

Corporate Governance Mechanisms, Whistle-Blowing Policy and Real Earnings Management

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Abstract

The purpose of this study is to investigate whether the mechanisms of corporate governance (CG) in firms that have a policy of whistle-blowing (WBP) are more effective in mitigating real earnings management (REM) than those without WBP. To achieve this objective, a sample of 288 Malaysian firms for the years 2013 to 2015, have been grouped into firms with and without WBP. In addition, the Roychowdhury Models were used to determine the abnormal levels of the REM. The results show that most of the CG mechanisms, i.e., audit committee (AC) size, AC meetings, AC independence and auditor size in firms with WBP are found to be significantly associated with low level of REM, supporting agency and resource dependence theories. However, only board independence and ownership concentration are found to be significantly associated with high level of REM. Regarding firms without WBP, most of the CG mechanisms, i.e., AC size, women in the AC, AC accounting expertise and ownership concentration, are found to be significantly associated with a high level of REM. However, only board meetings, AC multiple directorships and auditor size are found to be significantly associated with low level of REM. The findings of this study suggest that having WBP in a firm could improve the monitoring role of the CG mechanisms towards mitigating REM. However, strengthening the role of WBP is still necessary to improve the efficiency of the monitoring role of CG mechanisms. Hence, there is a need for more policies that could encourage whistle-blowers to disclose any misconducts in firms and at the same time, prevent management from undermining the effectiveness of the whistle-blowing policy. The findings of this study will enrich the body of literature due to the absence of studies that examine the influence of WBP on REM.

Keywords: corporate governance, real earnings management, whistle-blowing policy, Malaysia

1. Introduction

Management has the responsibility to produce a reliable and accurate financial report for stakeholders. However, when managers fail to fulfil their obligations, they practice earnings management (EM) by exploiting the flexibility of the accounting principles or daily operational activities. This act may hide the firm's actual financial condition, thereby delaying its collapse (Jones, 2011). Subsequently, it will force the management to indulge in reporting inaccurate accounting information or engaging in fraud (Abdul-Rahman & Ali, 2006; Jones, 2011; Kazemian & Sanusi, 2015). Previous studies provided evidence that managing earnings would result in fraud practices (Hasnan, Abdul-Rahman, & Mahenthiran, 2013; Perols & Lougee, 2011; Sulaiman, Danbatta, & Rahman, 2014). The issue of managing earnings continues to be a prevalent topic in the field of accounting (Ayedh, Fatima, & Mohammad, 2019; Chandren, 2016; Chandren, Ahmad, & Ali, 2017; Inaam & Khamoussi, 2016; Jones, Krishnan, & Melendrez, 2008; Soliman & Ragab, 2014; Teh, San Ong, & Ying, 2017; Vladu, 2015; Xu & Ji, 2016), where it needs to be studied further, particularly in Malaysia (Ahmed, 2017; Buniamin, Johari, Rahman, & Rauf, 2012; Hamid, Hashim, & Salleh, 2012; Nia, Huang, & Abidin, 2015; Teh *et al.*, 2017). Furthermore, various measures could be implemented to limit EM practice (Alves, 2012; Kazemian & Sanusi, 2015); governments should develop stricter security laws and regulations for publicly traded companies to prevent EM practices (Liu & Wang, 2017).

According to agency theory and previous studies, the mechanisms of corporate governance (CG), e.g., board of directors (BOD), audit committee (AC), ownership structure and internal and external control, could reduce agency problems and EM practices (Fama & Jensen, 1983; Jensen & Meckling, 1976; Klein, 2002). However, in Asian countries, researchers have argued that CG mechanisms are not efficient in mitigate agency problems (Cheung &

Chan, 2004; Claessens & Fan, 2002). Further, Nam and Nam (2004) stated that the main reason for the 1997 Asian Financial Crisis was the weakness of CG. In the context of Malaysia, the swift economic meltdown of Malaysia in the midst of 1997 uncovered the effects of poor CG (Abdul-Rahman & Ali, 2006; Ow-Yong & Kooi-Guan, 2000). Hence, this situation has resulted in significant efforts by the Malaysian government to improve the efficiency of CG (Hassan, Moyes, Mohd-Sanusi, & Iskandar, 2010; Rachagan & Kuppusamy, 2013; Zainal Abidin & Ahmad, 2007), starting with the establishment of a strong Finance Committee on Corporate Governance (FCCG) in 1999 (Zainal Abidin & Ahmad, 2007) for reviewing and reforming Malaysia's CG, and the revision of the Malaysian Code of Corporate Governance (MCCG) in 2000, 2007, 2012 and finally in 2017. This indicates that the mechanisms of CG in Malaysian firms are insufficient in preventing EM. Thus, there is a need to improve CG (Mohammad, Wasiuzzaman, & Salleh, 2016).

The aim of this study is to investigate whether the mechanisms of CG in firms that have a policy of whistle-blowing (WBP) are more effective in mitigating real earnings management (REM) than those without WBP. This study proposes that functional and effective governance can be attained by having a WBP, which may significantly reduce EM activities. The establishing of a policy such as WBP in a firm could enhance the flow of the firm's information to directors, who in many cases have full-time jobs in other corporations. Further, WBP could create a diversity of sources of data acquisition regarding the relevant firm-specific information instead of relying on the chief executive officer (CEO). Moreover, it encourages firms' accountants, auditors and external auditors to report the wrongdoings sooner. Thus, the existence of WBP could improve the monitoring role of CG mechanisms (Alam, 2009; Bowen, Call, & Rajgopal, 2010; Friebel & Guriev, 2012; Mak, 2007; Meng & Fook, 2011; Packin & Edwards, 2016; Schultz & Harutyunyan, 2015). Many CG codes, including the MCCG, have required firms to formulate the WBP. Thus, studies on whistle-blowing policies are very much needed to guide the regulators and firms, especially in Malaysia, to establish a suitable policy that can encourage employees to expose unethical behaviour within their organization (Ahmad, Ismail, & Azmi, 2013). Moreover, Shawver and Shawver (2007) called for future research to examine practicing accountants' beliefs regarding whistle-blowing policy in EM situations.

Upon reviewing previous studies, there is only one study that has examined the influence of CG mechanism in firms with WBP on mitigating the accrual earnings management (AEM), as a common proxy of EM (Al-Absy, Ku Ismail, & Chandren, 2019a). However, none has examined that relationship with REM, as the latest proxy of EM. REM is a new issue (Sun, Lan, & Liu, 2014), which has not been adequately addressed by most regulators (Francis, Hasan, & Li, 2016), and not been much investigated in Malaysia (Kalgo, Noordin, Nahar, & Turmin, 2015). It has been argued that managers have turned away from AEM to REM (Nia, Sinnadurai, Sanusi, & Hermawan, 2017), particularly following the implementation of the International Financial Reporting Standards (IFRSs) (Khoo & Ahmad-Zaluki, 2015; Wan Ismail, Kamarudin, Zijl, & Dunstan, 2013) introduced by the International Accounting Standards Board (Al-Absy & Ku Ismail, 2019; Al-Absy, Ku Ismail, & Al-Dubai, 2016). Like in many other countries, some evidence on REM in Malaysia has been documented. Enomoto, Kimura, and Yamaguchi (2015) found that the aggregate score of REM in Malaysia is the 6th highest among 38 countries (33.5). Further, Francis et al. (2016) found that the mean values of abnormal discretionary expenses and abnormal production costs of Malaysian firms are 0.024 and 0.048, (ranked 28th and 29th among 38 countries), respectively. Likewise, Lemma, Negash, Mlilo, and Lulseged (2018) found that the mean of REM in Malaysia is 0.502, which is the 30st highest among 41 countries. Therefore, this study contributes to the body of knowledge by extending the previous study by Al-Absy *et al.* (2019a) and focusing on REM instead of AEM. This study would assist policymakers and stakeholders in improving the role of CG by highlighting the importance of having a WBP in a firm.

2. Literature Review

Managers, as agents, will not always act in the best interests of the principals (shareholders). Isolating the principals from managing a company's activities and delegating this task to management may motivate managers to behave opportunistically for their own benefit. This situation leads principals to look for some mechanisms that can allow them to control the agent's decisions better, thereby preventing the agent from making decisions that may affect the principal's interests. The agency theory introduced by Fama and Jensen (1983) provides theoretical support for the implementation of CG mechanisms in EM related studies. Besides agency theory, the resource dependence theory plays an essential role in improving firm governance and managers' directions. The resource dependence theory asserts that firms should obtain vital resources from the environment (Salancik & Pfeffer, 1978). Based on this theory, the BOD can increase firm value, i.e., by accessing resources and information (Boyd, 1990); linking firms to their stakeholders (Lückerath-Rovers, 2009); and providing experience and knowledge (Hillman, Cannella, & Paetzold, 2000).

Consequently, previous studies have extensively examined the influence of BOD mechanisms, i.e., CEO chairmanship (Abdul-Rahman & Ali, 2006; Saleh, Iskandar, & Rahmat, 2005) chairman independence (Al-Zyoud, 2012; Habbash, 2011; Mohammad *et al.*, 2016), board independence (Chandren, Ahmad, & Ali, 2015; Ku Ismail & Abdullah, 2013; Mansor, Che-Ahmad, Ahmad-Zaluki, & Osman, 2013), board size (Abdullah & Ku Ismail, 2016; Mohammad *et al.*, 2016; Zalata, Tauringana, & Tingbani, 2018), board meetings (Ahmed, 2017; Mansor *et al.*, 2013; Mohammad *et al.*, 2016), women on the boards (Abdullah & Ku Ismail, 2012, 2016; Buniamin *et al.*, 2012; Ku Ismail & Abdullah, 2013), board directors with corporate background and experience (Ahmed, 2017; Buniamin *et al.*, 2012; Xie, Davidson, & DaDalt, 2003) and board directors with multiple directorships (Baccouche & Omri, 2014; Chandren *et al.*, 2015; Jamaludin, Sanusi, & Kamaluddin, 2015) on mitigating the level of EM. Further, other studies also have extensively examined the influence of AC mechanisms, i.e., AC size (Abdullah & Ku Ismail, 2016; Al-Rassas & Kamardin, 2015; Mansor *et al.*, 2013), AC meeting (Abdul-Rahman & Ali, 2006; Al-Rassas & Kamardin, 2015; Ishak, Haron, Salleh, & Rashid, 2011), AC independence (Abdul-Rahman & Ali, 2006; Al-Rassas & Kamardin, 2016; Haji-Abdullah & Wan-Hussin, 2015), women in the AC (Ku Ismail & Abdullah, 2013; Salleh & Haat, 2013), AC accounting expertise (Al-Rassas & Kamardin, 2016; Mohammad *et al.*, 2016; Zalata *et al.*, 2018), and AC multiple directorships (Baccouche, Hadriche, & Omri, 2013; Jamaludin *et al.*, 2015; Yang & Krishnan, 2005) on mitigating the level of EM.

However, the results of above-mentioned studies are inconsistent. Furthermore, previous studies did not provide definitive conclusions regarding the effectiveness of BOD in mitigating EM (Baccouche & Omri, 2014), particularly in Malaysia where there is a need for improving the role of CG in mitigating the level of EM (Mohammad *et al.*, 2016). Likewise, previous studies have not established a definitive relationship between the AC mechanisms and EM. In the context of Malaysia, ACs have yet to achieve massive success in their monitoring duty (Abdul-Rahman & Ali, 2006). Although the majority of firms have implemented the MCCG, ACs have not been effective in constraining EM (Chandrasegaram, Rahimansa, Rahman, Abdullah, & Mat, 2013). Thus, more studies are recommended (Al-Rassas & Kamardin, 2016; Chandrasegaram *et al.*, 2013; Inaam & Khamoussi, 2016).

The revised Code of CG in Malaysia has continually attempted to improve the role of CG mechanisms, namely the BOD and its committees. Indeed, the independence of the BOD is the primary concern of the MCCG. The MCCG 2000 and 2007 required at least one third of the board to be independent directors; the MCCG 2012 required a majority of directors to be independent in the case where the board chairman is not an independent director, and currently, the MCCG 2017 requires at least half of the board to be independent; however, in large companies, it requires a majority of directors to be independent. Furthermore, other concerns have also been highlighted in the revised codes, such as the separate roles of the chairman and the CEO. The MCCG 2001 and 2007 required the position of the CEO and Board Chairman to be held by a different person. Otherwise, the board should explain the reasons for one person occupying both positions. The MCCG 2012 did not allow this combination; it also required the chairman to be a non-executive director. Currently, the MCCG 2017 has an additional requirement, in which the chairman of the AC has to be a different person from the board chairman. This is to enhance the objectivity of the board in reviewing the AC's findings and recommendations. More policies have also been introduced by the MCCG to strengthen and balance the board composition. The Malaysian Government policy stipulates that 30% of the board must be women by 2016 (currently revised to 2020). Importantly, to ensure the compliance of listed companies with this policy, the MCCG 2012 required the board to establish and disclose its gender diversity policy and how this target will be achieved. The MCCG 2017 is mandating large companies to have at least 30% of women directors.

In terms of the board committees, the board is required to establish an AC of at least three directors. In terms of the independent directors in the AC, the MCCG 2000 required a majority of directors to be independent, the chairman inclusive. This requirement was modified in MCCG 2007, whereby all members of the AC must be non-executive and financially literate, with at least one member as a member of an accounting association or body. The MCCG 2017 has an additional modification which encourages firms to have an AC which is solely composed of independent directors. The new revisions introduced by MCCG 2012 require the board to formalize ethical standards on the setting up of the code of conduct and ensuring its compliance. Further, it requires the code of conduct to include channels that offer appropriate communication and feedback to facilitate whistle-blowing. Besides, the MCCG 2017 requests that policies and procedures on whistle-blowing should be established, reviewed and implemented by the board.

2.1 Hypotheses Development

Even though there are several revised CG codes (MCCG 2000, revised MCCG 2007, MCCG 2012 and currently MCCG 2017) in Malaysia, the frequency of amendments to the Code is an indication that either the Code needs to be

improved further, or the challenges of implementing the Code may be difficult due to cultural diversity amongst Malaysian firms. The business environment in Malaysia has certain features that may affect the efficient implementation of the CG framework. Malaysian firms focus strongly on shareholdings, which have grown from the traditional family-owned business (Abdul-Rahman & Ali, 2006; Claessens, Djankov, & Lang, 2000). This differentiates the pattern of ownership of companies in Malaysia from other Western countries, like the UK and the US, which could compound the problems of CG (Abdullah, 2006). Conflicts of interest and information asymmetry exist in most organizations (Jensen & Meckling, 1976). Such problems are common, especially in countries with higher family-owned firms such as Malaysia, where type II agency problem is on the increase (Ali, Chen, & Radhakrishnan, 2007). This is because the majority shareholders tend to have greater access to information than minority shareholders (Martínez-Ferrero, Rodríguez-Ariza, & García-Sánchez, 2016; Prommin, Jumreornvong, Jiraporn, & Tong, 2016; Tsao, Lin, & Chen, 2015).

Importantly, there is a big gap on the effectiveness of CG mechanisms as many of the board members have full-time jobs in other corporations and rely on the CEO, which in most cases is a family member, to provide them with relevant firm-specific information for monitoring managers' decisions (Adams & Ferreira, 2007). However, the CEO has less inclination to disseminate information to the board, an attempt to weaken the monitoring strength of the board (Adams & Ferreira, 2007). Consequently, Rachagan and Kuppasamy (2013) suggested an internal whistle-blowing policy for firms. Whistle-blowing policy should be made an essential part of the internal control system (Brennan & Kelly, 2007; Meng & Fook, 2011) to support and strengthen the link between the CG mechanisms and the internal audit function (Zain, Subramaniam, & Stewart, 2006), thus enhancing the effectiveness of CG mechanisms (Alam, 2009; Bowen *et al.*, 2010; Friebel & Guriev, 2012; Mak, 2007; Meng & Fook, 2011; Packin & Edwards, 2016; Schultz & Harutyunyan, 2015). Whistle-blowing, "which occurs when an employee raises concerns about a dangerous, unethical or illegal activity that he is aware of through his work" (Bursa Malaysia Corporate Governance Guide, 2013), assists the board to discover information about the agency problems (Bowen *et al.*, 2010), which protects shareholders (Fauver & Fuerst, 2006), as well as public interests (Alleyne, Hudaib, & Pike, 2013).

Consequently, several regulators, such as in Japan, Indonesia, Singapore, Malaysia and Thailand, require firms to formulate a whistle-blowing policy that allows employees, primarily internal and external auditors, to directly access and freely talk to independent directors about their concerns with illegal or unethical conduct, without fear of retaliation. Shawver and Clements (2006) found that accountants are more likely to blow the whistle for acts relating to EM practices (e.g., early shipments and unfair loans). Likewise, Shawver and Shawver (2007) claimed that even if there are no protection laws for reporting accounting manipulations in private firms, there is a marginal relationship for explaining intentions of accountants to whistle-blow in situations of EM (e.g., early shipments and bad debt). A recent study conducted by Al-Absy *et al.* (2019a) provided evidence that CG mechanisms are more effective in mitigating the level of AEM in firms that have WBP than those without WBP. They found that BOD characteristics, (i.e., chairman independence and chairman tenure as well the AC characteristics, i.e., size, meetings and women in the committee) are significantly associated with a low level of AEM in firms that have WBP. Likewise, the ownership concentration and big four auditing firms are significantly related to the low level of AEM in firms with WBP. However, for firms without WBP, only the board chairman tenure has a significant negative relationship with AEM.

Thus, this study proposes that having an effective WBP in a firm could significantly strengthen the CG mechanisms in mitigating REM practices. This study selects the most critical mechanisms of BOD, i.e., board chairman independence, board independence, board size, board meetings and women on board, to investigate their influence on the level of REM in firms with and without WBP. It also selects the most vital mechanisms of AC, i.e., the size, meeting, independence, accounting expertise, multiple directorships and women in the committee, to investigate their influence on the level of REM in firms with and without WBP. Moreover, ownership concentration and audit firm size are also investigated. Therefore, the study proposes the following hypotheses:

H₁: Corporate governance mechanisms are more effective in mitigating real earnings management in firms that have a whistle-blowing policy than those without the policy.

3. Research Methodology

This study covers 300 Malaysian listed firms. The selection of these firms is based on the firms' performance using return on assets (ROA) (Burgstahler & Dichev, 1997; Roychowdhury, 2006; Yuliana, Anshori, & Alim, 2015). By following previous studies (Al-Absy, Ku Ismail, & Chandren, 2017, 2018a, 2018b, 2019a, 2019b), this study used the following two steps. First, firms with negative earnings in one or more years were excluded. This is because the managers are expected to be encouraged to avoid reporting any annual losses (Burgstahler & Dichev, 1997; Campa,

2015; Mohd Saleh, Mohd Iskandar, & Rahmat, 2005; Roychowdhury, 2006). Firms are more likely to maintain their positive (non-negative) earnings (Burgstahler & Dichev, 1997; Ozili, 2019) by reducing the high earnings in good years and increasing the low earnings in bad years (Ozili & Outa, 2017) to generate stable earnings over time (Ozili, 2019). Subsequently, 300 firms with the lowest average ROA for the years 2013, 2014 and 2015 were chosen. Firms with around zero earnings are more likely to engage in EM (Mohd Saleh *et al.*, 2005; Roychowdhury, 2006; Yuliana *et al.*, 2015). This argument is in line with previous studies that selected firms with ROA between zero and 0.005 in detecting EM (Roychowdhury, 2006; Yuliana *et al.*, 2015). However, during the process, 12 firms were excluded. Therefore, the final sample for the three years is 864 firm-year observations, involving 288 firms.

This study used the three proxies of Roychowdhury (2006) adopted in previous studies (i.e., Razaque, Ali, and Mather (2016) and Liu, Shi, Wilson, and Wu (2017)) to measure the abnormal level of REM. First, the abnormal levels of cash flow from operations (ABCFO): The study ran ordinary least squares (OLS) regression for three years and for seven sectors with specific industry and year effect to estimate the coefficients (α_1 , β_1 and β_2) from the following equation:

$$\frac{CFO_{it}}{A_{it-1}} = \alpha_0 + \alpha_1 \left(\frac{1}{A_{it-1}} \right) + \beta_1 \left(\frac{S_{it}}{A_{it-1}} \right) + \beta_2 \left(\frac{\Delta S_{it}}{A_{it-1}} \right) + \varepsilon_{it}, \quad (1)$$

Where, CFO_{it} is cash flow from operations, A_{it-1} is total assets of last period, S_t is the sales and ΔS_{it} is the change of sales. Therefore, the normal levels of operating cash flow (NCFO) were calculated by using the estimated coefficients α_1 , β_1 and β_2 from Equation 1 and applied in the following equation:

$$NCFO = \alpha_0 + \alpha_1 \left(\frac{1}{A_{it-1}} \right) + \beta_1 \left(\frac{S_{it}}{A_{it-1}} \right) + \beta_2 \left(\frac{\Delta S_{it}}{A_{it-1}} \right) + \varepsilon_{it}, \quad (2)$$

Then, the ABCFO is the actual cash flow from operations minus the NCFO as per the following equation:

$$ABCFO = \frac{CFO_{it}}{A_{it-1}} - NCFO \quad (3)$$

Second, the abnormal levels of production costs (ABPROD): The study ran OLS regression for three years and for seven sectors with specific industry and year effect to estimate the coefficient value of α_1 , β_1 , β_2 and β_3 from the following equation:

$$\frac{PROD_{it}}{A_{it-1}} = \alpha_0 + \alpha_1 \left(\frac{1}{A_{it-1}} \right) + \beta_1 \left(\frac{S_{it}}{A_{it-1}} \right) + \beta_2 \left(\frac{\Delta S_{it}}{A_{it-1}} \right) + \beta_3 \left(\frac{\Delta S_{it-1}}{A_{it-1}} \right) + \varepsilon_{it} \quad (4)$$

$PROD_t$ is the sum of the cost of goods sold (COGS) and change in inventory (ΔINV) and ΔS_{it-1} is the one year lag of ΔS_{it} . Therefore, the normal level of production cost (NPROD) was calculated by using the estimated coefficient value of α_1 , β_1 , β_2 and β_3 found from equation 4 and applied in the following equation:

$$NPROD = \alpha_0 + \alpha_1 \left(\frac{1}{A_{it-1}} \right) + \beta_1 \left(\frac{S_{it}}{A_{it-1}} \right) + \beta_2 \left(\frac{\Delta S_{it}}{A_{it-1}} \right) + \beta_3 \left(\frac{\Delta S_{it-1}}{A_{it-1}} \right) + \varepsilon_{it} \quad (5)$$

Then, the ABPROD is the actual production cost during the year minus the NPROD as the per the following equation:

$$ABPROD = \frac{PROD_{it}}{A_{it-1}} - NPROD \quad (6)$$

Third, the abnormal levels of discretionary expenses (ABDISEXP): The study ran OLS regression for three years and for seven sectors with specific industry and year effect to estimate the coefficient value of α_1 and β from the following equation:

$$\frac{DISEXP_{it}}{A_{it-1}} = \alpha_0 + \alpha_1 \left(\frac{1}{A_{it-1}} \right) + \beta \left(\frac{S_{it-1}}{A_{it-1}} \right) + \varepsilon_{it} \quad (7)$$

$DISEXP_{it}$ is the sum of R&D, advertising and selling and general and administrative costs (any missing data on the

advertising and R&D will be replaced by zero (Nia *et al.*, 2017)). Therefore, the normal levels of discretionary expenses (NDISEXP) were calculated by using the estimated coefficient value α_1 and β found from equation 7 and applied in the following equation:

$$\text{NDISEXP} = \alpha_0 + \alpha_1 \left(\frac{1}{A_{it-1}} \right) + \beta \left(\frac{S_{it-1}}{A_{it-1}} \right) + \varepsilon_{it} \quad (8)$$

Then, ABDISEXP is the actual discretionary expenses minus the NDISEXP as per the following equation:

$$\text{ABDISEXP} = \frac{\text{DISEXP}_{it}}{A_{it-1}} - \text{NDISEXP} \quad (9)$$

However, previous studies provided evidence that firms that engaged in increase-earnings are more likely to have low cash flows from operations, high production costs and/or low discretionary expenditures (Chen, Huang, & Fan, 2012; Cohen, Dey, & Lys, 2008; Cohen & Zarowin, 2010; Ferramosca & Ghio, 2018; Haji-Abdullah & Wan-Hussin, 2015; Sun *et al.*, 2014), or vice versa. Thus, to achieve consistency among variables, ABCFO and ABDISEXP were multiplied by (-1) (Chen *et al.*, 2012; Chi, Lisic, & Pevzner, 2011; Cohen & Zarowin, 2010; Haji-Abdullah & Wan-Hussin, 2015; Razaque *et al.*, 2016). Importantly, this study combined the value of ABCFO, ABPROD and ABDISEXP to reflect the total value of abnormal levels of REM (ABREM) as per the following equation:

$$\text{ABREM} = \text{ABCFO}^{*-1} + \text{ABPROD} + \text{ABDISEXP}^{*-1} \quad (10)$$

Following the most recent studies (Chang, Wang, Chiu, & Huang, 2015; Francis *et al.*, 2016; Kim & Sohn, 2013; Kwon, Na, & Park, 2017; Lisboa, 2016; Liu & Wang, 2017; Xu & Ji, 2016), this study used the absolute value of REM (ABREM) to reflect the level of REM. This study runs the regression for all firms' observation to see the influence of each mechanism of CG in mitigating REM. Further, the same regression was conducted for each group (firms with and without WBP) to investigate whether or not the mechanisms of CG in firms that have a WBP are more effective in mitigating REM than those without the policy. Several of CG mechanisms are used in the regression model. For BOD mechanisms, the regression model includes board chairman independence (BCIND); "1" if the board chairman is independent, "0" otherwise, board size (BSIZE); number of board directors, board meetings (BMEET); number of board meetings per year, board independence (BIND); proportion of board independence, and women on board (BFEM); "1" if the board has a female director, "0" otherwise.

For AC mechanisms, the regression model contains AC size (ACSIZE), number of AC meetings in a year (ACMEET), AC independence (ACIND), presence of women in the AC (ACFEM), proportion of AC with accounting expertise (ACAE), and AC's multiple directorships (ACMD - number of AC members who are a director in other firms). Besides, two other mechanisms are also used - ownership concentration (Conc5, i.e. the proportion of shares held by the five largest shareholders) and auditor size (Big4, i.e. "1" if the firm is audited by Big4, "0" otherwise). Furthermore, several control variables are used in the regression model, i.e., sales growth (SG), leverage (LEV), return on assets (ROA), net and cash flow from operations (NCFO - "1" if the firm has a negative value of cash from operations, "0" otherwise).

The regression model used is:

$$\text{REM} = \alpha + \beta_1 \text{BCIND} + \beta_2 \text{BSIZE} + \beta_3 \text{BMEET} + \beta_4 \text{BIND} + \beta_5 \text{BFEM} + \beta_6 \text{ACSIZE} + \beta_7 \text{ACMEET} + \beta_8 \text{ACIND} + \beta_9 \text{ACFEM} + \beta_{10} \text{ACAE} + \beta_{11} \text{ACMD} + \beta_{12} \text{Conc5} + \beta_{13} \text{Big4} + \beta_{14} \text{SG} + \beta_{15} \text{LEV} + \beta_{16} \text{ROA} + \beta_{17} \text{NCFO} + \varepsilon$$

4. Results and Discussion

The descriptive statistics of the CG mechanisms are presented in Table 1. The first column describes the mean value of variables for all observations together. Further, the second column shows the mean values of variables based on each group (firms with and without WBP). It also shows the significant difference between the mean value of each CG variables among firms with and without WBP. The CG mechanisms seem to be different in each group. For instance, the second column indicates that firms with WBP have significantly higher mean values for BSIZE, BMEET, BIND, BFEM, ACSIZE, ACMEET, ACFEM, ACMD, Conc5 and Big4 over those firms without WBP. This means that firms which have a policy of whistle-blowing are more likely to have: a large board and AC, higher frequency of board and AC meetings, women on boards and AC, a higher percentage of board independent directors, a higher number of directors with multiple directorships, big audit firms and higher percentage of ownership concentration. These mechanisms seem to have a positive relationship with the existence of WBP in a firm. Hence, functional and effective governance can be achieved by having a whistle-blowing policy, which is in line with agency and resource dependence theories. However, in firms without WBP, only the mean value of the existence of

board chairman independent director is significantly higher than in firms with WBP. In terms of the firms-specific characteristics, i.e., SG, LEV, ROA and NCFO, there is no significant difference between firms with and without WBP.

Table 1. T/z-test for the variables by grouped firms into firms with and without WBP

Variables	Mean (All Firms)	Mean		t/z- Statistics
		Firm WBP	with Firm WBP	
BCIND	0.377	0.343	0.411	2.0871**
BSIZE	7.418	7.531	7.306	-1.7400*
BMEET	5.617	6.203	5.039	-7.8081***
BIND	0.474	0.485	0.464	-2.4638**
BFEM	0.536	0.564	0.508	-1.6526*
ACSIZE	3.244	3.329	3.161	-4.9784***
ACMEET	5.063	5.322	4.807	-5.9506***
ACIND	0.900	0.892	0.907	1.530
ACFEM	0.255	0.287	0.223	-2.1497**
ACAE	0.429	0.432	0.426	-0.506
ACMD	1.728	1.888	1.570	-4.3320***
Conc5	0.546	0.578	0.515	-5.9555***
Big4	0.531	0.641	0.423	-6.4214***
SG	0.151	0.142	0.160	0.2017
LEV	20.775	21.551	20.010	-1.495
ROA	4.412	4.419	4.405	-0.086
NCFO	0.229	0.214	0.244	1.0219

Notes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. “ttest” command in STATA employed to report the t-value for continuous variables, while “prtest” command employed to report z-value for dummy variables (Al-Dubai, 2014). BCIND is board chairman independence, BSIZE is board size, BMEET is board meetings, BIND is board independence, BFEM is women on board, ACSIZE is AC size, ACMEET is AC meeting, ACIND is AC independence, ACFEM is women in the AC, ACAE is AC’s accounting expertise, ACMD is AC’s multiple directorships, Conc5 is ownership concentration, Big4 is auditor size, SG is sales growth, LEV is leverage, ROA is return on assets and NCFO is cash flow from operations.

This study conducted several diagnostic tests to find the fitness of the data, i.e., outlier, normality, multicollinearity, heteroscedasticity and autocorrelation, before running the regression analysis. For the outlier test, it is found that REM, ACMEET BMEET and SG have an outlier problem which the study winsorized the data of these variables by using the minimum level of 1% for REM and ACMEET and 5% for BMEET and SG. For the normality test, this study used the Kurtosis and Skewness tests; it shows that all data of the variables are normally distributed and within the threshold of ± 3 and ± 10 , respectively (Kline, 2015). Regarding the multicollinearity issue, the study used two methods, the variance inflation factor (VIF) and Pearson correlation, to test the correlation among variables. The results of these tests are reported in Table 2 and 3, which confirm that variables are not correlated with each other. Furthermore, the Wooldridge test suggested that there is no autocorrelation problem in the data. However, the Breusch-Pagan/Cook-Weisberg test suggests the existence of heteroscedasticity problem.

Table 2. The variance inflation factor

Variable	VIF	1/VIF
BCIND	1.09	0.919
BSIZE	1.72	0.582
BMEET	1.72	0.583
BIND	1.92	0.520
BFEM	1.50	0.669
ACSIZE	1.55	0.644
ACMEET	1.60	0.625
ACIND	1.56	0.639
ACFEM	1.50	0.665
ACAE	1.05	0.951
ACMD	1.24	0.810
Conc5	1.08	0.922
Big4	1.14	0.878
FSIZE	1.08	0.926
LEV	1.15	0.867
ROA	1.09	0.913
NCFO	1.09	0.918
Mean VIF	1.36	

Table 3. Pearson correlation test

	1	2	3	4	5	6	7	8	9
1. REM	1								
2. BCHIND	0.03	1							
3. BSIZE	-0.09**	-0.05	1						
4. BMEET	-0.04	-0.06*	0.20***	1					
5. BIND	0.05	0.18***	-0.32***	0.07*	1				
6. BFEM	0.00	-0.12***	0.15***	0.06*	-0.10***	1			
7. ACSIZE	-0.09***	0.03	0.31***	0.27***	0.20***	0.01	1		
8. ACMEET	-0.06*	-0.14***	0.14***	0.59***	0.04	0.08**	0.14***	1	
9. ACIND	0.01	0.07*	0.10***	-0.08**	0.41***	-0.06*	-0.08**	0.00	1
10. ACFEM	0.02	-0.07*	0.08**	0.11***	-0.05	0.54***	0.08**	0.09**	-0.14***
11. ACAE	0.05	0.00	-0.03	-0.02	-0.04	0.08**	-0.15***	0.02	0.07**
12. ACMD	-0.06	0.03	0.23***	0.18***	0.11***	0.00	0.37***	0.16***	0.01
13. Conc5	0.07**	-0.11***	0.05	0.14***	-0.09***	0.05	0.09**	0.07**	-0.13***
14. Big4	-0.05	-0.05	0.12***	0.16***	0.04	0.09***	0.20***	0.11***	-0.08**
15. SG	0.07**	0.03	0.03	-0.02	-0.06*	0.03	-0.06*	0.01	0.02
16. LEV	-0.05	-0.02	0.14***	0.08**	-0.11***	-0.11***	-0.01	0.13***	0.03
17. ROA	0.06	-0.03	0.08**	0.00	-0.06*	0.05	0.00	-0.05	-0.06*
18. NCFO	0.16***	0.08**	-0.05	0.04	0.02	-0.06*	-0.03	-0.01	0.12***

Continued

	10	11	12	13	14	15	16	17	18
10.ACFEM	1								
11.ACAE	0.02	1							
12.ACMD	0.01	0.02	1						
13.Conc5	0.11***	-0.01	0.09***	1					
14.Big4	0.14***	0.03	0.15***	0.09***	1				
15.SG	0.02	-0.03	-0.06	0.03	-0.05	1			
16.LEV	-0.13***	0.00	0.09***	-0.08**	0.13***	0.05	1		
17.ROA	-0.01	0.01	-0.01	0.00	0.02	0.21***	-0.10***	1	
18.NCFO	-0.03	0.03	-0.04	-0.08**	-0.12***	0.06**	0.12***	-0.08**	1

Notes: *** p<0.01, ** p<0.05, * p<0.1. REM is sum value of the three proxies introduced by Roychowdhury (2006), BCIND is board chairman independence, BSIZE is board size, BMEET is board meetings, BIND is board independence, BFEM is women on board, ACSIZE is AC size, ACMEET is AC meeting, ACIND is AC independence, ACFEM is women in the AC, ACAE is AC's accounting expertise, ACMD is AC's multiple directorships, Conc5 is ownership concentration, Big4 is auditor size, SG is sales growth, LEV is leverage, ROA is return on assets and NCFO is cash flow from operations.

Based on the above assumption tests, it is suggested that feasible generalized least squares (FGLS) regression provides reliable estimates in the presence of heteroscedasticity (Wooldridge, 2010). Thus, FGLS regression was used with option "panels (heteroskedastic)" to solve the problem of heteroscedasticity (Podestà, 2002; StataCorp, 2015) which has been adopted by previous studies (Buckley, Elia, & Kafouros, 2014; Cai, Luo, & Wan, 2012; Luo, Wan, Cai, & Liu, 2013; Sakawa & Watanabel, 2017, 2018; Yoshikawa & Rasheed, 2010). The results of FGLS regression are shown in Table 4. For all firms' observations, ACSIZE, ACMEET and Big4 are significantly associated with a low level of REM. These results are consistent with agency and resource dependence theories. Conversely, other mechanisms of CG, i.e., BIND, ACAE and Conc5 are found to be significantly associated with a high level of REM, while the rest of CG mechanisms are found to be not associated with the level REM. These results are inconsistent with the agency and resource dependence theories.

Table 4 also shows the results of the re-estimate model by grouping all firms' observations into firms with and without WBP. In firms without WBP, only BMEET, ACMD and Big4 are found to be significantly associated with a low level of REM, which is consistent with agency and resource dependence theories. However, most of the CG mechanisms are found to be not effective in mitigating the level of REM. It seems that CG mechanisms have been dominated by the management where some of these mechanisms resulted in a significantly high level of REM. For instance, CG mechanisms, i.e., ACSIZE, ACFEM, ACAE and Conc5, are found to be significantly associated with a high level of REM. These results indicate that CG mechanisms in firms without WBP do not adequately monitor the managers' discretion where the directors may face difficulties in accessing firms' information regarding the financial reporting process or attempt to work alongside with management to mask the figure of earnings in order to retain their position. Regarding firms with WBP, most of the CG mechanisms, i.e., ACSIZE, ACMEET, ACIND and Big4, are found to be significantly associated with a low level of REM, supporting agency and resource dependence theories. However, only BIND and Conc5 are found to be significantly associated with a high level of REM. From these results, it appears that having WBP in a firm slightly improved the monitoring role of the CG mechanisms towards mitigating REM. These results indicate that WBP needs to be further strengthened to enhance the monitoring role of CG in mitigating REM. Indeed, daily operational activities are more complex. Therefore, there is a need for more policies and efforts to encourage whistle-blowers to disclose any misconducts to directors.

Regarding the control variables, this study finds the same result for the influence of ROA and NCFO on REM. Table 4 shows that ROA and NCFO are significantly associated with a high level of REM for all firms' observations and each group, either firms with and without WBP. In terms of sales growth (SG), this study reveals that SG is significantly associated with a high level of REM in all firms' observation and firms with WBP while not for firms without WBP. Further, this study finds that LEV is significantly associated with a low level of REM in only firms without WBP.

Table 4. FGLS regression of the main models

DA	All firms		Firms without WBP		Firms with WBP	
	Coef.	z	Coef.	z	Coef.	z
BCIND	-0.002	-0.45	-0.000	-0.02	-0.003	-0.48
BSIZE	-0.001	-0.99	-0.000	-0.25	-0.001	-0.25
BMEET	-0.001	-0.45	-0.007***	-2.76	0.002	0.96
BIND	0.062**	2.53	-0.002	-0.07	0.163***	4.91
BFEM	0.002	0.42	-0.007	-1.07	0.008	1.11
ACSIZE	-0.011**	-2.23	0.012*	1.83	-0.036***	-4.88
ACMEET	-0.006**	-2.59	-0.004	-1.24	-0.009***	-3.65
ACIND	-0.022	-1.19	0.008	0.31	-0.074**	-2.51
ACFEM	0.008	1.43	0.017**	2.20	0.012	1.45
ACAE	0.020*	1.80	0.031**	1.96	-0.004	-0.21
ACMD	-0.003	-1.31	-0.007***	-2.77	0.001	0.23
Conc5	0.058***	3.89	0.039**	1.98	0.065***	2.94
Big4	-0.013***	-3.14	-0.010*	-1.92	-0.026***	-3.98
SG	0.026***	3.25	0.001	0.10	0.061***	4.70
LEV	0.000	-0.65	-0.000*	-1.82	0.000	0.84
ROA	0.003***	3.41	0.003**	2.46	0.002*	1.72
NCFO	0.052***	9.33	0.045***	5.85	0.049***	7.12
_cons	0.126***	5.33	0.086***	2.61	0.211***	5.78
Wald chi ²		225.06		92.54		542.80
Prob > chi ²		0.0000		0.0000		0.0000
R ²		0.0640		0.0587		0.1016
Obs.		864		435		429

Notes: *** p<0.01, ** p<0.05, * p<0.1. R² calculated by OLS regression. REM is sum value of the three proxies introduced by Roychowdhury (2006), BCIND is board chairman independence, BSIZE is board size, BMEET is board meetings, BIND is board independence, BFEM is women on board, ACSIZE is AC size, ACMEET is AC meeting, ACIND is AC independence, ACFEM is women in the AC, ACAE is AC's accounting expertise, ACMD is AC's multiple directorships, Conc5 is ownership concentration, Big4 is auditor size, SG is sales growth, LEV is leverage, ROA is return on assets and NCFO is cash flow from operations.

4.1 Robustness Test

There is no definitive agreement on the calculation method of REM. In contrast to the method that was used in this study, some previous studies have used the standardized value of ABCFO, ABPROD and ABDISEXP (Chen *et al.*, 2012; Chen, Cheng, & Wang, 2011; Chi *et al.*, 2011; Cohen *et al.*, 2008; Cohen & Zarowin, 2010; Haji-Abdullah & Wan-Hussin, 2015; Liu & Tsai, 2015) to calculate the aggregate value of REM. Therefore, this study re-estimates the model by using the absolute value of the sum of the standardized ABCFO, ABPROD and ABDISEXP to examine the robustness of the findings found from the main model. The results in Table 5 show the same results as in Table 4, except for ACFEM and ACAE in the total firms model as well as ACSIZE and Big4 in the firm without WBP. This means that there is no significant difference in the results, either using the standardized or non-standardized values.

Table 5. FGLS regression by standardizing the value of REM proxies

DA	All firms		Firms without WBP		Firms with WBP	
	Coef.	z	Coef.	z	Coef.	z
BCIND	-0.012	-0.26	-0.006	-0.10	0.010	0.14
BSIZE	-0.012	-0.75	0.005	0.22	0.023	0.97
BMEET	-0.002	-0.09	-0.093***	-3.62	0.022	1.02
BIND	0.611**	2.27	0.232	0.64	1.844***	5.11
BFEM	-0.042	-0.81	-0.109	-1.57	0.089	1.17
ACSIZE	-0.209***	-3.94	0.074	1.10	-0.476***	-6.31
ACMEET	-0.083***	-3.58	-0.038	-1.02	-0.115***	-4.86
ACIND	-0.280	-1.38	-0.205	-0.76	-1.068***	-3.23
ACFEM	0.143**	2.37	0.158*	1.91	0.064	0.65
ACAE	0.196	1.51	0.442***	2.66	-0.053	-0.24
ACMD	0.008	0.37	-0.049*	-1.65	0.032	0.76
Conc5	0.694***	4.35	0.497**	2.44	0.851***	3.50
Big4	-0.101**	-2.23	-0.035	-0.61	-0.304***	-4.05
SG	0.324***	3.25	-0.083	-0.62	0.857***	5.59
LEV	-0.001	-0.41	-0.003*	-1.67	0.002	0.80
ROA	0.035***	3.94	0.041***	3.34	0.051***	3.44
NCFO	0.685***	12.69	0.641***	7.97	0.642***	10.63
_cons	1.688***	6.69	1.084***	3.17	2.432***	5.80
Wald chi ²		331.97		134.22		2133.99
Prob>chi ²		0.0000		0.0000		0.0000
R ²		0.0624		0.0695		0.0942
Obs.		864		435		429

Notes: *** p<0.01, ** p<0.05, * p<0.1. R² calculated by OLS regression. REM is sum of the standardized value of the three proxies introduced by Roychowdhury (2006), BCIND is board chairman independence, BSIZE is board size, BMEET is board meetings, BIND is board independence, BFEM is women on board, ACSIZE is AC size, ACMEET is AC meeting, ACIND is AC independence, ACFEM is women in the AC, ACAE is AC's accounting expertise, ACMD is AC's multiple directorships, Conc5 is ownership concentration, Big4 is auditor size, SG is sales growth, LEV is leverage, ROA is return on assets and NCFO is cash flow from operations.

Furthermore, previous studies have included the year dummy variable in the regression (Buckley *et al.*, 2014; Cai *et al.*, 2012; Luo *et al.*, 2013; Sakawa & Watanabel, 2017, 2018) in order to observe the general trend over time. It is argued that years (business cycle) may have a specific effect on the result of the regression (see Baatwah, Salleh, & Ahmad, 2015; Datta, Iskandar-Datta, & Singh, 2013). The inclusion of year dummy variable may be necessary, particularly in the field of EM, where manipulated earnings would enable managers to transfer earnings between periods in which downward earnings in the current year are adjusted upward in the succeeding year, or vice versa (Abdullah & Ku Ismail, 2016; Ferramosca & Ghio, 2018; Healy, 1985). Thus, this study re-estimates the model by including the year dummy variable to test the robustness of the results reported in Table 4. Table 6 shows the results of the re-run models, which are all consistent with the previous results presented in Table 4, except for ACSIZE and Big4 in the regression of firm without WBP.

Table 6. FGLS regression by including the year dummy variable

DA	All firms		Firms without WBP		Firms with WBP	
	Coef.	z	Coef.	z	Coef.	z
BCIND	-0.003	-0.55	0.000	0.05	-0.003	-0.53
BSIZE	-0.002	-1.10	-0.001	-0.50	-0.001	-0.28
BMEET	-0.001	-0.39	-0.007***	-2.96	0.003	1.52
BIND	0.063**	2.55	-0.008	-0.25	0.154***	4.47
BFEM	0.002	0.42	-0.007	-1.04	0.007	0.98
ACSIZE	-0.011**	-2.16	0.011	1.57	-0.037***	-4.97
ACMEET	-0.006***	-2.68	-0.003	-0.76	-0.009***	-3.67
ACIND	-0.022	-1.16	0.001	0.04	-0.066**	-2.24
ACFEM	0.008	1.36	0.020***	2.76	0.010	1.18
ACAE	0.019*	1.63	0.031**	2.16	-0.004	-0.21
ACMD	-0.003	-1.23	-0.008***	-2.80	0.001	0.32
Conc5	0.058***	3.90	0.037*	1.85	0.066***	2.97
Big4	-0.013***	-3.10	-0.008	-1.55	-0.027***	-4.10
SG	0.026***	3.05	-0.001	-0.06	0.060***	4.33
LEV	0.000	-0.70	0.000*	-1.85	0.000	0.80
ROA	0.003***	3.35	0.003**	2.53	0.002*	1.87
NCFO	0.052***	9.36	0.045***	5.82	0.051***	7.11
_cons	0.128***	5.34	0.111***	3.44	0.200***	5.31
Year dummy		Included		Included		Included
Wald chi2		218.92		130.55		381.24
Prob > chi2		0.0000		0.0000		0.0000
R ²		0.0650		0.0627		0.1024
Obs.		864		435		429

Notes: *** p<0.01, ** p<0.05, * p<0.1. R² calculated by OLS regression. Year dummy variables (year 2013, 2014 and 2015) included as control variables. REM is sum value of the three proxies introduced by Roychowdhury (2006), BCIND is board chairman independence, BSIZE is board size, BMEET is board meetings, BIND is board independence, BFEM is women on board, ACSIZE is AC size, ACMEET is AC meeting, ACIND is AC independence, ACFEM is women in the AC, ACAE is AC's accounting expertise, ACMD is AC's multiple directorships, Conc5 is ownership concentration, Big4 is auditor size, SG is sales growth, LEV is leverage, ROA is return on assets and NCFO is cash flow from operations.

5. Conclusion

The study on whistle-blowing is quite new in Malaysia (Ahmad *et al.*, 2013). Since strategies for implementing EM is a well-kept secret among corporate executives (Elias, 2002), a study on whistle-blowing is very much needed to guide practitioners and Malaysian authorities on policies and practices that can encourage staff to expose organizational wrongdoings (Ahmad *et al.*, 2013). A policy like whistle-blowing is necessary to motivate the internal and external auditors, employees and other parties, to freely raise their concerns on EM practices to directors, who in most cases do not have enough time, energy and authority to fulfil their work. This could support and strengthen the effectiveness of CG mechanisms in mitigating EM practices. Hence, this study attempts to investigate whether CG mechanisms in firms that have a WBP are more effective in constraining REM than those without WBP. The results show that most of the CG mechanisms, i.e., ACSIZE, ACMEET, ACIND and Big4 in firms with WBP are found to

be significantly associated with a low level of REM, supporting agency and resource dependence theories. However, only BIND and Conc5 are found to be significantly associated with a high level of REM. Regarding firms without WBP, most of the CG mechanisms, i.e., ACSIZE, ACFEM, ACAE and Conc5, are found to be significantly associated with a high level of REM. However, only BMEET, ACMD and Big4 are found to be significantly associated with a low level of REM. The finding of this study suggests that having WBP in a firm could improve the monitoring role of the CG mechanisms towards mitigating REM. Therefore, this study recommends to shareholders and policymakers to have an improved effect of WBP in a firm. Moreover, policymakers need to legislate provisions that can regulate WBP and at the same time protect honest whistle-blowers from adverse reactions from other parties. Moreover, this study recommends future studies to explore the determinants of the whistle-blowing policy that may enhance its role in improving the monitoring role of CG mechanisms and therefore, enhancing the financial reporting quality.

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