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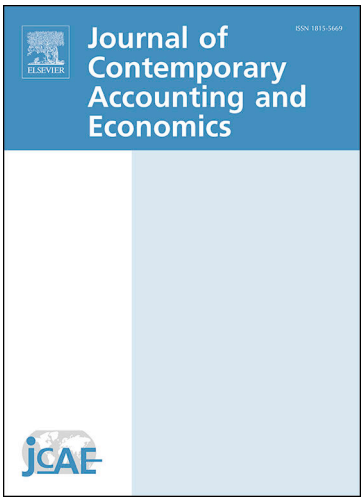

Female tainted directors, financial reporting quality and audit fees

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ABSTRACT

This paper examines the association between the presence of female tainted directors on corporate boards and audit committees and (1) financial reporting quality and (2) audit fees. Female tainted directors are defined as female directors who have been directors of the firms that have previously been involved in financial failures and integrity indiscretions. Using real earnings management and audit fees as proxies for effective governance and board reputation, we find that firms with female tainted directors have higher real earnings management and higher audit fees. However, since prior literature has demonstrated that audit fees are higher for firms with female directors because female directors demand better auditing, we corroborate a supply-side effect of auditors charging higher audit fees when female tainted directors exist. We demonstrate this by showing that while there is an association between audit fee and real earnings management, this association is higher for firms with female tainted directors. Arguably, the governance and reputational benefits of female directors on boards are negated if such directors have tarnished professional reputations.

Keywords: *Female tainted director, real earnings management, audit fees, financial reporting quality*

JEL Classification: G39, M41, M42

Female tainted directors, financial reporting quality and audit fees

1. Introduction

This paper deals with the impact of female tainted directors on corporate boards and audit committees on the financial reporting quality and audit fees of US-listed firms.[2] Female representation on corporate boards has long been the subject of research and remains an important issue for academics, professionals and policy-makers. Many academic researchers have argued that men and women have different ethical orientations (Singh et al., 2002). Women are believed to have values and interests that make them more sensitive to unethical behaviour than men (Betz et al., 1989; Limerick and Field, 2003; Stedham et al., 2007). Accounting researchers have found that female directors have better oversight of managers (Adams and Ferreira, 2009) because they do not belong to the old-boy networks; this facilitates more independent thinking in decision making (Adams et al., 2010). Further, firms with female directors facilitate more informed discussion (Daily et al., 2000), which reduces information asymmetry and increases earnings quality (Srinidhi et al., 2011). While each of the abovementioned studies has its own merits, none of the previous gender diversity studies differentiate the ethical orientation of female directors. To ensure that we capture the ethical orientation of these directors, we draw our evidence from the actual professional history of each director, based on the definition stated above.

Many researchers have found that women have a better ethical orientation than men (Akaah, 1989; Glover et al., 2002; Lane, 1995). Stedham et al. (2007) argue that women consider the interpersonal aspects of a situation and the acceptability of a decision, whereas men have a more impersonal approach and extract the moral content from an interpersonal situation. Similarly, Loo (2003) argues that men are more concerned with competitive success and intrinsic reward in both financial and status terms, whereas females emphasise interpersonal aspects, caring and doing well.

[2] In this study, female tainted directors are defined as female directors "who have been personally involved as a director or executive, in one or more corporate bankruptcies, major litigations or corporate infractions, major accounting restatements and other accounting scandals or have served on compensation committees that have approved particularly egregious CEO compensation packages, or other similar circumstances" (The Corporate Library, 2011).

Gul et al. (2013) and Wang and Clift (2009) provide two reasons in support of the inclusion of female directors on boards. Firstly, from an equity perspective, it is the right thing to do and secondly, from a business perspective, female directors contribute to the enhancement of share value. Additionally, Burgess and Tharenou (2002) argue that female directors increase the diversity of the board, which enriches the strategic input of the board and establishes a dynamic leadership style. Moreover, they argue that female directors are risk-averse, which improves boardroom behaviour and the company image. Considering the importance of female directors, many countries have initiated benchmarks to incorporate female directors on boards (De Anca, 2008; Hoel, 2008; Singh, 2009).

Much of the earlier research has been premised on the notion that female directors are free from a tainted professional image and, thereby, increase corporate governance effectiveness. The presence of female directors on boards and audit committees can lead to demands for higher audit quality and, likewise, higher audit fees (Lai et al., 2017). However, firms can have both female and male directors who may have questionable professional histories arising from managerial integrity financial concerns. Plausible reasons for having tainted directors on a board, or for not removing them, are their skills, risk-taking abilities, loyalty to management, and ability to secure resources (Carver, 2014; Baer et al., 2019) and their prior experience in responding to litigation (Fich and Shivdasani, 2007; Baer et al., 2019). The question that arises from this is what would be the effect on accounting quality and auditors' perceptions of firms' reputations of female directors (generally regarded as individuals of higher moral standing), who have questionable professional backgrounds?

A director's past involvement in financial failure or integrity indiscretions sends a signal to auditors of potentially weak board competence and integrity (Scarpati, 2003). Amir, Kallunki, and Nilsson (2014) show that a firm's profitability decreases, and earnings volatility increases, with an increase in the number of fraudulent board members, and Fich and Shivdasani (2007) and Gao et al. (2017) find negative effects from the tainted director's reputation and, thereby, on the value of the firm. Additionally, Habib and Bhuiyan (2016) document the adverse effects on and financial reporting quality due to the presence of tainted directors on audit committees.

In addition to such performance-related characteristics, the management integrity of directors is an important determinant of audit risk (Allen et al., 2006; Street and Hermanson, 2019). Auditors consider such integrity threats when assessing audit risks (Kizirian et al., 2005). We argue that poor quality financial reporting increases audit risk, and therefore, audit

fees. This impact is likely to be particularly noticeable when female directors have tarnished reputations, because of the presence of an opposite signal to what is typically expected when female directors are on the board. Likewise, we investigate whether auditors perceive the past involvement of female directors in financial failures and integrity indiscretions to be an indication of weak corporate governance. Therefore, firms with female tainted directors on boards are likely to incur higher audit fees than firms with no female tainted directors on their boards. We regard this as a supply-side influence on audit fees, which the supplier of audits (the auditor) imposes, rather than the demand-side influence of gender-diverse boards. Alternatively, from a demand perspective, a board with tainted female director/s is less likely to demand a quality audit because of the scrutiny this can impose concerning its activities and its composition. However, the auditors will have the final say in deciding the audit fee to reduce their audit risk.

To show a supply-side effect of auditors charging higher audit fees with the presence of tainted female directors, we examine the association between audit fees and real earnings management and ascertain whether this association is higher for firms with female tainted directors. Intuitively, it is expected that the association between audit fee and real earnings management will be positive. It is posited that there is an incremental impact of female tainted directors on this association.

Using a sample of 5,047 firm-year observations of US firms, we find that firms with female tainted directors have higher real earnings management and higher audit fees, and the association between audit fees and real earnings management is higher for firms with female tainted directors. The results indicate that firms with female tainted directors are associated with lower financial reporting quality, which is a significant determinant of the auditor's pricing decision. Our results are consistent with a number of sensitivity tests.

The higher audit fees and the existence of real earnings management practice in the presence of female tainted directors demonstrate that the advantages of board diversity are not achieved when female directors have questionable reputations. We argue that historic managerial professional background influences the level of managerial integrity, which affects monitoring quality and influences audit service efforts. Poor credentials are certainly a threat to good corporate governance practice and should be of concern to regulators, stakeholders, external auditors and, more importantly, to shareholders. The message for corporate governance policymakers is that poor choices of female directors can lead to detrimental effects on corporate image and the market integrity of firms. While it is well

established in the literature that female directors improve communication and the monitoring abilities of the board, when female tainted directors are on the board, the market may perceive that the expected benefits of diversity are not derived, which would reverse the beneficial perceptions of the presence of female directors on the board.

The remainder of the paper proceeds as follows. In the next section, we discuss the relevant literature and develop our hypotheses. In the subsequent section, we explain the research method. Sample selection and descriptive analyses are explained in Section 4. Section 5 presents the main analysis. Finally, section 6 provides the conclusion and implications and discusses future research.

2. Literature review and hypotheses development

The psychology, sociology and economics literature suggests that there is a difference in moral reasoning and development between males and females, which implies that men and women have different ethical orientations (Akaah, 1989). Arch (1993) postulates that in a risky situation, males are more likely to see a challenge that calls for participation, while females tend to respond to a threat in ways that encourage avoidance of the risk. Brammer et al. (2009) find evidence of a corporate reputation effect associated with a female presence on boards. Adams and Ferreira (2009) examine the impact of female members of corporate boards on corporate governance and performance. They find that female directors have a significant impact on board inputs and firm outcomes. They also show that female directors have better board meeting attendance than male directors; chief executive officer turnover is more sensitive to stock performance, and directors receive more equity-based compensation in firms with more gender-diverse boards. In other words, gender-diverse boards perform better.

Many academic researchers have found that a gender-diverse board facilitates an increase in the level of board oversight and monitoring, more informed deliberation and discussion of unfavourable issues, and generates more effective communication within the board (Huse and Solberg, 2006; McInerney-Lacombe et al., 2008). Similarly, Adams and Ferreira (2009) suggest that a gender-diverse board allocates more effort to oversight and monitoring, which results in a higher board attendance rate, and improved board attendance for male directors who are more likely to take roles on supervisory committees. While accounting researchers have mostly explored the positive effects of female directors around

the improved reported quality of earnings (Banerji and Krishnan, 2000; Srinidhi et al., 2011), scant attention has been given to the directors' professional backgrounds.

Gender diversity research finds that women are more risk-averse than men, meaning females are more likely to be conservative in corporate disclosure, monitor management more closely, and engage less in earnings management for opportunistic motives. Srinidhi et al. (2011) find that firms with female directors, specifically on the audit committee, exhibit better reporting discipline by managers, which, in turn, improves earnings quality. Additionally, Lai et al. (2017) find evidence of higher audit fees for firms with gender-diverse boards and audit committees. Overall, gender-diverse boards and audit committees demand better audits, resulting in higher audit fees, and are related to higher-quality earnings.

The presence of females on corporate boards is associated with corporate reputation (Brammer et al., 2009) and companies with higher reputations have better accounting quality (Cao et al., 2012). While academic research has provided overwhelming evidence of the benefits of female directors on boards, we question whether these benefits continue if female directors have a professional history of questionable ethical behaviour.

Arguably, female directors who have questionable professional histories are likely to be of managerial concern and the effects are likely to be pronounced because female directors are generally perceived as more trustworthy than male directors. The involvement of directors in fraudulent activities acts as a proxy for director reputation (Fich and Shivdasani 2007; Brochet and Srinivasan 2014). Eisenberg, Sundgren and Well (1998) and O'Sullivan (2000) argue that impaired board members have a reduced capability to oversee directorial responsibilities, which can lead to substandard performance. Using a sample of directors sanctioned for crimes (mostly civil crimes) in Swedish firms, Amir et al. (2014) show that a firm's profitability decreases and earnings volatility increases with an increase in fraudulent board members. Additionally, using a sample of US firms facing shareholder class action lawsuits, Fich and Sivdasani (2007) find that firms that share directors with a sued firm exhibit valuation declines at the lawsuit filing. They find that, as a consequence, firms with stronger corporate governance are likely to remove fraud-affiliated directors from their boards and their removals are associated with valuation increases for those firms.

Gao et al. (2017) after examining the characteristics of outside directors and boards at fraud firms, find strong evidence that female directors, directors who have greater stock ownership in the firm, and directors with multiple directorships at other firms are more likely

to depart fraud firms. They show that abnormal director turnover is significantly higher for fraud that is considered more egregious (i.e., involving fictitious transactions and disclosure problems). Lastly, directors are more likely to depart fraud firms with more severe fraud, as proxied by higher ex-post settlement amounts and longer fraud duration. Likewise, the presence of female tainted directors on the board or the audit committee could have adverse effects on board governance which, in turn, could reduce financial reporting quality. A review of the literature on auditor risk assessment by Allen et al. (2006) reveals that the managerial integrity of board members affects audit risk. Amir et al. (2014) argue that having directors with low moral standards and questionable ethical values reduces the board's ability to monitor and advise management effectively. In addition, Kallunki and Pyykkö (2013) find that the probability of corporate bankruptcy increases significantly if firms appoint a CEO or a director with a previous personal payment default. Earlier studies provide evidence that female directors reduce information asymmetry by improving communication and monitoring ability (Terjesen et al., 2009). Similarly, when female tainted directors are on the board, the expected benefits of diversity, transparency and effective communication may not be derived from their presence and the perception of their reputation in the eyes of important stakeholders of the firm may become unfavourable. Considering the historical evidence of their wrongdoing, female tainted directors will not be seen as less risk-averse than their male counterparts, and therefore, the opinion that they are less related to flawed decision-making in the financial reporting process may not hold ground.

To ensure that higher-quality accounting information is produced and disseminated, the current SEC rules require member companies of all national exchanges (e.g. the NYSE and NASDAQ) to have an audit committee with independent members and specified responsibilities. Researchers have found that audit committee structure and membership affects the quality of publicly released financial information (Bédard et al., 2004); the quality of internal controls (Krishnan, 2005); and constrains earnings management opportunities (Klein, 2002) and restatements (Abbott et al., 2004). However, the presence of female tainted directors on corporate boards and audit committees could reduce the effectiveness of the audit committees, which could lead to higher earnings management and lower-quality earnings.

While prior studies on gender diversity and earnings quality, such as Srinidhi et al. (2011), have used accruals-based measures of earnings quality or earnings management, we believe that in the current context, real activities-based earnings management measures would

be more relevant for assessing the effects of audit committee gender diversity on earnings management. Extant research indicates that managers are concerned about their accrual-based earnings management because it can be easily detected by external auditors and easily scrutinised by government agencies and regulators. In this regard, Cohen et al. (2008) find that real activities-based earnings management has become more pervasive in the post-Sarbanes-Oxley period. While real earnings management could have a negative impact on a firm's future value (e.g., Cohen and Zarowin, 2010), firms could use it as a means of earnings management. Neither regulators nor auditors can restrain firms from engaging in real earnings management. Because it is activities-based rather than accounting policies-based, scrutiny by regulators and auditors is weaker for real earnings management than accrual-based earnings management. Thus, the costs of real earnings management to the firm are lower (Cohen, et al., 2008). Further, empirical research suggests that real earnings management is related to internal control weaknesses (Lenard et al., 2016). Likewise, corporate boards and audit committees with female tainted directors may choose this less risky and cost-effective method of earnings management.

The above discussion leads us to the following hypothesis:

H_1: There is a positive association between real earnings management and the presence of female tainted directors on the board/audit committee.

Company reputation concerns affect the behaviour of auditors, motivating them to take actions that ensure they can maintain their own reputations. In this regard, Cao et al. (2012) find that company reputation is positively associated with audit fees. This view and the evidence supporting it is based on the demand-side notion of auditing, which proposes that companies with better reputations will demand better-quality audits and, likewise, pay higher audit fees for the additional services received. The question that arises is: how do auditors respond to firms that have female tainted directors on their boards and/or audit committees? In other words, how would they respond to a corporate reputation situation where the presence of female directors provides a signal opposite to what is normally expected? Empirical researchers have found that auditors adjust their decisions based on evidence concerning management integrity (Kizirian et al., 2005; Shaub, 1996). Following the Sarbanes Oxley Act (SOX) 2002, the scope of auditors' risk measurement has widened, which has increased the litigation risk to auditors (Elder and Allen, 2003). Auditors are very cognizant of risks to them arising from weak governance and fraud (Carcello, et al., 2002).

With the increased scope of audits and the associated likelihood of litigation in the current environment, auditors are likely to undertake additional measures to reduce their audit risk.

Gul et al. (2011) argue that board gender diversity results in a richer information environment through more intensive oversight than similar all-male boards. An effective board can intervene in the operating and reporting decisions by advising managers and increase their accountability through increased oversight (Lai et al., 2017). Carcello et al. (2002) show that a strong board effectively demands more effort from the auditors to protect the directors' reputational capital, avoid liability, and promote shareholder interests. Srinidhi et al. (2011) regard the presence of female directors on the board as an attribute of a strong and effective board, which enhances financial reporting quality. In this regard, Lai et al. (2017) find that gender-diverse boards are more likely to appoint specialist auditors who pay more attention to the details, exhibit independence to confront managers, and provide greater audit effort to process information objectively, which in turn results in higher audit fees. Additionally, Ittonen et al. (2010) argue that having females on the audit committee affects the auditor's assessment of audit risk by improving the effectiveness of internal control activity, which also reduces inherent risk and lowers audit fees.

The reliability of the financial reporting process depends on management's integrity and ability to identify and discuss important financial reporting issues, and it is the board of directors' responsibility to oversee the process (POB, 1994). Archival research (Beasley et al., 1999; Beasley, 1996; KPMG, 1999) shows a link between corporate governance factors and financial reporting fraud and argues that high-risk clients are often linked to corporate governance and management integrity problems. The extant audit literature suggests that firms with poor corporate governance reputations are more likely to generate poor financial reporting quality, such as higher real earnings management. Kochan (2002) provide empirical support for this argument by showing that an incident of accounting fraud provides strong evidence of a firm's governance mechanisms failure. Likewise, Carcello et al. (2002) suggest that companies with higher reputations pay more audit fees to obtain more audit services. Using the demand-side perspective, we could regard a firm with female tainted directors to be of lower reputation, reluctant to acquire better audit services and thereby willing to pay lower audit fees. However, an alternative argument would be a supply-side argument, in which firms that have female tainted directors would be seen by auditors as firms with poor corporate governance reputations. Firms with such reputations are likely to be regarded as having higher audit risks, which could then lead to auditors charging higher audit fees.

Considering this latter argument, we expect that the benefit of diversity will not be perceived by the auditors if female directors have a history of professional wrongdoing. Another argument is that while tainted directors suffer consequences such as loss of board membership (Street and Hermanson, 2019), firms often retain them or appoint them to the board for their skills and expertise rather than for providing governance support (Baer et al., 2019). Presence of such directors, therefore, would neither have a demand-side or a supply-side effect on audit fees. Given these arguments, we posit that the association between audit fee and female tainted directors is an empirical question. Therefore, we draw a null hypothesis stating:

H_2: There is no association between audit fees and the presence of female tainted directors on the board/audit committee.

From an auditing perspective, the real earnings management issue raised in H_1 is not likely to be a direct concern for auditors as the basic objective of a financial statement audit is to provide reasonable assurance that the client's financial statements are presented fairly and in accordance with generally accepted accounting principles (GAAP) (Kim et al., 2010; Chi et al., 2011). However, Kim and Park (2014) show a positive association between real earnings management and auditor resignation. Additionally, real earnings management is related to internal control weaknesses, which result in higher audit fees (Choi et al., 2018). Commerford et al. (2016) suggest that real earnings management causes auditors to be concerned because it raises "going concern" issues such as whether or not the firm's future earnings are impacted due to the curtailment of real earnings management activities. In short, excessive real activities management giving rise to real earnings management can have significant audit risks arising from going concern risks. Commerford et al.'s (2016) study was based on in-depth interviews with experienced auditors, in which it was found that the auditors were aware of real earnings management and often identified real earnings management through formalized protocols that included analytical procedures, discussions with management, or their knowledge of the business. Likewise, we expect audit fees to increase with real earnings management.

The association between audit fees and real earnings management is likely to be more pronounced when female tainted directors are present on boards and audit committees. The presence of female tainted directors could strengthen the perception that real earnings management is due to the internal control weaknesses of the firm. Additionally, since prior literature has demonstrated that audit fees are higher for firms with female directors because

female directors demand better auditing (Lai et al., 2017), the empirical evidence of this incremental increase would show that a supply-side effect of auditors charging higher audit fees for the presence of female tainted directors exists.

These arguments lead us to the third hypothesis:

H_3: The positive association between audit fees and real earnings management is more pronounced for firms with female tainted directors on the board or audit committee.

3. Research design

3.1 Measurement of female tainted directors

Prior studies on tainted directors use a variety of steps to identify such directors. Gao et al. (2017) study the association between director turnover and the financial fraud occurring in a firm, not specifically involving the director. They only identify whether a fraud occurred. Baer et al. (2019), in studying why tainted senior executives of firms are appointed as outside directors of other firms, define tainted executives as those who had been implicated in lawsuits on firms in the past twelve months prior to being appointed as a director. Cowen and Marcel (2011), to understand why tainted directors are dismissed, define such directors as those who have been compromised by associations with accounting frauds at other firms. Finally, Fich and Shivdasani (2007), in demonstrating the impact of directors becoming tainted on firm value, identify them as those outside directors who are implicated in class action suits in other companies.

The measures of tainted directors used in prior studies were designed to capture the association of the tainted director with legal actions against firms in which they were or had been a director. Additionally, those measures captured the more immediate impact of becoming tainted rather than the long-term reputation of the directors. Our study also identifies the association of a director with legal actions against firms in which they had been a director. However, we take into account the longer-term reputations of such directors. Likewise, we use a measure of taintedness that takes into account all past involvements of a female director in lawsuits. Such a measure is available from the database Board Analyst of The Corporate Library (2011). Board Analyst identifies tainted directors as problem directors and defines the term in the following manner:

"…those individuals who have been personally involved, as a director or executive, in one or more corporate bankruptcies, major litigation or regulatory infractions, major

accounting restatements and other corporate scandals, or have served in compensation committees that have approved particularly egregious CEO compensation packages, or other similar circumstances."

We assigned a value of 1 if a firm is served by a female tainted director and 0 otherwise.

3.2 Measurement of financial reporting quality

The extant literature on financial reporting quality suggests that managers make discretionary decisions in three different ways: first, via accounting estimates and methods (Dechow et al., 1995, 1996; Healy and Wahlen, 1999); second, via their usual operating decisions (Cohen et al., 2008; Roychowdhury, 2006); and finally, through income classification shifting (McVay, 2006). Following SOX, the managerial decision-making process has been under scrutiny, and therefore accruals management is closely monitored by external auditors. Cohen et al. (2008) find that accrual earnings management has significantly reduced in comparison to real earnings management following SOX. As real earnings management is processed through daily operating activities, female tainted directors are more likely not to challenge real earnings management practices. Therefore, to examine the association between female tainted directors and financial reporting quality, we consider real earnings management as a proxy for financial reporting quality. We follow Roychowdhury (2006) in measuring real earnings management (REM_{it}).

We estimate the following regression model to capture the effects of female tainted directors:

$$REM_{it} = \beta_0 + \beta_1 FEMTD + \beta_2 INDDIR + \beta_3 BDSIZE + \beta_4 CEODUAL + \beta_5 LNAT + \beta_6 BIG4 + \beta_7 LEV + \beta_8 GROWTH + \beta_9 ROA + \beta_{10} OCF + \beta_{11} DAC + YEAR \& INDUSTRY + \varepsilon \ldots\ldots (1)$$

FEMTD is female tainted directors, measured by three different proxies: *FEMTDDUM*, *FEMTDACDUM* and *FEMTDACEXPDUM*. *FEMTDDUM* is tainted directors on the board, coded 1 if the board has at least one female tainted director, and 0 otherwise. *FEMTDACDUM* is tainted female directors on the audit committee, coded 1 if the audit committee has at least one tainted director and 0 otherwise; and *FEMTDACEXPDUM* is a dummy variable coded 1 if any female audit committee members with financial expertise (*FEMTDACEXPDUM*) are categorized as tainted directors, and 0 otherwise. Relating to H_1, our primary coefficient of interest is β_1 and we expect a positive coefficient.

To control for better corporate governance, we include several variables: the proportion of independent directors (*INDDIR*), the number of board members (*BDSIZE*); and CEO duality (*CEODUAL*), a dummy variable, with a value assigned as 1 if the CEO and chairman are the same individual and 0 otherwise. We also control for the following variables that affect real earnings management: *LNAT* is firm size measured by the natural log of total assets; *BIG4* is auditor quality, measured as 1 for the largest four auditors and 0 otherwise; *LEV* is firm leverage, measured as the sum of total debt over total assets; *GROWTH* is measured as the ratio of market value of equity over book value of equity; *ROA* is the firm's return-on-assets calculated as net income before extraordinary items, divided by beginning-of-the-year total assets; and *OCF* is operating cash flows deflated by total assets.

3.3 Audit fees

We use the natural log of the total audit fees as a proxy for audit risk and examine the impact of *FEMTD* after controlling for numerous determinants of the audit fee.

$$LNAUDIT_{it} = \mu_0 + \mu_1 FEMTD + \mu_2 REM + \mu_3 REM * FEMTD + \mu_4 INDDIR + \mu_5 BDSIZE + \mu_6 CEODUAL + \mu_7 LNAT + \mu_8 BIG4 + \mu_9 GROWTH + \mu_{10} ROA + \mu_{11} MERGER + \mu_{12} LEV + \mu_{13} ARINV + \mu_{14} LOSS + \mu_{15} SPI + \mu_{16} SALEGR + \mu_{17} NUMSEG + \mu_{18} PENSION + \mu_{19} FYE + \mu_{20} TENURE + \mu_{21} REPLAG + \mu_{22} VOL + \mu_{23} GC + \mu_{24} FOREIGN + \mu_{25} LNNAF + \mu_{26} ICW + \mu_{27} FINANCE + \mu_{28} REST + \mu_{29} DAC + YEAR \,\&\, INDUSTRY + \varepsilon \ldots\ldots (2)$$

In addition to the variables already described for model 1, the new variables are defined as follows: *LNAUDIT* is the natural logarithm of the total audit fees; *MERGER* is an indicator variable that equals 1 if the firm has had a merger or acquisition, and 0 otherwise; *ARINV* is the sum of the firm's receivables and inventory divided by its total assets; *LOSS* is a dummy variable coded 1 if the firm reports negative earnings and zero otherwise; *SPI* is an indicator variable that equals 1 if the firm reports special items, and 0 otherwise; *SALEGR* is percentage growth in sales over the previous year; *NUMSEG* indicates the natural logarithm of total number of business segments; *PENSION* is a dummy variable that equals 1 if the firm has a pension plan and 0 otherwise; *FYE* is the firm-year ending that equals 1 if the financial year ends on December and 0 otherwise; *TENURE* indicates the duration of auditor tenure measured by the natural logarithm of the total auditor tenure; *REPLAG* is the audit report lag, indicating the number of days between the fiscal year end and the date of the audit report; *VOL* is the standard deviation of stock returns over the past year with a minimum of 8 months' data; *GC* indicates the going concern opinion, which is assigned a value of 1 if the auditor issued a going-concern opinion, and 0 otherwise; *FOREIGN* is a dummy variable,

which indicates at least one foreign operation; *LNNAF* is the natural logarithm of total non-audit fees; *ICW* is internal control weakness, where a value of 1 is assigned if the client has a reported Section 404 or 302 weakness in the current or prior fiscal year, 0 otherwise; *FINANCE* is an indicator variable that equals 1 if the firm issues new equity or debt in the subsequent year, and 0 otherwise; *REST* is restatement and a value of 1 is assigned if the client announces a restatement in the financial year; and *DAC* is discretionary accruals (computation shown in Appendix A).

Relating to H2 and H3, our primary coefficients of interest are μ_1 and μ_3, respectively. We expect a positive coefficient between *LNAUDIT* and *FEMTD,* which will indicate that female tainted director-affiliated firms (audit committee or expert member) are charged higher audit fees by auditors to cover their additional audit risk. We also expect a positive association between *LNAUDIT* and *FEMTD*REM* because *FEMTD* will be perceived not to be less risk-averse than males and as being impaired in their ability to influence the board in the face of real earnings management activities by the firm.

As shown in Model 2, consistent with prior research, we control for several firm and corporate governance-specific variables (Francis et al., 2005; Hay et al., 2006; Palmrose, 1986; Simunic, 1980).

3.4 Sample selection and descriptive statistics

We begin with an initial sample of 16,287 firm-year observations of US firms from Board Analyst and match those to COMPUSTAT for the period 2004–2010. The sample period starts in 2004 as Board Analyst does not have information for problem directors (our proxy for tainted directors) before 2004. The year 2010 is the last year for the sample as the data for directors' involvement in audit committees are unavailable after that year. While Board Analyst identifies problem directors, the details of their audit committee involvement and financial expertise had to be manually collected from each director's professional history from the same database. We exclude all firm-year observations from the regulated (SIC 40-49) and financial institution industries (SIC 60-69), and any observation with missing 2-digit SIC codes.

Our final sample comprises 5,047 firm-year observations for the period 2004 to 2010. Table 1 shows the sample distribution by industries and by years. The sample is spread through a considerable range of industries, thus allaying any concerns about concentration by industries. The largest two industry sectors were Business Services and Retail with each

having approximately 10% of the sample. While the sample is more populated in later years, there is a reasonable distribution across all years. The higher frequency in later years is likely to be due to the increasing number of females on the board and the gradual enhancement of the disclosure requirements of the SEC.

TABLE 1 ABOUT HERE

Panel A, Table 2 provides descriptive statistics for the variables used in the regression analysis. Five percent of the firm-year observations have at least one female tainted director and 4% of them are serving on audit committees. On average, 1% of the financial expert female tainted directors are on audit committees. An average of 27% of the sample firms have tainted directors of either gender. These values are consistent with those reported by Bhuiyan et al. (2014) and Habib and Bhuiyan (2016). The mean value of *LNAUDIT* and *REM* (*DAC*) is 14.49 and -0.051 (-0.05) respectively. A total of 12% of sample firms have proceeded through merger and acquisition, the average return on assets is 5%, and 18.1% of the firms have negative profit. The average sales growth for the firms is 8% (standard deviation = 0.21), and the average board size is 9.39 directors (standard deviation = 2.17), which is similar to those of previous studies.

Panel B, Table 2 presents the mean differences for all the variables used in the regression analysis based on three criteria; *FEMTDDUM, FEMTDACDUM* and *FEMTDACEXPDUM*. The results show that *LNAUDIT, OCF, LNAT, GROWTH, ROA, REPLAG* and *LNNAF* are higher when the sample firm has at least one female tainted director on the board or as a representative on the audit committee. The results are similarly consistent when the audit committee has a female tainted director with financial expertise. All the results are statistically significant at the 5% level. Interestingly, the mean value for *REM* is higher when no female tainted director is present on the board and this shows statistical significance at the 1% level. However, female tainted director-affiliated audit committees (also financial expert female tainted directors) report higher *REM* and the results are consistent with the existing literature on financial reporting quality. The results are also significant at the 5% level.

TABLE 2 ABOUT HERE

Panel C, Table 2 reports the correlation analysis. *REM* shows a positive correlation with all three measures of the female tainted director variable (*FEMTDDUM, FEMTDACDUM* and *FEMTDACEXPDUM*). The result indicates that female tainted director-affiliated firms practice higher real earnings management. Similarly, *LNAUDIT* has a positive correlation with all three measures of the female tainted director variable. There is a negative correlation between *LNAUDIT* and *REM*. All the correlation coefficients are statistically significant at the 5% level. The results are not surprising as real earnings management is more common in the post-SOX era and directors feel unchallenged by auditors due to the nature of the earnings management activity (Zang, 2011). The correlation between *LNAUDIT* and *LNAT* is high and significantly positive (0.80, $p < 0.01$), which is consistent to that of prior audit fee studies. It is expected that large firms will have higher audit fees. Also, the correlation coefficients between *LNAUDIT* and control variables are generally similar to those of prior research. Additionally, the correlations between the control variables show little or no sign of multicollinearity. The maximum correlation between two control variables is that of *BDSIZE* and *LNAT,* which is 0.50 ($p < 0.01$). The remaining correlations are well below 0.50. Further details of the multicollinearity tests are provided in the multivariate test results section.

4. Multivariate test results

4.1 Main Tests

Table 3 reports the results from the regression analyses of the relationship between real earnings management and proxies for female tainted directors, after controlling for other potential determinants of real earnings management. The results suggest that female tainted director-affiliated firms are positively associated with lower financial reporting quality proxied by *REM*. The coefficient of *FEMTDDUM* is 0.069**, with an associated t-statistic of 2.99. With regard to *REM* and *FEMTDACDUM*, the coefficient is 0.097** with a t-statistic of 2.46. Finally, *FEMTDACEXPDUM* shows a positive coefficient of 0.222** and a t-statistic of 2.51 with *REM*. The results are significant at the 5% level and support H1.

TABLE 3 ABOUT HERE

Among the control variables, the coefficients for operating cash flow (*OCF*), firm growth (*GROWTH*) and return on assets (*ROA*) are positive. This suggests that firms practising real earnings management are reporting higher profits, have better growth and generate more operating cash flows. In contrast, the larger firms (*LNAT*) show lower real earnings management. All the results are statistically significant at the 1% level. The coefficient on DAC in the regression model is negative and statistically significant at better than the 1% level, supporting the conjecture of managerial trade-offs between accruals and real earnings management (Cohen et al., 2008). All the t-statistics are based on standard errors adjusted by a two-dimensional cluster at the firm and year level (Petersen, 2009). The adjusted R^2 is approximately 37% in all the specifications for the predicted model.

We report the association between audit fee and female tainted directors (H2), and the moderating effect of female tainted director proxies on the relationship between audit fee and real earnings management (H3) in Table 4. The regression results provide evidence that the associations between *LNAUDIT* and female tainted director proxies have positive coefficients, indicating that higher audit fees are charged when female tainted directors are present on boards and audit committees (coefficient = 0.039*** and 0.107**; t-statistics = 5.90 and 3.02 for *FEMTDDUM* and *FEMTDACDUM* respectively). Therefore, H2 is rejected in favour of a positive association *LNAUDIT* and female tainted director proxies.

TABLE 4 ABOUT HERE

The incremental effect of female tainted director proxies on audit pricing (*LNAUDIT*) conditional on firm reporting quality (*REM*) is captured by *REM*FEMTDDUM*, *REM*FEMTDACDUM*, and *REM*FEMTDACEXPDUM* in Table 4. The results are consistent and positive for both *REM*FEMTDDUM* (coefficient = 0.143***, t-statistics = 2.62) and *REM*FEMTDACDUM* (coefficient = 0.117**, t-statistics = 1.99), indicating that firms practicing real earnings management that are represented by a female tainted director have a higher audit fee. The results are statistically significant at 1% and 5% levels, respectively. Likewise, H3 is supported by these results. The association between *LNAUDIT* and *REM* has a positive coefficient (coefficient = 0.042***, 0.044***, and 0.047***; t-statistics = 2.99, 3.19, and 3.32, respectively for the three specifications), indicating that firms practising real earnings management have higher audit fees. The associations between

LNAUDIT and *FEMTDACEXPDUM* and *REM*FEMTDACEXPDUM* are not statistically significant and the potential reason could be the limited presence of female tainted directors with financial expertise on audit committees.

The control variables also give results consistent with earlier research. *LNAUDIT* has a positive coefficient with *LNAT, BIG4, MERGER, GROWTH, ARINV, NUMSEG, PENSION, FYE, TENURE, REPLAG, VOL, FOREIGN, LNNAF* and *INDDIR*, indicating higher auditor fees for business risk, complexity and size. We also find a consistent and negative association between *LNAUDIT* and *DAC,* which indicates the information-signaling approach of discretionary accruals (Gul et al., 2003). Consistent with the earlier model, all the t-statistics are based on standard errors adjusted by a two-dimensional cluster at the firm and year level (Petersen, 2009) and the adjusted R^2 is approximately 78% for all specifications for the audit fee model. To rule out any possible existence of multicollinearity, we calculate the variable inflation factor (VIF), which shows (using untabulated results for the sake of brevity) a range of 1.05 (for *REST*) to 3.50 (for *BDSIZE*). Therefore, our regression model has no strong multicollinearity and the assumption underlying the regression model is satisfactory.

The economic significance of the results is also large. We calculate the economic significance statistics following the method of Lyon and Maher (2005). Our results indicate that the presence of female tainted directors on the board increases *REM* by 7.14%. Further, *REM* increases by 10.18% when the audit committee has a female tainted director. *REM* further worsens (24.85%) when a female tainted director on the audit committee is an accounting and finance expert. Overall, the *REM* increases by 7% to 25% due to the presence of female tainted directors either on the board or on the audit committee.

With regard to the economic significance of female tainted directors on audit fees, we find that auditors charge 3.98% higher audit fees when a board member is a female tainted director. Further, we find that audit fees are higher by 11.29% when the audit committee is served by a female tainted director. Even if the *FEMTDACEXPDUM* is not statistically significant, we find that auditors charge 18.53% higher audit fees when a female tainted director on the audit committee is an accounting and finance expert. Overall, audit fee increases by 3% to 18% in the presence of a female tainted director either on the board or on the audit committee. This is relatively higher than the 6% to 8% found by Lai et al. (2017) for the presence of female directors, in general, on boards and audit committees, respectively. Unlike Lai et al. (2017), our study is based on the supply side argument of auditors responding to the presence of female tainted directors rather than the demand side argument

of female directors, in general, demanding better audits. Our results indicate that the presence of female tainted directors is likely to lead to a higher audit fee, levied by the auditor, than the presence of female directors expecting better quality audits.

To show that female tainted directors are different from the non-tainted female directors, we conduct female directors only sub-sample tests on specifications 1 to 3 in Table 3 and Table 4. The sub-sample had 4,612 firm-year observations. The results of the sub-sample tests for the three proxies of female tainted directors are qualitatively similar to those of the full sample tests. For *REM* as the dependent variable, similar to the results of Table 3, *FEMTDDUM*, *FEMTDACDUM*, and *FEMTDACEXPDUM* have positive associations at 1% or lower significance levels. For *LNAUDIT* as the dependent variable, similar to the results of Table 4, both *FEMTDDUM* and *FEMTDACDUM* have positive associations with *LNAUDIT* at 1% or lower significance levels. Likewise, *REM*FEMTDDUM* and *REM*FEMTDACDUM* have results similar to those of Table 4 (at 5% or lower significance levels). These results confirm that female tainted directors are indeed associated with higher real earnings management and higher audit fees.

4.2 Propensity-score Matching (PSM)

We understand that the existence of female tainted directors on boards and audit committees is not a random selection. Our earlier results could be driven by systematic differences in firm characteristics between female tainted director affiliation and non-female director affiliation. Rosenbaum and Rubin (1983) suggest matching a 'treatment group' to a 'control group'. In this research, the treatment group is those firms that have female tainted directors. Using PSM, we estimate the difference in financial reporting quality (*REM*) and audit pricing (*LNAUDIT*), between firms served by female tainted directors and firms without female tainted directors. The set of covariates for the matching estimations are firm size (*LNAT*), large auditor (*BIG4*), firm complexity (*NUMSEG*), growth (*GROWTH*), profitability (*ROA*), year of the observations (*YEAR*) and industry sector (*SIC*).

TABLE 5 ABOUT HERE

Table 5 presents the PSM results for both *REM* and *LNAUDIT*. We use the nearest neighbour and callipers techniques (also known as radius matching) to perform the PSM model. Nearest-neighbour techniques match female tainted director-affiliated firms to non-

female director-affiliated firms by discarding the sample firms that have sufficiently similar propensity scores to non-female director sample firms. With regard to callipers matching, a maximum propensity score is established and all non-tainted female director-affiliated sample firms within the given radius are matched to the female tainted director-affiliated sample firms. Using PSM techniques, we find that the results are consistent with the results of the main analysis: (a) firms with female tainted directors have higher real earnings management than firms with female directors who are not tainted directors and (b) auditors cite higher audit fees when female tainted directors exist in a firm. Overall, the PSM analysis provides robust evidence for the association between the existence of female tainted directors and real earnings management and audit pricing.

4.3 Additional analysis

4.3.1 Impact of more than one 'female tainted director'

We also test the impact of more than one female tainted director. Having a single female tainted director in a male-dominated firm may not have a noteworthy influence on the decision-making process. Therefore, we separate firms having more than one female tainted director from those with a single female tainted director. A total of 73 firm-year observations are identified for firms with more than one female tainted director. The univariate analysis reveals that firms with more than one female tainted director have higher *REM* and the mean difference is statistically significant at the 5% level (mean difference = -0.043**, t-statistic = -2.09). Consistently, audit fees are significantly higher for firms with more than one female tainted director (mean difference = -0.655***, t-statistic = -5.74), which is statistically significant at the 1% level.

4.3.2 The effect of the female tainted director's experience and networks

We find that the existence of female tainted directors raises concerns about financial reporting quality, which affects the auditor's pricing decision. While the current literature does not provide evidence of the reasons for this effect, we assume that directors' networks and experience capital could be two vital aspects. We use the directors' capital proxies (*NETWORK* and *EXPERIENCE*) on financial reporting quality and audit fee regression to test for the effect of *EXPERIENCE* (average years of experience of the female tainted director) and *NETWORK* (average number of multiple directorships held by the female tainted directors). All the female tainted director proxies (*FEMTDDUM, FEMTDACDUM* and *FEMTDACEXPDUM*) show positive coefficients with *REM* (coefficient = 0.073**, 0.080**,

0.079**; t-statistics = 2.01, 2.08, 2.12) and are statistically significant at the 5% level. The coefficients for *EXPERIENCE* (coefficient = 0.001, 0.002, 0.002) and *NETWORK* (0.010, 0.009, 0.008) show no statistical significance in any of the tainted director specifications. The adjusted-R^2 is consistent with the main results at approximately 33%.

We further use the regression equation for audit fees to test the effect of tainted director experience and network capital. We find that *REM*FEMTDDUMMY* has a positive coefficient (coefficient = 0.118**, t-statistic = 2.16), which is statistically significant at the 5% level. Consistently, *REM*FEMTDACDUM* has a positive coefficient (coefficient = 0.121**; t-statistic = 2.26), which is statistically significant at the 5% level. *REM*FEMTDACEXPDUM* shows a positive coefficient (coefficient = 0.083, t-statistic = 0.64). We find that *NETWORK* has a consistent positive coefficient (coefficient = 0.048***, 0.049***, 0.046***; t-statistics = 5.29, 5.33, 5.27) but *EXPERIENCE* shows a positive coefficient with no statistical significance. Also, the adjusted R^2 is consistent with the main results at approximately 79%.

5. Conclusions

In this study, we investigate the financial reporting quality of firms that are served by female tainted directors on the board and/or audit committee. We find that the benefits of board diversity and expertise are adversely affected when a female director has a tainted professional reputation. Also, we investigate auditor responses through audit pricing relating to real earnings management activities when female tainted directors are present on the board and/or audit committee. We argue that the auditor includes the risk of governance quality in the audit pricing decision.

Our results provide evidence that firms engage in real earnings management activities when female tainted directors are serving on the board and the audit committee. We also find the presence of real earnings management activity when female tainted directors serve on the audit committee as financial experts. Also, we find that audit fee responses to real earnings management activities are significantly higher when a female tainted director is on the board and audit committee, but we do not find strong evidence for an influence of financial expert female tainted directors on audit fees.

While Lai et al. (2017) find that firms with gender-diverse boards have higher audit fees than firms with non-gender diverse boards, we demonstrate that firms with female tainted

directors have higher audit fees than firms with female directors who are not tainted directors. We believe that the additional fee charged by the auditors is a charge for the female tainted director/s on the gender-diverse board. From the perspective of the auditors, the presence of female tainted directors could increase audit risk for a firm, warranting an audit risk premium charged by the auditor.

This study contributes to the accounting, auditing and corporate governance literatures. Prior research shows that gender diversity beneficially affects corporate disclosure, financial reporting quality, audit pricing and financing costs. However, the effect of female tainted directors on a diverse board's actions has not been documented previously. We provide evidence that not all female directors are the same. These findings are important for nomination and appointments committees at the corporate level and policymakers at the market and regulatory levels. The significance of these findings for both parties is that female director alone are not a sufficient determinant of corporate image and market integrity. The reputation of female directors is also of major importance for a company's image among its stakeholders. Street and Hermanson (2019) point out that while director characteristics, such as independence and expertise, are important for good board oversight, director reputation is an important feature for organisational reputation. Restoring director reputation, they argue, is particularly important in the wake of an earnings restatement because the financial markets closely associate organizational reputation with the reputation of the board members which, in turn, is seen as an indicator of reliable accounting information.

While these results are informative, they should be treated with care. Our sample shows that the number of firms with female tainted directors is very small relative to the total number of firms, which may make the results less generalizable. Also, we did not explore why firms would select female tainted directors, or whether such directors were included for gender equality on corporate boards. A separate literature on the determinants of the appointment of tainted directors is gradually taking shape (for example, see Baer et al., 2019). We leave these and other related issues for this strand of studies.

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Table 1

Sample Distribution by Industries and by Years

Sample Distribution: Industry [N=5047]	#	Proportion
Measuring and Control Equipment	127	0.025
Steel Works Etc.	86	0.017
Machinery	220	0.044
Retail	501	0.099
Computers	167	0.033
Transportation	127	0.025
Wholesale	223	0.044
Business Services	549	0.109
Medical Equipment	186	0.037
Pharmaceuticals products	313	0.062
Automobiles and Trucks	81	0.016
Coal	22	0.004
Non-Metallic and Industrial Metal Mining	24	0.005
Electronic Equipment	271	0.054
Food Products	144	0.029
Miscellaneous	211	0.042
Textiles	16	0.003
Chemicals	219	0.043
Agriculture	17	0.003
Communication	148	0.029
Printing & Publishing	68	0.013
Healthcare	112	0.022
Construction Materials	126	0.025
Consumer Goods	126	0.025
Fabricated Products	2	0.000
Petroleum and Natural Gas	178	0.035
Personal Services	70	0.014
Entertainment	76	0.015
Defense	36	0.007
Rubber and Plastic Products	36	0.007
Electrical Equipment	84	0.017
Business Supplies	116	0.023
Aircraft	35	0.007
Apparel	91	0.018
Restaurant, Hotel, Motel	96	0.019
Shipping Containers	73	0.014
Candy & Soda	4	0.001
Recreation	31	0.006
Beer & Liquor	20	0.004
Shipbuilding, Railroad Equipment	10	0.002
Precious Metals	5	0.001
Sample Distribution: Year [N=5047]	#	%
2004	471	0.093
2005	507	0.100
2006	727	0.144
2007	838	0.166
2008	857	0.170
2009	839	0.166
2010	808	0.160

Table 2

Descriptive Statistics and Results of Bivariate Tests

PANEL A: Descriptive Statistics

Variable	*Mean*	*Std. Dev.*	*Min*	*Max*
FEMTDDUMMY	0.05	0.23	0	1
FEMTDACDUM	0.04	0.20	0	1
FEMTDACEXPDUM	0.01	0.08	0	1
FEMTD	0.27	0.44	0	1
FEMDIR	2.09	1.42	1	8
LNAUDIT	14.49	1.07	9.47	18.23
REM	-0.051	0.68	-16.93	5.10
LNAT	7.54	1.62	2.67	12.62
BIG4	0.94	0.22	0	1
MERGER	0.12	0.32	0	1
LEV	0.19	0.16	0	1.13
GROWTH	3.14	2.72	0.07	23.6
ROA	0.05	0.13	-1.51	2.09
ARINV	0.25	0.15	0	.85
LOSS	0.181	0.38	0	1
SPI	0.15	0.36	0	1
SALEGR	0.08	0.21	-0.97	1.29
NUMSEG	6.01	3.51	1	34
PENSION	0.52	0.49	0	1
FYE	0.66	0.47	0	1
TENURE	1.77	0.51	0	2.40
REPLAG	3.66	0.38	1.61	6.11
VOL	0.11	0.07	0.02	1.17
GC	0.01	0.05	0	1
FORGN	0.02	0.25	-16.34	3.25
LNNAF	11.93	3.21	0	17.49
ICW	1.01	0.26	0	1
FINANCE	0.40	0.49	0	1
REST	0.10	0.30	0	1
DAC	-0.05	0.10	-0.77	0.95
INDDIR	7.06	2.17	1	17
BDSIZE	9.39	2.17	4	19
CEODUAL	0.42	0.49	0	1

PANEL B: Mean Difference Test

	FEMTDDUM			***FEMTDACDUM***			***FEMTDACEXPDUM***		
	FEMTDDUM = 0	FEMTDDUM = 1	t-stat	FEMTDAC = 0	FEMTDAC = 1	t-stat	FEMTDACEXP = 0	FEMTDACEXP = 1	t-stat
	N = 4772	N = 275		N = 4836	N = 211		N = 5007	N = 40	
LNAUDIT	14.45	15.27	-12.64***	14.46	15.28	-10.99***	14.48	15.48	-5.89***
REM	0.06	0.05	2.49**	-0.06	-0.07	-2.54**	-0.06	0.47	-4.93***
FEMTD	0.23	1.00	-30.14***	0.25	1.00	25.64***	0.27	1.00	10.43***
FEMDIR	2.02	3.08	-12.37***	2.03	3.27	-12.60***	2.08	2.70	-3.76***
OCF	0.10	0.12	-2.60**	0.10	0.12	-2.83**	0.10	0.17	-4.27***
LNAT	7.48	8.65	-11.74***	7.49	8.71	-10.77***	7.53	8.95	-5.47***
BIG4	0.94	0.99	-3.30***	0.94	0.99	-2.65***	0.95	1.00	-1.53
MERGER	0.12	0.13	-0.55	0.12	0.13	-0.34	0.12	0.10	0.40
LEV	0.20	0.21	-1.06	0.20	0.20	0.01	0.20	0.17	0.87
GROWTH	3.10	3.85	-4.45***	3.10	4.02	-4.81***	3.12	5.57	-5.69***
ROA	0.05	0.07	-2.71**	0.04	0.07	-2.67**	0.05	0.12	-3.53***
ARINV	0.25	0.24	1.70*	0.25	0.23	2.16**	0.25	0.19	2.71**
LOSS	0.18	0.15	1.12	0.18	0.14	1.34	0.18	0.00	2.99***
SPI	0.15	0.12	1.63	0.16	0.11	1.67*	0.15	0.05	1.83*
SALEGR	0.09	0.06	1.44	0.09	0.07	1.23	0.08	0.13	-1.26
NUMSEG	5.94	7.21	-5.86***	5.96	7.09	-4.76***	6.00	6.83	-1.47
PENSION	0.51	0.72	-6.64***	0.51	0.73	-6.03***	0.52	0.65	-1.61
FYE	0.66	0.70	-1.23	0.66	0.72	-2.72**	0.66	0.60	0.85
TENURE	1.78	1.83	-1.86*	1.78	1.86	-2.51**	1.78	1.80	-0.23
REPLAG	3.69	3.57	3.83***	3.66	3.54	4.77***	3.66	3.32	5.52***
VOL	0.12	0.11	0.93	0.11	0.10	1.56	0.11	0.07	3.16***
GC	0.002	0.011	-2.63**	0.003	0.005	-0.55	0.003	1.00	0.33
FORGN	0.02	0.05	-1.51	0.02	0.05	-1.44	0.02	0.08	-1.45
LNNAF	11.86	13.20	-6.71***	11.88	13.13	-5.59***	11.92	13.31	-2.71**
ICW	1.00	0.99	0.91	1.00	0.99	1.01	1.00	0.98	0.67
FINANCE	0.40	0.48	-2.53**	0.40	0.45	-1.45	0.40	0.55	-1.84*
REST	0.10	0.06	2.29**	0.11	0.05	2.70**	0.10	0.05	1.10
DAC	-0.04	-0.05	-1.74*	-0.04	-0.06	-1.70*	-0.04	-0.09	-3.38***
INDDIR	6.99	8.13	-8.58***	7.00	8.36	-8.79***	7.04	8.83	-5.16***
BDSIZE	9.33	10.50	-8.72***	9.34	10.63	-8.49***	9.38	10.85	-4.25***
CEODUAL	0.42	0.50	-2.49**	0.42	0.50	-2.18*	0.43	0.45	-0.26

*****, **** and ***** denote significance at the 0.01, 0.05 and 0.10 levels, respectively.

PANEL C: Bivariate Correlation Analysis

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
LNAUDIT (1)	1.00															
REM (2)	-0.06***	1.00														
FEMTDDUMMY (3)	0.18***	0.04**	1.00													
FEMTDACDUM (4)	0.15***	0.04**	0.87***	1.00												
FEMTDACEXPDUM (5)	0.08***	0.07**	0.37***	0.43***	1.00											
LNAT (6)	0.80***	-0.09***	0.16***	0.15***	0.08***	1.00										
BIG4 (7)	0.25***	-0.01	0.05***	0.04**	0.02	0.25***	1.00									
MERGER (8)	0.12***	0.03*	0.01	0.00	-0.01	0.10***	0.03*	1.00								
LEV (9)	0.19***	-0.09***	0.01	0.00	-0.01	0.27***	0.11***	0.08***	1.00							
GROWTH (10)	0.01	0.26***	0.06***	0.07***	0.08***	-0.01	0.04**	-0.07***	0.06***	1.00						
ROA (11)	0.12***	0.25***	0.04**	0.04**	0.05***	0.20***	0.02	-0.02	-0.11***	0.14***	1.00					
ARINV (12)	0.03**	-0.25***	-0.02*	-0.03*	-0.04**	-0.11***	-0.04***	-0.03**	-0.16***	-0.11***	0.09***	1.00				
LOSS (13)	-0.17***	-0.11***	-0.02	-0.02	-0.04**	-0.26**	-0.06***	0.01	0.08***	-0.07***	-0.65***	-0.10***	1.00			
SPI (14)	0.03**	-0.06**	-0.02*	-0.02*	-0.03*	0.06***	0.04**	-0.04**	0.03**	-0.03*	0.10***	-0.01	-0.12***	1.00		
SALEGR (15)	-0.02	0.35***	-0.02	-0.02	0.02	0.02	0.00	0.08***	-0.03**	0.17***	0.21***	-0.03*	-0.20***	0.01	1.00	
NUMSEG (16)	0.48***	-0.01	0.08***	0.06***	0.02	0.34***	0.10***	0.05***	0.01	-0.03**	0.14***	0.10***	-0.13***	0.04**	-0.01	1.00
PENSION (17)	0.45**	-0.13***	0.09***	0.08***	0.02*	0.41***	0.14***	0.03**	0.16***	-0.05***	0.10***	0.16***	-0.15***	0.02	-0.09***	0.37***
FYE (18)	0.09***	0.00	0.02	0.03***	-0.01	0.02	0.02	0.02	0.12***	0.05***	-0.07***	-0.15***	0.07***	-0.01	0.04***	0.05***
TENURE (19)	0.18***	-0.06***	0.03*	0.04**	0.00	0.14***	0.27***	0.07***	0.03*	-0.02	0.00	-0.03*	0.00	-0.01	-0.11***	0.08***
REPLAG (20)	-0.29***	-0.10***	-0.05***	-0.07***	-0.08***	-0.44***	-0.14***	0.03**	0.04***	-0.14***	-0.23**	0.07***	0.23***	-0.02	-0.02*	-0.17**
VOL (21)	-0.23***	-0.10***	-0.01	-0.02	-0.05***	-0.30***	-0.08***	-0.02	0.07***	-0.10***	-0.33***	-0.01	0.38***	-0.03*	-0.15***	-0.13***
GC (22)	-0.01	-0.03**	0.04**	0.01	0.00	-0.02	0.01	-0.01	0.04**	-0.03*	-0.11***	0.01	0.08***	-0.02	-0.02*	-0.01
FORGN (23)	0.09***	0.05***	0.02	0.02	0.02	0.09***	0.01	0.01	-0.04**	0.03**	0.16***	0.01	-0.11***	0.02	0.05***	0.09***
LNNAF (24)	0.51***	0.00	0.09***	0.08***	0.04**	0.49***	0.21***	0.07***	0.12***	0.03**	0.11***	0.01	-0.14***	0.01	0.02	0.27***
ICW (25)	0.08***	0.03**	-0.01	-0.01	-0.01	-0.02	0.00	0.01	0.01	-0.03*	-0.03**	0.00	0.07***	0.02*	-0.01	0.01
FINANCE (26)	0.16***	-0.02	0.04**	0.02	0.03*	0.19***	0.06***	0.04**	0.03**	0.04**	0.10***	0.03*	-0.13***	0.02*	0.03**	0.08***
REST (27)	-0.06***	0.01	-0.03**	-0.04**	-0.02	-0.07***	-0.01	-0.02	0.02	-0.03**	-0.02	-0.01	0.04**	0.01	0.01	-0.03**
DAC (28)	-0.03**	-0.26***	0.02*	0.02*	-0.05***	-0.15***	-0.02*	-0.04**	0.06***	-0.18***	-0.43***	0.09***	0.35***	0.01	-0.17***	-0.05**
INDDIR (29)	0.51***	-0.02	0.12***	0.12***	0.07***	0.53***	0.19***	0.03**	0.12***	0.05***	0.08***	-0.01	-0.14**	0.04**	-0.04***	0.29**
BDSIZE (30)	0.50***	-0.04**	0.12***	0.12***	0.06***	0.58***	0.16***	0.04**	0.17***	0.02	0.08***	-0.04**	-0.15***	0.05***	-0.03**	0.26***
CEODUAL (31)	0.10***	-0.03*	0.04***	0.03***	0.00	0.09***	0.00	0.05***	0.07***	-0.03**	0.03***	-0.01	-0.03**	0.00	-0.04**	0.05***
FEMDIR (32)	0.24***	-0.02**	0.16***	0.17***	0.06**	0.25***	0.08***	0.06***	0.06***	0.03***	0.01	-0.03	0.00	-0.01	-0.15***	0.05
OCF (33)	0.08***	0.25***	0.04***	0.04***	0.06***	0.17***	0.05***	-0.03**	-0.09***	0.14***	0.60***	0.00	-0.41***	0.01	0.12***	0.08***

***, ** and * denote significance at the 0.01, 0.05 and 0.10 levels, respectively.

Variables	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
PENSION (17)	1.00																
FYE (18)	0.03**	1.00															
TENURE (19)	0.08***	0.08***	1.00														
REPLAG (20)	-0.19***	0.06***	-0.11***	1.00													
VOL (21)	-0.17***	0.03**	0.04**	0.22***	1.00												
GC (22)	-0.01	0.02	-0.02	0.06***	0.07***	1.00											
FORGN (23)	0.05***	-0.01	0.00	-0.07***	-0.05***	0.00	1.00										
LNNAF (24)	0.26***	-0.01	0.15***	-0.22***	-0.20***	-0.02	0.04***	1.00									
ICW (25)	-0.01	0.09***	0.04**	0.12***	0.03**	0.03**	0.00	-0.04**	1.00								
FINANCE (26)	0.12***	0.02*	0.04***	-0.09***	-0.16***	-0.01	0.01	0.11***	0.00	1.00							
REST (27)	-0.03**	0.01	-0.06***	0.07***	0.02	0.04***	-0.01	-0.04**	0.03*	-0.02	1.00						
DAC (28)	-0.01	0.04**	-0.00	0.17***	0.14***	-0.08*	-0.14***	-0.06***	0.03**	-0.05**	-0.02*	1.00					
INDDIR (29)	0.41***	0.00	0.13***	-0.29***	-0.21***	0.00	0.03**	0.31***	-0.01	0.14***	-0.05***	-0.07***	1.00				
BDSIZE (30)	0.37***	-0.05***	0.10***	-0.27***	-0.21***	0.00	0.03**	0.34***	-0.05***	0.14***	-0.05***	-0.08***	0.79***	1.00			
CEODUAL (31)	0.10***	0.03**	0.13***	-0.03**	0.04***	-0.02*	-0.01	0.00	0.06***	0.02	-0.02	-0.01	0.11***	-0.02	1.00		
FEMDIR (32)	0.16***	-0.04**	0.16***	-0.12***	0.05**	-0.02	0.00	0.16***	-0.01	0.03**	0.05***	0.03**	0.30***	0.29***	0.14***	1.00	
OCF (33)	0.04***	-0.08***	0.03**	-0.21***	-0.21***	-0.06***	0.20***	0.08***	-0.01	0.06***	-0.78***	-0.02	0.06***	0.07***	0.04**	0.04**	1.00

***, ** and * denote significance at the 0.01, 0.05 and 0.10 levels, respectively.

Table 3

Regression Analysis – Real Earnings Management and Female Tainted Directors

$$REM_{it} = \beta_0 + \beta_1 FEMTD + \beta_2 INDDIR + \beta_3 BDSIZE + \beta_4 CEODUAL + \beta_5 LNAT + \beta_6 BIG4 + \beta_7 LEV + \beta_8 GROWTH + \beta_9 ROA + \beta_{10} OCF + \beta_{11} DAC + YEAR\ \&\ INDUSTRY + \varepsilon \ldots\ldots(1)$$

Variables [DEP = REM]	Base Model	Specification1	Specification2	Specification3
Constant	0.162**	-0.023	-0.005	-0.002
	[2.53]	[-0.17]	[-0.96]	[-0.98]
FEMDIR	**0.039*** **			
	[5.32]			
FEMTDDUM		**0.069*** **		
		[2.99]		
FEMTDACDUM			**0.097** **	
			[2.46]	
FEMTDACEXPDUM				**0.222** **
				[2.51]
INDDIR	0.002	0.009	0.008	0.008
	[0.26]	[1.38]	[1.32]	[1.32]
BDSIZE	0.001	0.003	0.004	0.005
	[0.001]	[0.60]	[0.61]	[0.65]
CEODUAL	-0.024	-0.004	-0.003	-0.001
	[-1.22]	[-0.23]	[-0.20]	[-0.19]
LNAT	-0.070***	-0.057***	-0.057***	-0.053***
	[9.68]	[-8.39]	[-8.38]	[-8.31]
BIG4	0.019	-0.048	-0.046	-0.046
	[0.48]	[-1.35]	[-1.30]	[-1.29]
LEV	-0.175***	-0.056	-0.049	-0.050
	[-3.16]	[-0.94]	[-0.92]	[-0.93]
GROWTH	0.054***	0.044***	0.044***	0.044***
	[16.29]	[14.54]	[14.49]	[14.49]
ROA	0.902***	1.030***	1.031***	1.029***
	[10.45]	[13.35]	[13.39]	[13.38]
OCF	0.907***	0.787***	0.785***	0.778***
	[8.44]	[7.96]	[7.94]	[7.88]
DAC	-0.164***	-0.275***	-0.275***	-0.274***
	[-9.01]	[-14.60]	[-14.61]	[-14.59]
FIRM CONTROL	YES	YES	YES	YES
YEAR CONTROL	YES	YES	YES	YES
F-statistics	67.90***	45.28***	45.23***	45.24***
Adj R-squared	18.67	37.84	37.83	37.00
N	5047	5047	5047	5047

***, ** and * denote significance at the 0.01, 0.05 and 0.10 levels, respectively.

Table 4

Impact of REM on Audit Fees – Moderating Role of Female Tainted Directors

$$LNAUDIT_{it} = \mu_0 + \mu_1 FEMTD + \mu_2 REM + \mu_3 REM * FEMTD + \mu_4 INDDIR + \mu_5 BDSIZE + \mu_6 CEODUAL + \mu_7 LNAT + \mu_8 BIG4 + \mu_9 GROWTH + \mu_{10} ROA + \mu_{11} MERGER + \mu_{12} LEV + \mu_{13} ARINV + \mu_{14} LOSS + \mu_{15} SPI + \mu_{16} SALEGR + \mu_{17} NUMSEG + \mu_{18} PENSION + \mu_{19} FYE + \mu_{20} TENURE + \mu_{21} REPLAG + \mu_{22} VOL + \mu_{23} GC + \mu_{24} FOREIGN + \mu_{25} LNNAF + \mu_{26} ICW + \mu_{27} FINANCE + \mu_{28} REST + \mu_{29} DAC + YEAR \,\&\, INDUSTRY + \varepsilon \ldots\ldots (2)$$

Variable [DEP = LNAUDIT]	Base Model	Specification 1	Specification 2	Specification 3
Constant	8.228***	7.922***	7.935***	7.868***
	[61.26]	[45.92]	[46.38]	[45.58]
FEMDIR	**0.019*** **			
	[3.07]			
FEMTDDUM		**0.039*** **		
		[5.90]		
FEMTDACDUM			**0.107*** **	
			[3.02]	
FEMTDACEXPDUM				**0.170**
				[1.57]
REM	0.064***	0.042***	0.044***	0.047***
	[3.09]	[2.99]	[3.19]	[3.32]
REM*FEMTDDUM		**0.143** **		
		[2.62]		
REM*FEMTDACDUM			**0.117** **	
			[1.99]	
REM*FEMTDACEXPDUM				**0.079**
				[0.76]
REM*FEMDIR	0.018**			
	[2.17]			
INDDIR	0.040***	0.029***	0.029***	0.029***
	[6.33]	[4.87]	[4.87]	[4.91]
BDSIZE	-0.026***	-0.008	-0.009	-0.011
	[-4.15]	[-1.35]	[-1.33]	[-1.23]
CEODUAL	-0.001	0.025	0.022	0.023
	[-0.08]	[1.53]	[1.59]	[1.59]
LNAT	0.478***	0.517***	0.521***	0.537***
	[66.24]	[66.97]	[67.84]	[67.03]
BIG4	0.113***	0.096**	0.092***	0.098**
	[3.33]	[2.67]	[2.97]	[2.66]
GROWTH	0.016***	0.009***	0.013***	0.014***
	[5.23]	[3.10]	[3.69]	[3.71]
ROA	-0.486***	-0.290***	-0.291***	-0.289***
	[-5.97]	[-3.72]	[-3.73]	[-3.69]
MERGER	0.010***	0.038*	0.044*	0.043*
	[4.27]	[1.71]	[1.78]	[1.79]
LEV	-0.257***	-0.127**	-0.120**	-0.124*
	[-4.25]	[-2.41]	[-2.35]	[-2.36]
ARINV	0.756***	0.856***	0.835***	0.845***
	[13.25]	[12.76]	[12.14]	[12.96]
LOSS	0.053**	0.049*	0.042*	0.044*
	[1.99]	[1.90]	[1.66]	[1.76]
SPI	-0.032	-0.006	-0.007	-0.005
	[-1.50]	[-0.31]	[-0.37]	[-0.31]
SALEGR	-0.152***	-0.165***	-0.171***	-0.169***
	[-3.52]	[-4.17]	[-4.32]	[-4.22]
NUMSEG	0.054***	0.037***	0.039***	0.037***
	[22.18]	[14.48]	[14.53]	[14.52]
PENSION	0.118***	0.093***	0.094***	0.092***
	[6.84]	[5.07]	[5.06]	[4.99]
FYE	0.142***	0.115***	0.115***	0.119***
	[8.50]	[6.77]	[6.72]	[6.69]
TENURE	0.080***	0.064***	0.063***	0.062***
	[4.85]	[3.86]	[3.83]	[3.85]
REPLAG	0.241***	0.268***	0.269***	0.269***
	[10.47]	[11.47]	[11.45]	[11.54]

VOL	0.114	0.545***	0.553***	0.551***
	[0.84]	[4.21]	[4. 23]	[4.29]
GC	-0.025	-0.016	-0.021	-0.029
	[-0.17]	[-0.11]	[-0.21]	[-0.28]
FOREIGN	0.075***	0.059**	0.060**	0.067**
	[3.76]	[2.13]	[2.16]	[2.26]
LNNAF	0.034***	0.025***	0.025***	0.025***
	[12.54]	[9.42]	[9.25]	[9.27]
ICW	0.245***	0.247***	0.247***	0.247***
	[8.65]	[8.95]	[8.88]	[8.87]
FINANCE	-0.015	-0.003	-0.002	-0.004
	[-0.91]	[-0.19]	[-0.16]	[-0.17]
REST	0.004	0.001	0.003	0.003
	[0.37]	[0.05]	[0.11]	[0.11]
DAC	0.079***	0.036***	0.037**	0.035***
	[4.85]	[3.54]	[2.19]	[2.33]
FIRM CONTROL	YES	YES	YES	YES
YEAR CONTROL	YES	YES	YES	YES
F-statistics	329.21***	215.29***	213.90***	213.53***
Adj R-squared	74.98	78. 67	78.56	78.17
N	5047	5047	5047	5047

***, ** and * denote significance at the 0.01, 0.05 and 0.10 levels, respectively.

Table 5

Propensity-score Matching

Panel A: Post Estimation Results for PSM

Outcome = REM	Treated = **FEMTDDUM**				
Method	Treated	Controlled	Difference	S.E	t-stat
Unmatched	0.05	-0.06	0.11	0.04	-2.49**
Nearest Neighbour	0.05	-0.10	0.15	0.06	2.77**
Kernel	0.05	-0.05	0.10	0.04	2.70**
Radius (Calliper = 0.10)	0.05	-0.04	0.09	0.05	2.10**
Radius (Calliper = 0.05)	0.05	-0.05	0.10	0.05	2.11**
Radius (Calliper = 0.005)	0.05	-0.07	0.12	0.04	2.36

Outcome = LNAUDIT	Treated = **FEMTDDUM**				
Method	Treated	Controlled	Difference	S.E	t-stat
Unmatched	15.27	14.45	0.83	0.07	12.64***
Nearest Neighbour	15.27	14.89	0.38	0.10	3.82***
Kernel	15.27	14.60	0.67	0.07	9.25***
Radius (Calliper = 0.10)	15.27	14.89	0.38	0.08	4.24***
Radius (Calliper = 0.05)	15.27	14.89	0.38	0.08	4.24***
Radius (Calliper = 0.005)	15.27	14.90	0.37	0.09	4.37***

Panel B: Propensity Score Match Results

Variables [DEP = REM]	**DEP = REM**		**DEP = LNAUDIT**	
	Nearest Neighbour	Callipers 0.10	Nearest Neighbour	Callipers 0.10
Constant	0.744*** [3.12]	0.747*** [3.09]	0.871*** [6.22]	0.878*** [5.98]
FEMTDDUM	**0.074***** **[3.07]**	**0.145***** **[3.09]**	**0.089**** **[1.98]**	**0.092**** **[2.13]**
REM	-	-	0.163** [1.99]	0.172** [2.13]
*REM*FEMTDDUM*	-	-	0.219** [2.13]	0.217** [2.19]
INDDIR	-0.008 [-0.55]	-0.017 [-1.09]	0.063** [2.13]	0.053*** [3.79]
BDSIZE	0.019 [1.25]	0.029* [1.72]	-0.022 [-1.09]	-0.029* [-1.70]
CEODUAL	-0.042 [-0.49]	-0.014 [-0.28]	-0.143** [-2.86]	-0.089** [-2.09]
LNAT	-0.054*** [-3.69]	-0.059*** [-3.68]	0.552*** [8.51]	0.524*** [8.74]
BIG4	-0.246*** [-3.62]	-0.312*** [-3.69]	0.053* [1.89]	-0.061* [-1.79]
LEV	-0.029 [-1.49]	-0.031 [1.20]	-0.083 [-0.73]	0.084 [0.78]

GROWTH	0.034*** [5.72]	0.029*** [5.35]	0.136** [1.99]	0.141** [2.12]
ROA	1.70*** [6.39]	1.591*** [6.68]	-0.281 [-1.07]	-0.327 [-1.31]
OCF	1.89*** [5.73]	2.239*** [5.90]		
ARINV			0.981*** [4.87]	0.899*** [4.77]
LOSS			0.009 [0.17]	0.011 [0.29]
SALEGR			-0.318*** [-2.61]	-0.292*** [-3.09]
NUMSEG			0.027*** [3.41]	0.029*** [4.05]
PENSION			-0.098* [-1.67]	-0.013 [-0.24]
FYE			0.117** [2.19]	0.086** [2.06]
TENURE			-0.021 [-0.79]	-0.031 [-0.67]
REPLAG			0.374*** [5.24]	0.329*** [5.31]
VOL			0.682 [1.54]	0.768** [2.08]
GC			-0.064 [-0.23]	-0.037 [-0.14]
FOREIGN			0.743* [1.71]	0.513* [1.69]
LNNAF			0.072*** [6.07]	0.069*** [7.31]
ICW			0.123 [1.27]	0.182** [2.23]
FINANCE			-0.010 [-0.35]	-0.021 [-0.53]
SPI			-0.002 [-0.53]	-0.001 [-0.84]
MERGER			0.056** [2.09]	0.049* [1.70]
REST			0.052 [0.53]	-0.011 [-0.16]
DAC	-0.299*** [-4.75]	-0.293*** [-3.39]	0.419*** [3.79]	0.435*** [3.99]
FIRM CONTROL	YES	YES	YES	YES
YEAR CONTROL	YES	YES	YES	YES
F-statistics	18.89***	17.78***	43.91***	51.22***
Adj R-squared	62.28	62.19	84.11	84.39
N	530	530	530	530

Appendix – A: Definitions of Variables

FEMTD	Total number of female tainted directors
FEMDIR	Total number of female directors
INDDIR	The ratio of total independent directors to total directors
BDSIZE	The natural logarithm of the total number of board members
CEODUAL	Dummy variable, 1 if the CEO and chairman are the same individuals, and 0 otherwise
LNAT	Natural logarithm of total assets
BIG4	Coded 1 if the firm is audited by Deloitte & Touche, Ernst & Young, KPMG, or PricewaterhouseCoopers, and 0 otherwise
LEV	Total long-term debt divided by total assets
GROWTH	Market value of equity divided by the book value of equity
ROA	Return on assets (earnings before extraordinary items plus discontinued operation for the preceding year divided by total assets for the same year)
OCF	The ratio of cash flow from operating activities to total assets
FEMTDDUM	Dummy variable; 1 if at least one or more of the female board members have been personally involved as a director or executive in one or more corporate bankruptcies, major litigations or corporate infractions, major accounting restatements and other accounting scandals or have served on compensation committees that have approved particularly egregious CEO compensation packages, or other similar circumstances, and 0 otherwise
FEMTDACDUM	Dummy variable, 1 if at least one or more female audit committee members are identified as FEMTDDUM, and 0 otherwise.
FEMTDACEXPDUM	Dummy variable; 1 if at least one or more of the female audit committee accounting expert members have are identified as FEMTDDUM, and 0 otherwise.
MERGER	Coded 1 if the firm has been involved in a merger or acquisition, and 0 otherwise
ARINV	The ratio of accounts receivables to inventory
LOSS	Coded 1 if a firm's net income before extraordinary items is negative, and 0 otherwise
SPI	Coded 1 if a firm reports special items, and 0 otherwise
SALEGR	Growth rate in sales over the previous fiscal year
NUMSEG	The natural log of the number of a firm's business segments
PENSION	Coded 1 if a firm has pension plans, and 0 otherwise
FYE	Coded 1 if a firm's fiscal year-end is December 31, and 0 otherwise
TENURE	The natural log of the auditor's tenure with a client (in years)

REPLAG	The natural log of the number of days between the fiscal year-end and the annual earnings announcement date
VOL	Standard deviation of stock returns over the past year with a minimum of 8 months data
GC	Dummy variable, 1 for the firm received going concern opinion, 0 for otherwise
FOREIGN	The percentage of foreign sales to total sales
LNNAF	The natural logarithm of total non-audit fees
LNAUDIT	The natural logarithm of total audit fees
ICW	Dummy variable, 1 if Internal control weakness disclosures following SOX S404(b) or S302, 0 otherwise
FINANCE	Coded 1 if the firm issues equity or debt in the subsequent year, and 0 otherwise
REST	Coded 1 if a firm has had a financial statement restatement, and 0 otherwise
DAC	Discretionary accruals derived using the cross-sectional modified Jones model that controls for performance (Dechow *et al.*, 1995; Kothari *et al.*, 2005). We estimate the following Model for all firms in the same industry (using the SIC two-digit industry code) with at least eight observations in an industry in a particular year. *DAC* is then the residual from model (3), i.e., *DAC=ACC-NDAC*. Where *ACC* = Net income operating cash flows (*OCF*)/Lagged total assets. All the variables are scaled by previous year's total assets. $ACC_t = \alpha_0(1/Assets_{t-1}) + \alpha_1 \Delta Sales_t - \Delta RECEIVABLE_t + \alpha_2 PPE_t + \alpha_3 ROA_{t-1} + \varepsilon_t$ … (3)
REM	Real earnings management is the sum of *ACFO - APROD + ADISX*; where *ACFO* is the level of abnormal cash flows from operations, *APROD* is the level of abnormal production costs, and *ADISX* is the level of abnormal discretionary expenses (Roychowdhury, 2006). Following Roychowdhury (2006), we use abnormal cash flows from operations (*ACFO*) as the first measure of REM. *ACFO* is computed by estimating the following regression model within each two-digit SIC industry and year: $CFO/TA_{-1} = a_0 (1/TA_{-1}) + a_1 (SALES/TA_{-1}) + a_2 (\Delta SALES/TA_{-1}) + \varepsilon$ … (4a) where *CFO* is cash flows from operations and other variables are defined in Model (3). Firm and time indicators are suppressed in all the models. After estimating parameters in Model (4a), *ACFO* is computed as the residual value of Model (4a). We multiply the residuals from (4a) by -1 (i.e., -*ACFO*) so that higher values of -*ACFO* indicate income-increasing REM because the sales manipulation leads to lower values of abnormal cash flows. We use *ADISX* as the second measure of REM. Discretionary expenditures are defined as the sum of advertising expenses, R&D expenses, and selling, general and administrative expenses (Roychowdhury, 2006). We estimate the following regression and use its residual value to measure *ADISX*: $DISX/TA_{-1} = a_0 (1/TA_{-1}) + a_1 (SALES_{-1}/TA_{-1}) + \varepsilon$ … (4b)

where *DISX* is discretionary expenses. $SALES_{-1}$ is lagged sales. We multiply the residuals from the estimation model of *DISX* by -1 (i.e., -*ADISX*) so that higher values of -*ADISX* indicate income-increasing REM. The third measure of REM is abnormal production costs (*APROD*), where production costs (*PROD*) are measured as the sum of cost of goods sold and change in inventory (Roychowdhury, 2006). The residual from the following regression is used to measure *APROD*:

$$PROD/TA_{-1} = a_0\,(1/TA_{-1}) + a_1\,(SALES/TA_{-1}) + a_2\,(\Delta SALES/TA_{-1}) + a_3\,(\Delta SALES_{-1}/TA_{-1}) + \varepsilon \ldots (6$$

A high value of *APROD* indicates higher REM, as production costs are abnormally high when managers opportunistically use overproduction to lower the cost of goods sold.