice and the association between personal philosophy and fiscal conservatism, we can presume political decisions and economic conservatism to be related. As a result, fiscal conservativeness, as revealed through political preferences, could be a sound predictor of authority tendency (Hutton et al., 2014).

Likewise, while managers endeavor to maximize stockholder value, variety in political choice could lead to the exact opposite in understanding regarding downside risk and growth opportunities. This reasoning does not inevitably imply an agency problem but merely posits that managers' personality traits influence their decisions (Hutton et al., 2014).

Meanwhile, due to their more conservative character traits, Republican managers are likely to be more risk-averse and debt-averse than Democratic or moderate managers in their financial decisions. Consequently, Republican managers may be more prudent in their use of debt investment and in engaging in risky activities, including earnings management (Hutton et al., 2015). Republican managers will likely keep their reputation with their values than engage in unethical manipulation earnings for personal gain. Hence, to test the moderating effect of TMT values diversity literature combined with upper echelons theory, I propose the following hypotheses:

H9: *TMT values diversity (political affiliation and culture) will moderate the relationship between capital market motives (ROA) and the level of earnings management, such that this relationship will weaken under conditions of higher TMT value diversity.*

H10: *TMT values diversity (political affiliation and culture) will moderate the relationship between external contact motives (debt) and the level of earnings management, such that this relationship will weaken under conditions of higher TMT value diversity.*

Researchers agree that executive boards that include people of different ages, educational levels, and tenure can achieve positive outcomes in business performance (Leszczynska, 2018). An executive's board's diversity by age, education level, and tenure may not be as efficient as the

diversity created by gender. Consequently, in this research I focus on the moderating effect of

TMT diversity impact on earnings management.

CHAPTER III

METHODS

Empirical Methodologies

The financial data I used for this study was collected from the Compustat databases for the S&P 500 publicly traded firms for the years 2008 to 2018. I used data from this period in order to measure the earnings behavior of firms during the meltdown and post-recession periods. The key variables for each firm include sales, assets, gross property and plant depreciation, accounts receivable, accounts payable, total assets, current assets, and current liabilities. I collected the top management team (TMT) personal characteristics from the Boardex database. The study parameters proxying for the top management category are the senior, mostly highly paid officers who are also responsible for signing off on financials to external users. The data for the profile diversity of the TMT I collected manually from the Bordex database, which contains information on age, gender, education, professional background, and employment history. The political affiliation data came from a website called opensecrets.org. I assessed the TMT diversity variables of gender, age, and tenure as proxies for (risk diversity), political affiliations and cultural diversity as proxies for (values diversity), and educational background as proxy for knowledge diversity for the moderating variables. I examined gender diversity as the number of women to men in the TMT. For education I looked at the level of knowledge of each senior management and how that can impact decisions on earnings management. Education level (knowledge diversity) measures the diversity in the highest academic qualification of members of the TMT. Last, cultural diversity

indicates the top management person's original place of birth, using the country where they received their bachelor's degree as a proxy for country of birth.

Earnings Management Techniques

Earnings management occurs when managers choose in their financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers (Healy & Wahlen, 1999, p. 365). There are two main types of methods managers use to manipulate the results of financial reports.

Accrual-Based Earnings Management

Accruals refers to one of the earnings management techniques commonly used by executives to manage earnings outcomes. Accruals are the difference between the net cash inflow from a firm's operating results and the profit reported in the firm's income statement, which may be either nondiscretionary or discretionary (Mas et al., 2018). According to Dechow and Skinner (2000), accrual management of earnings refers to changing accounting methods or making estimates within the generally accepted accounting principles. Hence, changes to the accrual process are performed by an executive with opportunistic aims and cover various estimates and assessments. For instance, Barton (2001) examined the use of derivatives and discretionary accruals as a means of managing earnings. The study found that management can use hedging by smoothing cash flows, by either decreasing or increasing accrual. Barton's (2001) survey showed that firms with lower absolute levels of discretionary accruals with derivative portfolios partially substitute derivatives and discretionary accruals for earnings smoothing. Therefore, after the end of the fiscal year, top managers could manipulate the results. However, accrual-based earnings

management can be detected by auditors and regulators (Mas et al., 2018), which causes future problems for the company.

Dependent Variables. In this study I use a modified cross-sectional Jones model to properly discover the relationship between diversity characteristics and earnings management. My choice of this model is based on prior research by Dechow et al. (1995). In their paper, they evaluated several accrual-based models for detecting earnings management and found that the modified cross-sectional Jones model is the most powerful method of detecting earnings management. More recently, additional researchers have also used the modified cross-sectional Jones model in their respective studies (Cohen & Zarowin, 2010; Klein, 2002; Roychowdhury, 2006; Zang, 2012). The modified Jones model is estimated as follows for discretionary accruals:

$$\frac{TA_{it}}{A_{it-1}} = \propto_0 + \propto_1 \frac{CFO_{it-1}}{A_{it-2}} + \propto_2 \frac{CFO_{it}}{A_{it-1}} + \propto_3 \frac{CFO_{it+1}}{A_{it}} + \propto_4 \frac{\Delta REV_{it}}{A_{it-1}} + \propto_5 \frac{PPE_{it}}{A_{it-2}} + \varepsilon_{it} \ (1)$$

where i is the company; t is the year; TA is total accruals, measured as the difference between income before extraordinary items and operating cash flows; A is total assets; CFO is cash flow from operations, ΔREV is a change in company revenue; PPE is firm i's gross property plant and equipment; and ε_{it} is the error term.

Real Earnings Management

The next earnings management type is real earnings management, which includes changes in real activities. According to Mas et al. (2018), to manage earnings means to change the time or structure of operations, investments, and financial decisions. Hence, this type of earnings management includes manipulation of real activity to gain specific outcomes. There are several ways of conducting real earnings management. The first way comprises sales manipulation, which

is performed by managers to temporarily increase sales during a given, and thereby report high revenue for that period. For instance, managers may offer excessive product price discounts or provide more favorable credit terms than usual, increasing the sales volume and profit for that period (Roychowdhury, 2000). The second way involves the reduction of discretionary expenses. Earnings can be managed by increasing inventory production and, thereby, reducing the cost of goods sold. Also to decrease discretionary expenses, a company could cut costs on research and development (R&D), maintenance, advertising, or general and administrative expenses, especially in periods where such expenditures do not directly lead to revenue and profits (Bereskin et al., 2017). Finally, the company could also engage in overproduction, which causes the fixed cost per unit of product to be lower (Mas et al., 2018). The higher production level allows for improving the company's profit margins by keeping discretionary spending down. In these ways, the implementation of the real earnings management technique can help the company to temporarily grow its sales and profit during a given period.

These manipulations cause significant barriers for auditors and regulators to detect any changes conducted using real earnings management (Bereskin et al., 2017), and it is more easily disguised as a regular business activity (Mas et al., 2018). However, these steps could have adverse effects in the long term, such as decrease in capital investment, decrease in future cash flow, reduction of R&D expenses, reduction of marketing costs, and increased price discounts. Therefore, although it improves the company's cash flow and profits in the current period, the real earnings management strategy reduces its future cash flow.

Measuring Real Earnings Management. To measure real earnings management, Xiong (2016) created a model with three indicators. The first indicator is calculated by applying for the following determinants:

$$\frac{PROD_{it}}{A_{it-1}} = \propto_0 + \propto_1 \frac{1}{A_{it-1}} + \propto_2 \frac{SALE_{it}}{A_{it-1}} + \propto_3 \frac{\Delta SALE_{it}}{A_{it-1}} + \propto_3 \frac{\Delta SALE_{it-1}}{A_{it-1}} + + \varepsilon_{it} \ (2)$$

where i is the firm; t is the year; PROD is the sum of the cost of goods sold and the change in inventory; SALE is the firm's sales turnover; and A is the firm's total assets.

The next indicator of the model for calculating the level of real earnings management includes abnormal discretionary expenses. These expenses can be calculated by the following formula:

$$\frac{EXPENSE_{it}}{A_{it-1}} = \propto_0 + \propto_1 \frac{1}{A_{it-1}} + \propto_2 \frac{SALE_{it-1}}{A_{it-1}} + \varepsilon_{it} \ (3)$$

where the EXPENSE indicator illustrates expenses for selling and administration.

The third indicator of the Xiong (2016) model covers the abnormal operating cash flow estimation. According to the author, the abnormal operating cash flow estimation can be conducted using the following determinants: Translating these earnings management proxies into measurable models, following Roychowdhury (2006) by first running the following regression to determine the coefficients and the intercept of the model

$$\frac{CFO_{it}}{A_{it-1}} = \propto_0 + \propto_1 \frac{1}{A_{it-1}} + \propto_2 \frac{SALE_{it-1}}{A_{it-1}} \varepsilon + \propto_3 \frac{\Delta SALE_{it}}{A_{it-1}} + \varepsilon_{it} \ (4)$$

where CFO is the operating cash flow.

Hence, on the basis of the previously illustrated equations, the model for assessing the overall effects of real earnings management can be expressed by the following formula:

$$REM_{it} = EM_{PROD_{it}} - EM_{CFO_{it}} - EM\_EXPENSE_{it} \ (5).$$

The interpretation of the model results is because the higher value of REM illustrates a lower level of real earnings management.

Measurement of Variables for Earnings Management. In this study I tested financials to detect earnings management by employing discretionary accrual and real earnings management used in the earnings management literature. Accrual-based earnings management seeks to hide actual economic performance by changing accounting methods or estimates within the generally accepted accounting principles (Dechow & Skinner, 2000). Conversely, real earnings management alters the execution of real business transactions (Roychowdhury, 2006). Accrual-based earnings management occurs at the end of the financial period, while real earnings management is an ongoing process throughout business transactions.

Because managers are able to manipulate income and balance sheet amounts to move earnings between periods, researchers must focus on the discretionary part of total accruals (Jelinek, 2007). The earnings management literature has several models to measure discretionary accruals. The Healy (1985) model assumes that discretionary accruals are equal to total accruals, as managers engage in earnings management in each reporting cycle. The Ronen and Sadan (1981) model tests how firms engage in smoothing their reported earnings to minimize fluctuation of earnings. Their model assesses the correlation between operating income and time. The DeAngelo (1986) model uses prior period total accruals scaled by lagged total assets to test for nondiscretionary accruals. This model assumes that the nondiscretionary part of the total accrual remains continuous (constant). The Jones model (1991) concludes that nondiscretionary accruals are not constant but can vary with changing economic situations.

Prior studies of earnings management have used discretionary accruals as a means of measurement (Dechow et al., 2010; Defond & Jiambalvo, 1994; Healy & Wahlen, 1999). For this

study I employed the modified Jones model (1991) used by Defond and Jiambalvo (1994). This is in line with other studies (Dechow et al., 2010; Defond & Jiambalvo, 1994; Healy & Wahlen, 1999) that measured the difference in net income before extraordinary item and cash flow as total accrual. GVI codes were used to regress complete accrual changes and all the firm's level of plant, property, and equipment.

$$\frac{TAC_{it}}{A_{it-1}} = \alpha_1 \left(\frac{1}{A_{it-1}}\right) + \alpha_2 \left(\frac{\Delta REV_{it}}{A_{it-1}}\right) + \alpha_3 \left(\frac{PPE_{it}}{A_{it-1}}\right) + \varepsilon_{it}$$

where TACit represents total accrual for firm i during the year; Ait represent total assets for the year for the firm; REVit shows the difference in sales between year t-1 and year t for firm I; and PPEit denotes plant, property, and equipment for organization i in year t.

Regression coefficients from Equation (1) are used to calculate the nondiscretionary accrual, (NDA), and modified change in sales is found by subtracting the difference in account receivables (RECit), as shown in Dechow et al. (1995):

$$\frac{NDA_{it}}{A_{it-1}} = \alpha_1 \left(\frac{1}{A_{it-1}}\right) + \alpha_2 [(\Delta REV_{it} - \Delta REC_{it})/A_{it-1}] + \alpha_3 \left(\frac{PPE_{it}}{A_{it-1}}\right)$$
.

Discretionary accrual (DA) as the residual is then calculated following Dechow et al. (1995):

$$\frac{DA_{it}}{A_{it-1}} = \frac{TAC_{it}}{A_{it-1}} - \frac{NDA_{it}}{A_{it-1}}$$

I used the absolute discretional accrual (AB_DA) as the dependent variable. This method has been used in prior studies for detecting earnings management (Dechow et al., 1995; Defond & Jiambalvo, 1994; Dichev, 2002; Healy & Wahlen, 1999; Kothari et al., 2005).

Other authors have employed performance-matched discretionary accrual as their measure of management of earnings (Dechow & Dichev, 2002; Kothari et al., 2005). Francis (2004) stated that the impact of earnings management could affect a firm's precise operation and financial qualities. This study used control variables like firm size, leverage, book to market value, operating loss, and sales growth. The study control for industry effect due to macroeconomic conditions has the potential of skewing the results (Dechow et al., 1995; Defond & Jiambalvo, 1994; Dichev, 2002; Healy & Wahlen, 1999; Kothari et al., 2005).

Measurement of TMT Diversity Attributes (Moderating Variables)

For this study I used the Blau index as the method for diversity measurement, consistent with prior literature (Harrison & Klein, 2007; Krishnan & Park, 2005). Since gender, education, and functional background are categorical variables, the Blau index is used for the analysis. To provide a consistent measure of within-group heterogeneity I used diversity variables such as gender, job, tenure with current company, total tenure, political affiliation, and culture, following the approach of Miner et al. (2003) and using Blau's index (also known as Teachman's index; Teachman, 1980). Blau's index represents the proportion of TMT members in the category and k represents the number of TMT diversity attributes to measure the categorical differences between the group members:

$$B = 1 - \sum_{i=1}^{k} Pi\text{^}2,$$

where Pi represents the proportion of TMT members in the ith category and k represents the number of TMT diversity attributes to measure the categorical differences between the group members.

I used TMT risk diversity proxy (composite of age and tenure), the variations of female numbers on the TMT (gender) as the proxy for gender diversity, knowledge diversity (education)

as proxy and TMT values diversity proxy (composite of political affiliations and culture), Democrat or Republican. Blau's index is widely used in the measure of heterogeneity for diversity and has also been used in prior research (Wieserma & Bantel, 1992).

Blau's index is calculated by adding the squared proportions of the TMT members categorically and summing them up, then subtracting from 1. The minimum value of Blau's index is 0, and the maximum value always depends on the number of categories (i) of a particular variable of interest. The maximum variable can be computed as $(i – 1)/i$ where i represents the number of TMT categories (Korff et al., 2009). When TMT diversity increases, the value of Blau's index increases. Theoretically, this means that the maximum value of Blau's index increases with higher qualitatively different categories.

My purpose in this study is to contrast the diverse demographics of TMTs across firms and to make comparisons. Therefore, I standardized the indices to permit contrasts among the groups by dropping the bloating effects on group size as well as within group size. The maximum value of the group diversity measurement is a function of group size and distribution of members. All normalized or standardized indices range from 0 to 1 (Korff et al., 2009).

I developed the coefficient of variation is by dividing the standard deviation of the risk diversity of the TMT members by the mean values of the TMT risk diversity. A high coefficient of variation indicates increased heterogeneity in terms of risk diversity. As a continuous variable, I calculated TMT risk diversity as the coefficient of variation using standard deviation, as documented in prior literature. The measurements of the difference was firm by firm to capture the yearly effects within each organization (Miner et al., 2003).

The coefficient of variation was developed by dividing the standard deviation of the ages of TMT members by the mean values of the ages of TMT members. A high coefficient of variation indicates increased heterogeneity in terms of risk diversity (age and tenure). As a continuous variable, I measured TMT diversity as the coefficient of variation using standard deviation, as documented in prior literature. The calculation of the diversity was done firm by firm to capture the yearly effects within each organization (Miner et al., 2003).

Hypothetically, this means that the maximum value of Blau's index increases with higher qualitatively different categories. The number of theoretical maxima for each diversity variable was derived and is shown in Table 1 below:

Table 1

The Theoretical Maximum Possible Values of the Diversity Variable Based on Blau's Index

Diversity variable	Categories (i)	Theoretical maximum
Gender	2	0.50
Cultural diversity	3	0.67
Job diversity	3	0.67
Current tenure	3	0.67
Total tenure	4	0.75
Age	4	0.75
Education	3	0.67
Political affiliation	3	0.67

Table A: The theoretical maximum possible values of the diversity variables based on Blau's index.

As noted in Table 1, the theoretical maximum of Blau's index for gender is 0.5, whereas the maximum value for cultural diversity is 0.67. These noted differences between the variables are only comparable when removed and corrected for these differences, and this was achieved by

standardizing Blau's index (B). The preferred statistical approach for this correction is detailed in Agresti and Agresti's (1978) index of qualitative variation, in which they multiplied Blau's index (B) by the maximum $i/(i-1)$ to get a standardized value that ranges from 0 to 1.

Research Design (Statistical Method)

For the I research estimated the models using generalized estimating equations (GEEs; Liang & Zeger, 1986), which is consistent with previous research on outcomes like CEO narcissism (Petrenko et al., 2015). This estimation technique derives maximum likelihood estimates while controlling for nonindependence of observation; the TMT variables are the moderating variables on earnings management. In prior research on earnings management using the cross-sectional version of the Jones model (1991), at least 10 observations were used for the regression.

To identify the moderating effect of TMT diversity on the relationship between capital motives/external contract motives and the level of earnings management, I used the GEE method in this study. I also tested the hypotheses using the following three regressions:

$EM=\beta0+ \beta1\text{capitalmotives}+\beta2\text{externalcontactmotives} + \text{ControlVar}+ \varepsilon$

$EM=\beta0+\beta1\text{capitalmotives}+\beta2\text{externalcontactmotives}+\beta3\text{TMTRISK}AC+\beta4\text{TMTValues}AC+\beta5\text{TMTgender}AC$
$+\beta6\text{TMTKNOWLEDGE}AC \text{ ControlVar}+ \varepsilon$

$EM=\beta0+(\beta1\text{capitalmotives}+\beta2\text{externalcontactmotives})*$
$(\beta3\text{TMTRISK}AC+\beta4\text{TMTValues}AC+\beta5\text{TMTgender}AC+\beta6\text{TMTKNOWLEDGE}AC)+\beta11 \text{ ControlVar}+ \varepsilon$

$\beta0$ represents the fixed intercept $\beta1$and $\beta2$ and are the average independent variables of the fixed slope on the earnings management across the firms, $\beta3$ $\beta4, \beta5, \beta6, \beta7, \beta8, \beta9$ and $\beta10$ quantify the effect of moderations on the fixed slopes. The variable EM is the proxy for earnings management that influences earnings quality. The variable $Profit it$ is the firm's profitability and was measured by the ROA, which is the net income divided by lagged total assets at year-end. The variable Lev

is a proxy for financial leverage, calculated as the ratio of the total debt to total assets at year-end. The variable *Liquidit* is a proxy for liquidity, which was calculated by receivables plus inventory minus accounts payable divided by total assets. Capital market motives (ROA and liquidity) and external contract motives (financial leverage-debt) multiplied by TMT diversity variables represent the interaction between TMT diversity and financial leverage, ROA and liquidity respectively. The variable ε represents the residual variance not explained by the independent variables captured by the model. The moderating effect of TMT diversity is detected from the fixed slopes $\beta3$, $\beta4$, $\beta5$, $\beta6$, $\beta7$, $\beta8$, $\beta9$, and $\beta10$. I expect the moderating fixed slopes to be significant.

Control Variables

To test the hypotheses, I included several control variables: performance measured by return on assets, growth measured by revenue growth, operating cycle of the firm, revenue volatility, firm size, industry, and cash flow from operation volatility. I controlled the variable "growth," as some studies have determined that high-growth firms have more earnings management opportunities than low-growth firms (Richardson & Sloan, 2005). I also controlled revenue volatility, cash flow volatility, and operating cycle, as these variables are well-known to impact the magnitude of discretionary accruals. Firms that exhibit high volatile revenue, high volatile cash flow, and longer operating cycles have a greater tendency to manage accruals (Dechow & Dichev, 2002). Additionally, I controlled solvency ratio. I added this ratio because it measures the ability of an enterprise to meet its debts and other obligations and indicates if the cash flow is sufficient to meet both the short-term and the long-term liabilities.

CHAPTER IV

RESULTS

Model and Estimation

In my research I estimated the models using generalized estimating equations (GEE; Liang & Zeger, 1986) consistent with previous research on outcomes like CEO narcissism (Petrenko et al., 2015). This estimation technique derives maximum likelihood estimates while controlling for nonindependence of observations in the panel data used in the analysis.

The top management team (TMT) variables are the moderating variables on earnings management. In prior research on earnings management, a cross-sectional version of the Jones model (1991) with at least 10 observations was used for the regression. The study used the three-digit code in order not to eliminate firms. The dependent variable was a discretionary accrual estimated using the GEE model. My research explores the effect of the moderating variables (TMT) on the calculated discretionary accruals. Thus, the discretionary accrual is regressed individually on the moderating variables. I used Hypotheses 1 and 2 for testing for the main effects (ROA and leverage), with the signed values of discretionary accruals utilized with the independent variables (ROA and debt) in the model. ROA is calculated as net income divided by lagged total assets at year-end. Leverage is calculated as total debt (both short and long) divided by total assets (debt ratio). The purpose of this process is to investigate whether accruals are managed downward or upward for performance (ROA) and leverage (debt) purposes. I used the natural log of debt for leverage in the study.

Descriptive Statistics and Correlations

This section of the study discusses sample descriptive statistics, followed by my hypotheses test results.

Descriptive Statistics

Panel A shows the descriptive statistics for selected income and balance items for the sample of S&P 500 firms in the United States. All variable definitions are shown in Appendix D. The statistical measure in Panel A has not been truncated. Therefore, the data used to calculate the measure includes outlier observations. The mean revenue of the firms in the sample is $198.50 million. The maximum revenue in the sample is $512,000 million, and the minimum is $39.19 million. The median revenue for the firms is $77.02 million. The mean net income of the firms is $16.07 million, and the maximum and minimum net income are $105,000 and $30.900 million, respectively. While some firms suffered losses, 95% or less of firms in the sample had net income equal to or less than $72.64 million. Most of the firms showed signs of profitability. The impact of leverage (debt) on earnings management is one of the main effects of the hypotheses for the study. Panel A shows that the mean long-term debt for the sample is $96.11 million. The minimum and maximum long-term debts are $0 and $377,317 million, respectively. The firms had total assets mean and median of $576.25 million and $145.01 million, respectively.

Panel B presents the descriptive statistics for the dependent and independent variables. I transformed the continuous variables (Dacc, ABDacc, and debt) to remove any outliers from the estimation model. The absolute mean value of discretionary accruals and the signed value of discretionary accruals (Dacc) are consistent with previous earnings management research. The mean absolute discretionary accrual is 0.24 with a minimum value of 0.000. The mean signed value of discretionary accrual is 0.00009. Debt is one of the main effects tested with earnings management in my model estimation to detect this unethical behavior. Financial leverage is total

debt divided by lagged total assets. The mean debt of 6.3 serves as an avenue to examine the impact of external contracts motives (financial leverage [debt]) on earnings management in the publicly traded firms.

Panel C shows the moderating variables that are the diversity attributes. In this study, the moderating variables are age, tenure, political affiliation, culture, gender, and education. I utilized Blau's index for variations with the TMT attributes, grouping the characteristics into four moderating variables. The TMT attributes (moderating variables) are risk diversity (a composite of the standardized Blau's mean of age and tenure); values diversity proxy (a composite of the standardized Blau's mean of political affiliation and culture); gender diversity; and knowledge (education) diversity. Risk diversity has a mean of 0.34. The minimum and maximum for the standardized Blau's index for all the moderating variables are 0 and 1, respectively. The values diversity mean is 0.25 and the knowledge diversity mean is 0.42.

Panel D represents the descriptive statistics for firm features used as control measures (variables) in the model. Revenue change has a mean of $632.02 million; that is the average increase in revenue for the firms, which shows that firms' revenue can increase significantly over time. The standard deviation of $70.43 shows how wide the variation in revenue change is from one firm to another. The operating cycle (OpeCycle) mean is 6.29 days, with minimum and maximum operating cycles of 4.69 and 14.78 days, respectively. Some firms tend to have shorter operating cycles than others. Firm size is the natural log of total assets, which is consistent with prior studies in the earnings management literature. Sales volatility and cash flow volatility are the standard deviations of cash flow and sales from operations over at least the last three years as control variables for the study.

Panel E represents the correlation matrices between the dependent variables, independent variables, moderating variables, and control variables. In this section I discuss the relationships among the different diversity variables, followed by a discussion of the correlations between earnings management and the diversity variables. Finally, I examine the correlations between the control variables and the various diversity variables. The correlations that are significant at least at a minimum 5% level of significance are indicated with an asterisk (*).

Cohen (1988) stated that a correlation of 0.322 is considered moderately strong based on a benchmark that suggests that correlation coefficients within the range of 0.1 to 0.23 equates to weak, 0.24 to 0.36 equates to moderately strong, and $=>0.37$ equates to strong. Also indicated in Panel E is the correlation between the moderating variables of value diversity and risk diversity. The associated correlation coefficient is 0.3340, and it is significant at least at the 5% level, which is moderately strong. Also, there is a correlation between the moderating variables of gender and values diversity. The correlation coefficient between these two variables is 0.0539, and it is both positive and significant, at least at the 5% level. Knowledge diversity and gender diversity also show positive significant correlation, and the associated correlation coefficient is 0.1235. While there were moderate correlations between a few of the diversity variables, the relationships between most of the diversity variables were very low, as shown in Panel E.

Overall, these diversity variables achieve different dimensions of diversity, so they have no multicollinearity with each other. The absolute discretionary accruals and signed discretionary accruals correlate with ROA, which is one of the main variables used in this study to detect earnings management. ROA and discretionary accrual (Dacc) have a correlation coefficient of 0.1020, which is positive and significant at the 5% level. ROA and absolute discretionary accrual have a correlation coefficient of negative 0.0818, which is significant at the 5% level. Debt

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correlated positively with ROA with a coefficient of 0.1078, significant at the 5% level. The moderating variable gender is positively correlated with signed discretionary (Dacc) with a coefficient of 0.0374, which is significant at the 5% level. Values diversity, a moderating variable, is positively correlated with absolute discretionary accrual with a coefficient of 0.0473, which is significant at the 5% level. The control variables firms' size positively correlated with the moderating variables risk, value, gender, and knowledge diversity with coefficients of 0.0557, 0.1361, 0.0331, and 0.0832 respectively, and they are significant at the 5% level, though their correlation is weak. Other controls' pairwise correlation with the moderating variables is low; there is no issue of multicollinearity with the moderating variables and the control variables. Multicollinearity issues can be identified by the use of the correlation's matrix. When there is multicollinearity between independent variables, two or more independent variables will show high correlations, above 0.80, which can impact the dependent variable (Blalock, 1963). Multicollinearity can result in deceiving the adjusted R2 since the standard error for the regressions' coefficients will be artificially high (Tillenius & Lango, 2018). Pairwise correlation coefficients above |0.8| would show the existence of multicollinearity (Gujarati, 2003, p. 387). As exhibited in Panel E, none of the independent variables or control variables reflects a correlation coefficient above |0.8|.

Panel A

Descriptive Statistics for Selected Financial Data (in Millions) of the Sample

Variable	N	Mean	Std. Dev.	5%	25%	Median	75%	95%	Min.	Max.
Revenue	5,529	19,850.25	38,776.17	1,052.17	3,263.65	7,705.00	17,265.00	88,275.00	3.919	511,729.00
Net Income	4,739	1,607.33	4,235.81	-313.71	250.56	602.75	1,574.00	7,264.00	-30860	104,821.00
Current Assets	4,574	7,657.70	13,047.73	553.13	1,578.90	3,251.55	7,768.00	31,322.58	30.933	169,662.00
Current Liabilities	4,582	5,601.31	9,924.75	278.78	933.80	2,305.23	5,531.00	23,072.00	17.579	116,866.00
Gross PPE	5,364	7,951.70	18,605.93	67.49	494.13	1,674.04	7,967.43	32,515.00	0.00	252,668.00
Total Assets	5,530	57,625.76	2,000,315.20	1,901.30	5,644.40	14,501.00	36,011.00	194,850.00	108.75	2,622,532.0 0
Short-Term Debt	5,485	4,253.43	28,371.51	0.00	15.96	242.00	945.00	7,711.00	0.00	449,196.00
Long-Term Debt (Current)	4,663	1,159.84	2,473.91	17.61	165.70	411.60	1,088.00	4,611.00	0.00	44,667.00
Long-Term Debt	5,514	9,682.51	26,882.35	0.18	1,066.90	3,307.10	8,259.00	30,053.00	0.00	377,138.00
Cash Operations	4,736	3,027.13	6,284.17	162.67	547.99	1,180.20	2,915.70	11,954.00	-45951	96,143.00

Panel B

Descriptive Statistics for Dependent and Independent Variables

Variable	N	Mean	Std. Dev.	5%	25%	Median	75%	95%	Min.	Max.
Dacc	3564	0.0000939	0.0401588	-0.05968	-0.01545	1.39E-17	0.0166083	0.0563937	-0.4429644	0.2618223
ABDacc	3564	0.0249511	0.0314643	2.78E-17	0.004781	0.016012	0.0334	0.0800776	0.00	0.4429644
ROA	5530	0.0541909	0.0804988	-0.02	0.009852	0.050443	0.092	0.1672157	-1.226993	0.7690744
Debt	6577	6.399576	3.587189	000.00	5.494595	7.739278	8.837667	10.19821	-4.017384	12.84037
Liquidity	5530	-145199	0.1713045	-0.26256	-0.07122	-0.00475	0.036099	0.200226	0.8797287	0.935973

Panel C

Descriptive Statistics for Moderating Variables

	N	Mean	Std. Dev.	5%	25%	Median	75%	95%	Min.	Max.
Age	4933	0.33568	0.36417	0.00	0.00	0.00	0.6666667	0.9375	0.00	1.00
Tenure	4933	0.3360137	0.349372	0.00	0.00	0.296264	0.6666667	0.8571429	0.00	1.00
Risk Diversity (Age, Tenure)	4933	0.3423	0.284812	0.00	0.00	0.333333	0.6145833	0.795	0.00	1.00
Political Affiliation	4933	0.2840864	0.3655377	0.00	0.00	0.00	0.6666667	1.00	0.00	1.00
Culture	4933	0.1509144	0.3055263	0.00	0.00	0.00	0.00	0.8888889	0.00	1.00
Values Diversity (Political Affiliation and Culture)	4933	0.2253201	0.2593993	0.00	0.00	0.00	0.375	0.744898	0.00	1.00
Gender	4933	0.2102999	0.3309404	0.00	0.00	0.00	0.5555556	1.00	0.00	1.00
Knowledge Diversity (Education)	4933	0.4248223	0.3545696	0.00	0.00	0.48	0.72	0.9375	0.00	1.00

Panel D

Descriptive Statistics for Control Variables

	N	Mean	Std. Dev.	5%	25%	Median	75%	95%	Min.	Max.
Revchg	4,639	632.99	7,034.59	-2,456.36	-42.67	277.62	1,003.10	5,417.00	-172,892.00	91,948.00
OpeCycle	6,577	6.29	1.54	4.52	4.52	6.23	7.24	8.98	4.52	13.40
Cash Flow Volatility	4,675	655.31	2,194.19	29.36	89.70	208.32	536.62	2,325.30	2.12	84,405.92
Firm Size	5,530	9.65	1.44	7.55	8.64	9.58	10.49	12.18	4.69	14.78
Sales Volatility	4,675	2,244.06	7,215.66	84.99	258.23	621.53	1,640.28	8,309.08	0.02	157,607.90

Panel E
Correlation Matrix for All Variables

	Dacc	ABDacc	ROA	Debt	Liquidity	RiskDiv	ValueDiv	Gender	KnolDiv	FirmSize	OperCycle	SalesVolatility	Cashflow	chgrev
Dacc	1													
ABDacc	-0.1175*	1												
ROA	0.1020*	-0.0818*	1											
Debt	-0.0139	0.0154	0.1078*	1										
Liquidity	0.0622*	-0.0197	0.0331*	0.1224*	1									
RiskDiv	0.0238	-0.0265	0.019	-0.0028	0.0114	1								
ValueDiv	0.0178	0.0473*	0.0041	0.0675*	0.0560*	-0.3340*	1							
Gender	0.0374*	-0.0218	0.0184	0.0027	0.0554*	0.0995*	0.0539*	1						
Knol Div	0.0018	-0.0154	-0.0264	0.0342*	-0.0278	0.4858*	0.4698*	0.1235*	1					
Firm Size	-0.0014	0.0304	-0.1956*	0.5673*	0.0338*	0.0553*	0.1361*	0.0331*	0.0832*	1				
Oper Cycle	-0.0141	0.0457*	0.0693*	0.2919*	0.1971*	-0.0267	0.0783*	-0.0137	0.0083	0.4692*	1			
Sales Volatity	-0.0454*	-0.0011	-0.0024	0.1384*	-0.0222	-0.0271	0.0600*	0.0053	0.0344*	0.3010*	0.2857*	1		
Cashflow	-0.0569*	0.0670*	-0.0149	0.4769*	0.0514*	-0.014	0.0705*	0.0066	0.0435*	0.3720*	0.3270*	0.5385*	1	
chgrev	-0.0317	0.0206	0.0590*	-0.0151	0.0306*	-0.0442*	0.0391*	-0.0232	-0.019	0.0638*	0.0576*	0.0075	0.0851*	1

* Indicates statistical significance at 95% confidence interval or 5% margin of error.

Regression Results Showing the Effects of ROA and Debt on Earnings Management

Table 2 shows the base model of the result for Hypotheses 1: Capital market motives (ROA) will be positively associated with earnings management (discretionary accruals). The empirical results where the dependent variable is Dacc and the independent variable is ROA shows the coefficient ROA is positive and significant $(0.057, p < 0.00)$, which strongly supports Hypothesis 1. I examined performance using ROA as a measure of performance, calculated as net income divided by total assets (Finkelstein & Boyd, 1998; Ridge et al., 2014; Schmalensee, 1985).

Kothari et al. (2005) and Wassimullah et al. (2010) used ROA to control the effects of current performance on the creation of discretionary accruals. Kothari et al. (2005) found a negative relationship between ROA and earnings management. Managers of poorly performing firms are more likely to engage in manipulation of earnings. Current performance from past may result in managers using discretionary accruals.

I hypothesized interaction and applicable measure of performance; in the study I portray the projected impacts of the firm's performance by TMT choices through their attributes indicated in the research. Firms manipulate earnings upwards as a sign of good performance, which makes them look appealing to investors and shareholders alike.

Discretionary Accruals—Regression Results Main Effects Using GEE Analysis

In this study I utilized GEE (Liang & Zeger, 1986) for the analysis because of the low variance expected in the moderation effects over time. The outcome of TMT variables may not significantly change across the years, as previously reported by Petrenko et al. (2015) in their study on corporate social responsibility, or CEO narcissism. The moderating analysis consists of three steps. First, I estimated the unmoderated regression with the predictor variables ROA and debt with the control variables. I estimated the

second regression by incorporating the moderating variable into the model, as shown in Table 1C. Finally, I estimated the third moderated relationship by adding the interaction term. For the study in controlling the effects of a moderating variable I used the GEE analytical approach to maintain the integrity of the sample, which resulted in modifying the form of the relationship displayed in the results from these three steps. I used GEE panel data methodologies to estimate the models in the results. Additionally, I performed controls of variables for the existence of undetected fixed determinants and corrections to obtain robust results (Kouaib & Almulhim, 2019).

Table 2: **GEE Regressions Test Results (Main Effects) on H1 and H2**

DAcc=β0+ β1ROA+β2Debt

Regression Results

Dacc	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
ROA	0.058	0.009	6.69	0.000	0.041	0.074	***
Ldebt	0.001	0.000	1.63	0.104	0.000	0.001	
Constant	-0.008	0.003	-2.67	0.008	-0.014	-0.002	***
Mean dependent var		-0.000	SD dependent var			0.040	
Number of obs		3564.000	Chi-square			44.947	

*** p < 0.01, ** p < 0.05, * p < 0.1

Table 3 shows the base model for Hypothesis 2. External contract motives (debt) will be positively associated with earnings management (GEE analysis), the empirical results where the dependent variable is Dacc and the independent variable is debt. The results show the coefficient debt is positive and not significant (0.0001, p < 0.1), which does not support Hypothesis 2. Healey (1985) also theorized that debt contract can prompt the selection of discretionary accounting policies. Zimmerman (1986) mentioned that executives are likely to pick income-increasing methods of accounting when the firm has a high debt ratio.

Table 3: **Results of Regression Using the Formula**

DAcc=β0+ β1ROA+β2Debt + ControlVar+ ε (1)

Table 3

Regression Results (Main Effects)

	(1)
	Dacc
Firm Size	0.003*
	(0.002)
Operating Cycle	-0.001
	(0.001)
Sales Volatility	-0.000
	(0.001)
Cash Flow Volatility	-0.004***
	(0.001)
Change in Revenue	-0.000
	(0.000)
ROA	0.057***
	(0.009)
Ldebt	0.001
	(0.000)
_cons	-0.009
	(0.008)
Obs.	3553
Pseudo R^2	.z

Standard errors are in parentheses.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

When control variables are added to the equation, the coefficient for ROA is .057, with a significant p value ($p < 0.01$), and the debt coefficient is .001. The p value is not significant, but the control variable cash flow volatility with a negative coefficient of -0.004 is significant ($p < 0.01$). The control variable firm size, with a positive coefficient of 0.003, is also significant ($p < 0.10$). The debt covenant premise asserts that managers whose firms are closer to defaulting on their debt are more likely to shift their earnings from a future period to the current period. When net earnings are higher, the probability of technical default on the debts is likely to be reduced. In

practical terms, when firms see tendencies toward defaulting on their debt, they tend to manage

earnings to prevent debt violation (DeFond & Jiambalvo, 1994).

Table 4

Regression Results (Unmoderated Effects)

	(1) Dacc
Firm Size	0.003**
	(0.002)
Operating Cycle	-0.000
	(0.001)
Sales Volatility	-0.001
	(0.001)
Cash Flow Volatility	-0.004***
	(0.001)
Change in Revenue	0.000
	(0.000)
ROA	0.055***
	(0.010)
Ldebt	0.001
	(0.001)
Gender	0.003
	(0.002)
Knowledge Diversity	-0.000
	(0.003)
Values Diversity	0.001
	(0.003)
Risk Diversity	0.001
	(0.003)
_cons	-0.013
	(0.008)
Obs.	3133
Pseudo R^2	.z

Standard errors are in parentheses.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 4, using GEE, shows the unmoderated regression estimate incorporating the moderating variables in the model. As shown, the ROA coefficient is 0.055, p < 0.01. Debt has a coefficient of 0.001, which is not significant and does not support H2. The control variable firm size has a positive coefficient (0.003, p < 0.05), and cash flow volatility has a negative coefficient (-0.004, p < 0.01), which are not significant and significant, respectively.

Results of Moderating Effects of TMT Attributes on Earnings Management, ROA (Performance), and Debt

The following models using GEE (Liang & Zeger, 1986) are consistent with previous research on outcomes like CEO narcissism (Petrenko et al., 2015). I will show results for the effects of TMT attributes (gender diversity, knowledge diversity (education); standardized Blau's index (a composite of age and tenure) proxied for risk diversity; and standardized Blau's index (a composite of political affiliation and culture) proxied for values diversity on earnings management and ROA (performance).

Hypothesis 3 states that TMT gender diversity will moderate the relationship between capital market motives (ROA) and level of earnings management, such that the relationship will weaken in conditions of higher variance in TMT gender diversity. The estimated regression uses GEE, with the dependent variable Dacc and the moderating variable Gender*ROA. The coefficient of the interaction variable Gender*ROA is negative (-0.026) but not statistically significant, which did not support Hypothesis 3.

Hypothesis 4 states that TMT gender diversity will moderate the relationship between external contact motives (debt) and the level of earnings management, such that the relationship will weaken in conditions of higher variations of TMT gender diversity. I will show the results for the effects of TMT attributes including gender diversity; knowledge diversity (education);

standardized Blau's index (a composite of age and tenure) proxied for risk diversity; and standardized Blau's index (a composite of political affiliation and culture) proxied for values diversity on earnings management and debt) using GEE analysis. When firms are on the verge of defaulting their contractual obligations, managers are more likely to manage earnings. I estimated that the relationship between discretionary accruals and debt weakened with the interaction of Gender*debt with a coefficient of 0.000, which did not support H4 and was not significant.

Hypothesis 5 states that TMT knowledge diversity will moderate the relationship between capital market motives (ROA) and level of earnings management, such that the relationship will weaken in conditions of higher variations of TMT knowledge diversity. As shown in Table 5 below, the moderation coefficient of knowledge diversity interaction is positive and significant (0.073, $p < 0.01$) and therefore implies that it strengthens rather than weakens the relationship, failing to support H5. These results indicate that knowledge diversity among TMT members strengthens the relationship between discretionary accruals and ROA.

Hypothesis 6 states that TMT knowledge diversity will moderate the relationship between external contact motives (debt) and the level of earnings management, such that the relationship will weaken in conditions of higher variations of TMT knowledge diversity. The moderation relationship is not statistically significant and does not support H6.

Hypothesis 7 states that TMT value diversity (political affiliation and culture) will moderate the relationship between capital market motives (ROA) and the level of earnings management, such that this relationship will weaken in conditions of higher TMT values diversity.

In Table 5 below, the moderation effect of values diversity, which is a standardized Blau's index composite mean of political affiliation and cultural diversity as a proxy for values diversity, has a positive coefficient of 0.039 but is not significant. Therefore, Hypothesis 7 is not supported.

Hypothesis 8 states that TMT values diversity will moderate the relationship between external contract motives (debt) and the level of earnings management, such that the relationship will weaken in conditions of higher variation of TMT values diversity. In Table 6 below, the moderation effect of values diversity shows a negative but not significant coefficient and, therefore, H8 is not supported.

Hypothesis 9 states that risk diversity and capital market motives does not negatively moderate the relationship between capital market motives (ROA) and the level of earnings management. It has a positive and significant coefficient, showing that it actually strengthens the relationship between discretionary accruals and performance (ROA), which fails to support the Hypothesis 9.

Hypothesis 10 states that TMT risk diversity will moderate the relationship between external contract motives (debt) and the level of earnings management, such that the relationship will weaken in conditions of higher variation of TMT risk diversity. This moderating effect has a positive but not significant coefficient of 0.012 (shown in Table 6). The result fails to support H10.

Table 5

GEE Interaction Regression Results for ROA, H3, H5, H7, and H9

	Dacc	Dacc	Dacc	Dacc
Firm Size	0.003**	0.003*	0.003**	0.003**
	(0.002)	(0.002)	(0.002)	(0.002)
Operating Cycle	-0.000	-0.000	-0.000	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)
Sales Volatility	-0.001	-0.001	-0.001	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)
Cash Flow Volatility	-0.004***	-0.004***	-0.004***	-0.004***
	(0.001)	(0.001)	(0.001)	(0.001)
Revenue Change	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
ROA	0.060***	0.018	0.047***	0.001

	(0.011)	(0.015)	(0.012)	(0.013)
Ldebt	0.001	0.001	0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.001)
Gender Diversity	0.005	0.003	0.003	0.003
	(0.003)	(0.002)	(0.002)	(0.002)
Knowledge Diversity	-0.000	-0.005	-0.000	0.000
	(0.003)	(0.003)	(0.003)	(0.003)
Values Diversity	0.001	0.001	-0.002	0.000
	(0.003)	(0.003)	(0.004)	(0.003)
Risk Diversity	0.001	0.001	0.001	-0.012***
	(0.003)	(0.003)	(0.003)	(0.004)
Gender*ROA	-0.026			
	(0.027)			
Knowledge*ROA		0.073***		
		(0.023)		
Values Diversity*ROA			0.039	
			(0.034)	
Risk Diversity*ROA				0.189***
				(0.031)
_cons	-0.014	-0.010	-0.012	-0.011
	(0.008)	(0.008)	(0.008)	(0.008)
Obs.	3133	3133	3133	3133
Pseudo R^2	.z	.z	.z	.z

Standard errors are in parentheses.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 6

GEE Interaction Regression Results for Debt, H4, H6, H8 and H10

	Dacc	Dacc	Dacc	Dacc
Firm Size	0.004***	0.005***	0.004***	0.004***
	(0.002)	(0.002)	(0.002)	(0.002)
Operating Cycle	-0.001	-0.001	-0.001	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)
Sales Volatility	-0.001	-0.001	-0.001	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)
Cash Flow Volatility	-0.004***	-0.004***	-0.004***	-0.004***
	(0.001)	(0.001)	(0.001)	(0.001)
Revenue Change	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
ROA	0.053***	0.052***	0.053***	0.053***
	(0.009)	(0.009)	(0.009)	(0.009)
Debt	-0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Gender Diversity	0.000	0.003	0.003	0.003
	(0.008)	(0.002)	(0.002)	(0.002)
Knowledge Diversity	-0.000	0.002	-0.000	0.001
	(0.003)	(0.006)	(0.003)	(0.003)
Values Diversity	0.001	0.001	0.001	-0.004
	(0.003)	(0.003)	(0.009)	(0.005)
Risk Diversity	0.001	0.001	0.001	-0.002
	(0.003)	(0.003)	(0.003)	(0.004)
Gender*Debt	0.000			
	(0.001)			
Knowledge*Debt		-0.000		
		(0.001)		
Values*Debt			-0.000	
			(0.001)	
Risk*Debt				0.012
				(0.010)
_cons	-0.016*	-0.018*	-0.017*	-0.016*
	(0.010)	(0.010)	(0.010)	(0.009)
Obs.	3133	3133	3133	3133
Pseudo R2	.z	.z	.z	.z

Standard errors are in parentheses.
*** p < 0.01, ** p < 0.05, * p < 0.1

Control Variables

I used the controls and the moderating variables to test the strength of the equation using the GEE method. The results were consistent with previous research on the outcomes (CEO narcissism; Petrenko et al., 2015). The purpose of this test was to assess the relative strength (measured in terms of statistical significance) of the coefficients of the variables used in the hypotheses tests, which includes the moderating variables. ROA is significant with a positive coefficient.

The control variable of firm size selected for this study demonstrated results that were consistent with previous studies (Kouaib & Almulhim, 2019; Qi et al., 2018). Firm size, which is proxied using the natural log of total assets, showed positive coefficients and was statistically significant. Firm sizes (larger and smaller firms) are likely to influence earnings management practices (Beaudoin et al., 2014). The other control variables are not significant, except cash volatility with negative coefficients, which was significant. This suggests that cash volatility impacts discretionary accruals behavior.

Robustness Check

To perform a robustness check, I ran a panel fixed effects model regression using the GEE, as prescribed by Liang and Zeger (1986).

The estimates of the regression models using the GEE model with ROA and all the moderating variables, including all the controls variables, indicated results were consistent, as shown in Appendix B (see outcomes like CEO narcissism in Petrenko et al. [2015]). This tested the sturdiness of the effects of the discretionary accruals obtained from the fixed effects model. The results were similar to the ROA positive coefficients and the results were significant. Also, the moderating variable of gender produced the same result as the base model.

I used GEE in Stata, changing the within-group correlation structured model from exchangeable, independent, and unstructured. I obtained results close or similar to the base model. I also looked at the interaction effects of age, tenure, political affiliation, and culture on discretionary accrual and ROA. Gender and political affiliation weakened the relationships, whilst age, tenure, and cultural diversity strengthened the relationship with significant p values. This panel fixed effects model is shown in Appendix B. The results were consistent and address endogeneity issues. For the purposes of robustness, I re-ran the model with a 2-lag instrumented Arellano and Bond generalized method of moments estimation. The results are consistent and are shown in Appendix C.

CHAPTER V

DISCUSSION

In this study I examined the impact of top management team (TMT) diversity and the moderating role of TMT diversity on earnings management. I used discretionary accruals as proxy for earnings management. This is consistent with prior research on earnings management, which also used the discretionary accrual method in their analyses (Badertscher, 2011; Dechow & Skinner, 2000).

The independent variables I used were capital market motives return of assets (ROA), proxied for performance, and external contract motives, which is financial leverage (debt), as the main effect to establish the relationship between the dependent variable (discretionary accrual) and the independent variables (ROA and debt). The TMT diversity attributes are the moderating variables for the study, grouped (age and tenure) as proxies for risk diversity, were computed as the standardized Blau's mean of age and tenure. Values diversity, which was calculated as the composite standardized Blau's mean for political affiliation and culture, gender diversity, and knowledge (education), as hypothesized in the study relationship was established between discretionary accrual and performance (ROA). Firms that are underperforming are more likely to engage in earnings manipulation. I further found that the TMTs' characteristics moderated the relationship between discretionary accrual and ROA such that the relationship was weakened by gender. The interaction of gender diversity did not support the hypothesis. This is consistent with the study conducted by Kulik et al. (2011) in which they found a negative relationship between

gender diversity and firm performance based on social identity theory, but was not consistent with the study performed by Svyantek and Boot (2004), where they posited that there were no effects of gender diversity on firm performance.

Furthermore, knowledge diversity did not support the hypothesis. There was positive correlation/association between educated TMTs and earnings manipulation, meaning that the more educated the TMT members are, the more earnings manipulation they engage in; this was shown in the statistically significant p value obtained in the results. Most TMT members have graduate degrees, based on the data obtained for this study. The other moderating variables—risk diversity, values, debt diversity, and gender diversity—did not support the study hypotheses, as predicted.

The control variables of firm size and cash flow volatility did moderate the relationship, either negatively or positively as indicated by their respective p values. I also ran absolute discretionary accrual with ROA and debt and the results showed no relationship. However, a positive significant relationship was established between absolute discretionary accrual and ROA in that one of the control variables run with absolute discretionary accrual and ROA was consistent. These study results are line with many other studies conducted over the years. For instance, Ghose and Moon (2010) pointed out that quality of earnings reduces across the board when debt level increases. Similarly, Bassiouny (2016) reported that debt has a significant positive impact on earnings management. Additionally, Kobbi-Fakhfah et al. (2018) discovered that financial leverage affects the quality of earnings negatively. This result reinforces the foregoing argument that managers trying to avoid debt covenant manipulate earnings (DeFond & Jiambalvo, 1994), and this is consistent with upper echelons theory and agency theory. Conversely, this result does not support the findings of the study conducted by Hassan and Farouk (2014), who observed that when the level of monitoring increases, debt surges. This means there is a positive correlation

between level of monitoring and debt surges that require management to reveal more information to improve the quality of earnings.

The role of individual factors and team processes have significant effects on firms' outcomes from a theoretical point of view and this is consistent with the upper echelons theory as suggested by Hambrick and Manson (1984) Hambrick and Mason (1984) focused on attributes of TMT rather than individual managers for a better outcome for the firm. Teamwork is the gateway to the success of quality earnings reporting and performance for any modern organization. The theory becomes essential in understanding how TMT characteristics influence the outcomes of organizations relating to financial reporting and accounting choices. Even though the central assumption of the upper echelons theory is that human limitations impact mindfulness, evaluations, and decisions about organizational problems, the theory still provides a general guideline on management team influence on choices, behavior, and the process used in establishing the top management. The moderating variables' (TMT attributes) impact on earnings management is also consistent with upper echelons theory. The theory clearly states that an organization's outcomes and strategic choices in either management, finances, or accounting and performance levels are partially predicted by managerial background characteristics (Hambrick, 2007; Hambrick & Manson, 1984).

CHAPTER VI

CONCLUSION AND LIMITATIONS

In conclusion, in this study I did not find weakening effects for any of the TMT diversity variables in the relationships between ROA or debt and earnings management. In post hoc analysis I splinted my measurement of risk diversity into age diversity and tenure diversity to see if any of the components worked as predicted by my theory and found that age diversity significantly weakens the relationship between ROA and earnings management. This implies that looking for a more specific measurement of TMT diversity factors may produce some potential compositional features that may serve to control earnings management in TMTs.

Study Limitations

I acknowledge several limitations in my empirical analyses. First, my study sample consists of firms from the S&P 500 index for the period 2008–2018 in the United States. My empirical findings may not necessarily be applicable to other firms not listed under the S&P 500 index. Also, my selection of the top five TMT executive members was based on their compensation but not on other parameters such as educational background, tenure of service, age, and experience. Lack of inclusion of these other parameters in this study might have skewed the outcome of the results. Additionally, I used secondary data, and at some point human error or bias may have been introduced in obtaining the data. There might be missing data that could have impacted and contributed to the results obtained in this study. Furthermore, the bias in the sample size regarding gender (approximately 92% male and the remaining percentage female) might have impacted my

results because of the very low variance in my gender diversity variable. Moreover, the lack of data for control variables might have impacted the results as well. Integrating more controls such as governance and audit quality may have yielded different results. Besides, in the case of cultural diversity, where I used location where first degree was earned as proxy for TMT's nationality, the place where the first degree was earned may not have been the correct choice. This study basically relied on panel regression analysis, which provides for the association between the variables. Finally, moderating some combined demographic characteristic variables of TMT members such as risk diversity being a composite of age and tenure and values diversity being a composite of political affiliations and culture might have had consequences for the results.

These limitations point to opportunities for future research. Future researchers could look at the cultural impact on earnings quality using the Hofstede cultural dimension. They also, could look at the moderating roles of firm size and cash flow volatility on earnings management. In the case of cultural diversity, better measurement could create a more consistent measurement of TMT members' place of birth. Other demographic characteristics, like ethnicity or religion, or a personal characteristic like overconfidence, could be included in a future study.

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APPENDICES

APPENDIX A

Diversity Attributes

Gender
Male 91.28%
Female 8.72%

Average of Present Age
Female   57
Male   59

Average of Total Tenure
Female   25
Male   24

Education
Bachelor's degree 32.64%
Master's degree 52.48%
PhD 5.68%
Unreported 9.20%

Culture
North America/Canada 91.40%
Other   8.55%
Unknown   0.04%

Political Affiliation
Republican 25.66%
Democrat 16.65%
Republican/Democrat 8.78%
Unknown 48.90%

Fixed Effects Panel Regression Results

	(1) Dacc	(2) Dacc	(3) Dacc	(4) Dacc	(5) Dacc
Firm Size	0.001	0.001	0.001	0.001	0.001
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Operating Cycle	0.002	0.002	0.002	0.002	0.002
	(0.003)	(0.003)	(0.003)	(0.002)	(0.002)
Sales Volatility	0.000	0.000	0.000	0.000	0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Cash Flow volatility	-0.003**	-0.003**	-0.003**	-0.003**	-0.003**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Revenue Change	0.000	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
ROA	0.064***	0.023	0.050***	0.007	0.009
	(0.012)	(0.017)	(0.013)	(0.014)	(0.017)
Ldebt	0.000	0.000	0.000	0.000	0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Gender	0.002	0.000	0.001	0.001	0.002
	(0.004)	(0.003)	(0.003)	(0.003)	(0.004)
Knowledge Diversity	0.004	-0.001	0.004	0.004	0.005
	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)
Values Diversity	-0.001	-0.001	-0.005	-0.002	-0.004
	(0.004)	(0.004)	(0.005)	(0.004)	(0.005)
Risk Diversity	0.000	0.000	0.000	-0.013***	-0.013***
	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)
_Gender*ROA	-0.015				-0.021
	(0.029)				(0.029)
Knowledge*ROA		0.078***			-0.007
		(0.025)			(0.032)
Values *ROA			0.057		0.025
			(0.037)		(0.042)
_Risk*ROA				0.202***	0.203***
				(0.032)	(0.037)
_cons	-0.018	-0.014	-0.017	-0.012	-0.012
	(0.020)	(0.020)	(0.020)	(0.020)	(0.020)
Obs.	3133	3133	3133	3133	3133
R-squared	0.016	0.020	0.017	0.030	0.030

Standard errors are in parentheses.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Fixed Effects Panel Regression Results

	(1) Dacc	(2) Dacc	(3) Dacc	(4) Dacc
Firm Size	0.001	0.001	0.001	0.001
	(0.003)	(0.003)	(0.003)	(0.003)
Operating Cycle	0.002	0.002	0.002	0.002
	(0.003)	(0.003)	(0.003)	(0.003)
Sales Volatility	0.000	0.000	0.000	0.000
	(0.001)	(0.001)	(0.001)	(0.001)
Cash Flow Volatility	-0.003**	-0.003**	-0.003**	-0.003**
	(0.001)	(0.001)	(0.001)	(0.001)
Revenue Change	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
ROA	0.061***	0.061***	0.061***	0.061***
	(0.011)	(0.011)	(0.011)	(0.011)
Ldebt	0.000	0.001	0.000	0.000
	(0.001)	(0.001)	(0.001)	(0.001)
Gender	0.001	0.001	0.001	0.001
	(0.010)	(0.003)	(0.003)	(0.003)
Knowledge Diversity	0.004	0.008	0.004	0.005
	(0.003)	(0.008)	(0.003)	(0.003)
Values Diversity	-0.001	-0.001	-0.002	-0.006
	(0.004)	(0.004)	(0.011)	(0.006)
Risk Diversity	0.000	0.001	0.000	-0.003
	(0.003)	(0.003)	(0.003)	(0.004)
Gender*Debt	-0.000			
	(0.001)			
Knowledge*Debt		-0.001		
		(0.001)		
Values Diversity*Debt			0.000	
			(0.001)	
Risk Diversity*Debt				0.014
				(0.011)
_cons	-0.018	-0.019	-0.018	-0.017
	(0.020)	(0.020)	(0.020)	(0.020)
Obs.	3133	3133	3133	3133
R-squared	0.016	0.016	0.016	0.017

Standard errors are in parentheses.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

APPENDIX C

Arellano and Bond Generalized Methods of Moments Estimation Results

Arellano and Bond Generalized Methods Regression Results

Dacc	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
Firm Size	0.008	0.003	2.44	0.015	0.002	0.014	**
Operating Cycle	-0.002	0.003	-0.82	0.410	-0.008	0.003	
Sales Volatility	0.000	0.001	-0.34	0.733	-0.003	0.002	
Cash Flow Volatility	-0.006	0.001	-4.63	0.000	-0.008	-0.003	***
Dchgrev	0.000	0.000	0.83	0.406	0.000	0.000	
ROA	0.061	0.049	1.23	0.218	-0.036	0.157	
Ldebt	-0.003	0.001	-2.48	0.013	-0.005	-0.001	**
Gender	0.008	0.006	1.28	0.202	-0.004	0.019	
Knowledge Diversity	-0.003	0.004	-0.83	0.409	-0.010	0.004	
ValueDiv	0.002	0.005	0.36	0.721	-0.008	0.011	
RiskDiv	0.003	0.004	0.80	0.422	-0.005	0.012	
int_Gender_ROA	-0.023	0.066	-0.34	0.735	-0.153	0.108	
2008b.fyear	0.000	.	.	.	.	.	
2009.fyear	-0.003	0.005	-0.61	0.542	-0.012	0.006	
2010.fyear	-0.007	0.005	-1.47	0.143	-0.015	0.002	
2011.fyear	-0.007	0.004	-1.71	0.087	-0.016	0.001	*
2012.fyear	-0.007	0.004	-1.62	0.106	-0.015	0.001	
2013.fyear	-0.007	0.005	-1.63	0.104	-0.016	0.002	
2014.fyear	-0.008	0.005	-1.71	0.088	-0.017	0.001	*
2015.fyear	-0.007	0.004	-1.48	0.139	-0.015	0.002	
2016.fyear	-0.006	0.004	-1.38	0.168	-0.014	0.002	
2017.fyear	-0.004	0.006	-0.72	0.470	-0.016	0.008	
2018.fyear	-0.004	0.005	-0.83	0.404	-0.015	0.006	
Constant	-0.004	0.021	-0.19	0.851	-0.045	0.037	

Mean dependent var		-0.000	SD dependent var		0.040
Number of obs		3133.000	Chi-square		45.329

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Arellano and Bond Generalized Methods Regression Results

Dacc	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
Firm Size	0.008	0.003	2.41	0.016	0.002	0.015	**
Operating Cycle	-0.002	0.003	-0.83	0.407	-0.008	0.003	
Sales Volatility	0.000	0.001	-0.12	0.907	-0.002	0.002	
Cash Flow Volatility	-0.006	0.001	-4.55	0.000	-0.008	-0.003	***
Dchgrev	0.000	0.000	0.80	0.426	0.000	0.000	
ROA	-0.001	0.034	-0.03	0.976	-0.067	0.065	
Ldebt	-0.003	0.001	-2.48	0.013	-0.005	-0.001	**
Gender	0.007	0.004	1.87	0.061	0.000	0.015	*
Knowledge Diversity	-0.011	0.006	-1.87	0.061	-0.022	0.000	*
ValueDiv	0.002	0.005	0.44	0.660	-0.007	0.011	
RiskDiv	0.005	0.004	1.11	0.269	-0.004	0.013	
int_know_ROA	0.102	0.056	1.80	0.072	-0.009	0.212	*
2008b.fyear	0.000	.	.	.	.	.	
2009.fyear	-0.004	0.004	-0.81	0.420	-0.012	0.005	
2010.fyear	-0.008	0.005	-1.80	0.072	-0.017	0.001	*
2011.fyear	-0.009	0.005	-1.94	0.053	-0.018	0.000	*
2012.fyear	-0.008	0.004	-1.86	0.063	-0.016	0.000	*
2013.fyear	-0.008	0.005	-1.72	0.085	-0.017	0.001	*
2014.fyear	-0.009	0.005	-1.83	0.067	-0.018	0.001	*
2015.fyear	-0.007	0.004	-1.63	0.104	-0.016	0.001	
2016.fyear	-0.007	0.004	-1.55	0.122	-0.015	0.002	
2017.fyear	-0.005	0.006	-0.83	0.408	-0.017	0.007	
2018.fyear	-0.005	0.005	-0.90	0.368	-0.014	0.005	
Constant	-0.005	0.021	-0.22	0.829	-0.046	0.037	

Mean dependent var		-0.000	SD dependent var			0.040
Number of obs		3133.000	Chi-square			49.562

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Arellano and Bond Generalized Methods Regression Results

Dacc	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
Firm Size	0.008	0.003	2.50	0.013	0.002	0.015	**
Operating Cycle	-0.002	0.003	-0.83	0.409	-0.008	0.003	
Sales Volatility	0.000	0.001	-0.28	0.776	-0.002	0.002	
Cash Flow Volatility	-0.006	0.001	-4.44	0.000	-0.008	-0.003	***
Dchgrev	0.000	0.000	0.85	0.394	0.000	0.000	
ROA	0.051	0.057	0.89	0.374	-0.062	0.164	
Ldebt	-0.003	0.001	-2.67	0.008	-0.005	-0.001	***
Gender	0.008	0.004	2.13	0.033	0.001	0.016	**
Knowledge Diversity	-0.005	0.004	-1.27	0.203	-0.013	0.003	
ValueDiv	0.001	0.010	0.09	0.930	-0.018	0.020	
RiskDiv	0.004	0.004	0.91	0.365	-0.004	0.012	
	0.018	0.110	0.17	0.866	-0.196	0.233	
int_values_ROA							
2008b.fyear	0.000	.	.	.	.	.	
2009.fyear	-0.003	0.005	-0.65	0.516	-0.012	0.006	
2010.fyear	-0.007	0.004	-1.70	0.090	-0.016	0.001	*
2011.fyear	-0.008	0.004	-1.98	0.047	-0.017	0.000	**
2012.fyear	-0.008	0.004	-1.79	0.074	-0.016	0.001	*
2013.fyear	-0.008	0.004	-1.71	0.087	-0.016	0.001	*
2014.fyear	-0.008	0.004	-1.93	0.053	-0.017	0.000	*
2015.fyear	-0.007	0.004	-1.66	0.098	-0.015	0.001	*
2016.fyear	-0.006	0.004	-1.54	0.123	-0.014	0.002	
2017.fyear	-0.005	0.006	-0.84	0.403	-0.016	0.007	
2018.fyear	-0.006	0.005	-1.03	0.304	-0.016	0.005	
Constant	-0.003	0.023	-0.14	0.886	-0.048	0.042	

Mean dependent var		-0.000	SD dependent var		0.040
Number of obs		3133.000	Chi-square		61.634

*** p < 0.01, ** p < 0.05, * p < 0.1

Arellano and Bond Generalized Methods Regression Results

Dacc	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
Firm Size	0.007	0.004	1.96	0.049	0.000	0.015	**
Operating Cycle	0.000	0.003	-0.18	0.858	-0.006	0.005	
Sales Volatility	0.000	0.001	-0.40	0.689	-0.002	0.002	
Cash Flow Volatility	-0.005	0.001	-4.34	0.000	-0.008	-0.003	***
Dchgrev	0.000	0.000	0.73	0.466	0.000	0.000	
ROA	-0.010	0.031	-0.30	0.761	-0.071	0.052	
Ldebt	-0.002	0.001	-2.00	0.046	-0.005	0.000	**
Gender	0.008	0.004	2.08	0.038	0.000	0.015	**
Knowledge Diversity	-0.004	0.004	-1.19	0.234	-0.011	0.003	
ValueDiv	0.001	0.005	0.30	0.765	-0.008	0.010	
RiskDiv	-0.013	0.010	-1.27	0.205	-0.032	0.007	
int_Risk_ROA	0.235	0.122	1.92	0.054	-0.005	0.474	*
2008b.fyear	0.000	.	.	.	.	.	
2009.fyear	-0.003	0.005	-0.62	0.534	-0.012	0.006	
2010.fyear	-0.006	0.005	-1.33	0.183	-0.015	0.003	
2011.fyear	-0.008	0.004	-1.73	0.083	-0.016	0.001	*
2012.fyear	-0.007	0.004	-1.52	0.129	-0.016	0.002	
2013.fyear	-0.007	0.005	-1.44	0.150	-0.016	0.002	
2014.fyear	-0.008	0.005	-1.55	0.120	-0.017	0.002	
2015.fyear	-0.005	0.004	-1.25	0.211	-0.014	0.003	
2016.fyear	-0.005	0.005	-1.19	0.236	-0.014	0.003	
2017.fyear	-0.005	0.006	-0.92	0.360	-0.017	0.006	
2018.fyear	-0.005	0.005	-0.87	0.386	-0.015	0.006	
Constant	-0.012	0.022	-0.53	0.595	-0.056	0.032	

Mean dependent var		-0.000	SD dependent var		0.040
Number of obs		3133.000	Chi-square		41.404

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Arellano and Bond Generalized Methods Regression Results

Dacc	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
Firm Size	0.006	0.004	1.53	0.127	-0.002	0.014	
Operating Cycle	-0.001	0.003	-0.50	0.620	-0.007	0.004	
Sales Volatility	0.000	0.001	0.13	0.899	-0.002	0.002	
Cash Flow Volatility	-0.006	0.001	-4.65	0.000	-0.008	-0.003	***
Dchgrev	0.000	0.000	0.86	0.392	0.000	0.000	
ROA	0.062	0.041	1.50	0.133	-0.019	0.142	
Ldebt	-0.002	0.001	-1.60	0.109	-0.004	0.000	
Gender	0.001	0.014	0.09	0.928	-0.026	0.028	
Knowledge Diversity	-0.005	0.004	-1.22	0.224	-0.012	0.003	
ValueDiv	0.002	0.004	0.43	0.668	-0.007	0.011	
RiskDiv	0.004	0.005	0.89	0.371	-0.005	0.014	
int_Gender_debt	0.001	0.002	0.61	0.539	-0.002	0.004	
2008b.fyear	0.000	.	.	.	.	.	
2009.fyear	-0.002	0.005	-0.52	0.606	-0.011	0.007	
2010.fyear	-0.007	0.004	-1.48	0.140	-0.015	0.002	
2011.fyear	-0.008	0.004	-1.90	0.058	-0.017	0.000	*
2012.fyear	-0.007	0.004	-1.82	0.068	-0.015	0.001	*
2013.fyear	-0.007	0.005	-1.64	0.102	-0.016	0.001	
2014.fyear	-0.008	0.005	-1.76	0.078	-0.017	0.001	*
2015.fyear	-0.007	0.004	-1.59	0.112	-0.015	0.002	
2016.fyear	-0.007	0.004	-1.53	0.127	-0.015	0.002	
2017.fyear	-0.005	0.006	-0.85	0.395	-0.016	0.006	
2018.fyear	-0.006	0.005	-1.15	0.251	-0.016	0.004	
Constant	-0.002	0.025	-0.08	0.936	-0.050	0.046	

Mean dependent var		-0.000	SD dependent var			0.040
Number of obs		3133.000	Chi-square			49.760

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Arellano and Bond Generalized Methods Regression Results

Dacc	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
Firm Size	0.005	0.003	1.58	0.115	-0.001	0.012	
Operating Cycle	0.000	0.003	0.07	0.942	-0.006	0.006	
Sales Volatility	0.000	0.001	-0.00	0.997	-0.002	0.002	
Cash Flow Volatility	-0.006	0.001	-4.24	0.000	-0.008	-0.003	***
Dchgrev	0.000	0.000	0.81	0.420	0.000	0.000	
ROA	0.069	0.044	1.56	0.118	-0.018	0.156	
Ldebt	-0.001	0.001	-0.57	0.569	-0.003	0.002	
Gender	0.007	0.004	1.98	0.048	0.000	0.015	**
Knowledge Diversity	-0.001	0.010	-0.15	0.883	-0.021	0.018	
ValueDiv	0.001	0.004	0.16	0.870	-0.008	0.009	
RiskDiv	0.003	0.005	0.74	0.459	-0.005	0.012	
int_know_debt	0.000	0.001	-0.25	0.800	-0.003	0.002	
2008b.fyear	0.000	.	.	.	.	.	
2009.fyear	-0.002	0.004	-0.57	0.567	-0.011	0.006	
2010.fyear	-0.005	0.004	-1.21	0.225	-0.014	0.003	
2011.fyear	-0.007	0.004	-1.61	0.107	-0.016	0.002	
2012.fyear	-0.006	0.004	-1.46	0.145	-0.014	0.002	
2013.fyear	-0.006	0.005	-1.31	0.190	-0.015	0.003	
2014.fyear	-0.007	0.004	-1.59	0.111	-0.016	0.002	
2015.fyear	-0.006	0.004	-1.39	0.166	-0.015	0.003	
2016.fyear	-0.006	0.004	-1.42	0.155	-0.014	0.002	
2017.fyear	-0.006	0.006	-0.99	0.324	-0.017	0.006	
2018.fyear	-0.006	0.005	-1.17	0.240	-0.016	0.004	
Constant	-0.017	0.022	-0.77	0.439	-0.062	0.027	

Mean dependent var		-0.000	SD dependent var		0.040
Number of obs		3133.000	Chi-square		26.454

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Arellano and Bond Generalized Methods Regression Results

Dacc	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
Firm Size	0.008	0.003	2.38	0.017	0.001	0.015	**
Operating Cycle	-0.002	0.003	-0.60	0.550	-0.007	0.004	
Sales Volatility	0.000	0.001	-0.24	0.807	-0.002	0.002	
Cash Flow Volatility	-0.006	0.001	-4.69	0.000	-0.008	-0.003	***
Dchgrev	0.000	0.000	0.85	0.397	0.000	0.000	
ROA	0.067	0.043	1.56	0.119	-0.017	0.151	
Ldebt	-0.003	0.001	-2.32	0.020	-0.005	0.000	**
Gender	0.009	0.004	2.13	0.033	0.001	0.017	**
Knowledge Diversity	-0.005	0.004	-1.31	0.190	-0.013	0.003	
ValueDiv	0.000	0.017	0.01	0.990	-0.032	0.033	
RiskDiv	0.003	0.005	0.57	0.571	-0.006	0.011	
int_values_debt	0.000	0.002	0.14	0.887	-0.004	0.004	
2008b.fyear	0.000	.	.	.	.	.	
2009.fyear	-0.003	0.005	-0.65	0.519	-0.012	0.006	
2010.fyear	-0.006	0.005	-1.37	0.169	-0.015	0.003	
2011.fyear	-0.008	0.004	-1.70	0.090	-0.016	0.001	*
2012.fyear	-0.007	0.004	-1.61	0.106	-0.015	0.001	
2013.fyear	-0.007	0.005	-1.40	0.163	-0.016	0.003	
2014.fyear	-0.008	0.005	-1.67	0.096	-0.018	0.001	*
2015.fyear	-0.007	0.005	-1.46	0.144	-0.015	0.002	
2016.fyear	-0.006	0.004	-1.38	0.166	-0.015	0.003	
2017.fyear	-0.005	0.006	-0.84	0.400	-0.017	0.007	
2018.fyear	-0.006	0.005	-1.05	0.294	-0.016	0.005	
Constant	-0.013	0.024	-0.53	0.596	-0.060	0.034	

Mean dependent var		-0.000	SD dependent var			0.040
Number of obs		3133.000	Chi-square			47.919

*** p < 0.01, ** p < 0.05, * p < 0.1*

Arellano and Bond Generalized Methods Regression Results

Dacc	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
Firm Size	0.008	0.004	2.21	0.027	0.001	0.015	**
Operating Cycle	-0.001	0.003	-0.53	0.599	-0.007	0.004	
Sales Volatility	0.000	0.001	-0.02	0.987	-0.002	0.002	
Cash Flow Volatility	-0.006	0.001	-4.49	0.000	-0.009	-0.003	***
Dchgrev	0.000	0.000	0.91	0.363	0.000	0.000	
ROA	0.065	0.043	1.50	0.134	-0.020	0.149	
Ldebt	-0.003	0.001	-2.33	0.020	-0.005	0.000	**
Gender	0.007	0.004	1.94	0.053	0.000	0.015	*
Knowledge Diversity	-0.004	0.004	-0.92	0.358	-0.011	0.004	
ValueDiv	-0.005	0.008	-0.64	0.521	-0.020	0.010	
RiskDiv	-0.002	0.006	-0.29	0.768	-0.014	0.011	
int_Risk_debt	0.021	0.016	1.37	0.171	-0.009	0.052	
2008b.fyear	0.000	.	.	.	.	.	
2009.fyear	-0.004	0.005	-0.88	0.378	-0.013	0.005	
2010.fyear	-0.007	0.005	-1.54	0.123	-0.016	0.002	
2011.fyear	-0.008	0.005	-1.82	0.068	-0.017	0.001	*
2012.fyear	-0.008	0.005	-1.65	0.099	-0.016	0.001	*
2013.fyear	-0.008	0.005	-1.72	0.086	-0.017	0.001	*
2014.fyear	-0.008	0.005	-1.82	0.069	-0.018	0.001	*
2015.fyear	-0.007	0.004	-1.53	0.125	-0.015	0.002	
2016.fyear	-0.006	0.004	-1.48	0.138	-0.015	0.002	
2017.fyear	-0.006	0.006	-1.00	0.318	-0.019	0.006	
2018.fyear	-0.007	0.005	-1.23	0.220	-0.017	0.004	
Constant	-0.010	0.023	-0.43	0.667	-0.056	0.036	

Mean dependent var		-0.000	SD dependent var		0.040
Number of obs		3133.000	Chi-square		42.640

*** p < 0.01, ** p < 0.05, * p < 0.1

APPENDIX D

Definition of Variables

Symbol	Variable	Measure
Dependent Variable		
EM	Earnings Management	The discretionary accruals estimated by cross-sectional modified Jones model (1991)
Independent Variables		
Capital Market Motives	ROA,	Calculated by the net income divided by lagged total assets at year-end.
	Liquidity	Calculated by receivables plus inventory minus accounts payable divided by total assets.
External Contract Motives	Financial Leverage-Debt	Calculated by the ratio of the total debt to total assets at year-end.
Moderating Variables (TMT Diversity Attributes)		Blau's (1977) heterogeneity index used to measure the moderating variables. A high score on Blau's index indicates greater variability while a low score represents homogeneity.
TMT Risk Diversity (Age and Tenure)	Age	TMT age (variation).
	Tenure	Total work experience—years with current job.

TMT Values Diversity (Political and Cultural)	Political Affiliation	TMT political affiliation—Democrat, Republican, or Other.
	Culture	Nationality—place of 1st degree as proxy for nationality.
TMT Knowledge Diversity (Education)	Education	TMT education level—BS, MBA, or PhD.
TMT Gender Diversity	Gender	TMT gender—variation of female members to male.

Firm Size	Natural log of total assets.
Leverage Ratio	Ratio of total debt to total assets.
Cash Flow Volatility	The standard deviation of sales over at least the last five years.
Operating Cycle	The natural log of the length of the firm's operating cycle, derived as sales turnover plus days in inventory.
Industry	Industry fixed effect.
Revchg	Change in revenue (revenue—lag revenue).
Sales Volatility	The standard deviation of sales over at least the last five years.

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