MANAGEMENT & ACCOUNTING REVIEW

C O N T E N T S

Earnings Management Behavior in Malaysia: The Role of Ownership Structure and External Auditing

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ABSTRACT

This paper aims to empirically investigate firms' earnings management (EM) behaviour, representing an issue in the realm of corporate financial reporting. Specifically, it explores the strategic roles of two common governance elements of ownership (managerial, institutional and family) and external audit in shaping the firms' EM behaviour based on the two common EM attributes of Discretionary Accruals (DA) and Real Activities EM (REM). The analyses based on 227 survived Malaysian listed firms throughout the sixteen-year period from 2001 to 2016 (3,632 firm-year observations) indicate a dynamic EM behaviour depending on the presence of different ownership structures. Whilst a high percentage of family and institutional ownership mitigates DA, it however does not hold true for REM. Further, this paper also shows that the external control mechanism of audit quality is not significant in mitigating both EM attributes. The empirical results suggest that firms facing different challenges would affect the firms' financial reporting behaviours in their choice of EM. The paper adds to the growing body of empirical knowledge dealing with the determinants of DA and REM from the lens of an emerging economy like Malaysia.

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INTRODUCTION

Firms' economic events are recorded and translated into numbers to provide a profile of economic history, ongoing performance as well as their future prospects. Earnings, in particular, is found to provide premier information. Nevertheless, it is highly vulnerable to manipulation. Therefore, the integrity and reliability of earnings information become questionable, especially when managers have the incentive to manipulate the reported earnings. In their established and widely cited definition, Healy and Wahlen (1999) define earnings management (EM) as a process where managers' *use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers' (p.368).*

Studies have shown that the capital market is one of the incentives to manipulate the reported earnings in the attempt to attract both local and international investors to invest in the firms (Burgstahler & Eames, 2006; Healy & Wahlen, 1999). The increase in EM systematically reduces the quality of reported earnings and subsequently cause a loss in investors' confidence. As a result, the firms' estimation risk and cost of equity would increase (Houqe, Ahmed, & van Zijl, 2017), while the volume of trading decreases (Bar-Yosef & Prencipe, 2013). This would eventually impede the firm's economic growth process (Ghosh, Gu, & Jain, 2005).

This study is motivated by the evidence found in prior studies where Malaysia, despite having a strong investor protection and legal enforcement system, still exhibits high EM incidences (Bhattacharya, Daouk, & Welker, 2003; Leuz, Nanda, & Wysocki, 2003). Although Malaysia ranked seventh out of nine Asian countries that exhibit high EM (Shen & Chih, 2007),in a more recent study, Malaysia was ranked eleventh out of thirty-eight countries (Enomoto, Kimura, & Yamaguchi, 2015). Nevertheless, these rankings of high incidences of EM depends on how it is measured (Boonlert-U-Thai, Meek, & Nabar, 2006). A majority of prior studies especially those of cross-countries in nature tend to focus primarily on accruals quality and earnings smoothing (Filip & Raffournier, 2014; Leuz et al., 2003; Shen & Chih, 2007). It is only recently that studies on real earnings management (REM) have received considerable attention. Yet, most of these studies were conducted

in developed country settings (Doukakis, 2014; Enomoto et al., 2015; Kim & Sohn, 2013). A survey on 400 U.S corporate executives by Graham, Harvey, and Rajgopal (2005) reveals that 80% of managers prefer to reduce discretionary expenditures on research and development (R&D) as well as advertising to meet the earnings target rather than discretionary accruals (DA) approach. Therefore, it is important to include REM strategy in EM studies because managing earnings via alteration of day to day operations are very costly and has long term economic consequences (Cupertino, Martinez, & Costa Jr, 2016; Tabassum, Kaleem, & Nazir, 2015).

Malaysia is a developing country striving to develop its economy. According to the International Monetary Fund (IMF) report, global growth was reported at its slowest, but the Malaysian economy grew 3.5% (year on year) in the fourth quarter of 2019, which was mainly driven by domestic demand. Foreign direct investment also reported an increase of 3.1% from 2018. Nevertheless, Malaysia has its fair share of financial scandals like Transmile Berhad, Renong Bhd and recently Lembaga Tabung Haji (LTH). It was reported that the asset value was lower than its liabilities by RM4.1 billion in 2017 and had also failed to recognise the impairment losses of RM549 million from their investment in associates, subsidiaries, and debt securities in their financial statements (Ismail & Wong, 2018), s. These cases collectively reinforce the growing empirical imperative of exploring the firm's EM behaviours, as understanding the choice of EM would strategically assist investors as well as the relevant regulatory bodies in making informed and relevant economic decisions.

Empirical evidence has suggested that the motivation for EM heightens when there is an opportunity to do so. Weak internal governance has been associated with a high incidence of EM. High ownership concentration has also been found to affect the quality of financial reporting (Porta, Lopez-de-Silanes, Shleifer, & Vishny, 1998). Different types of ownership structures induce different monitoring and controlling processes by firms. In the specific case of Malaysia, the country is known to have high ownership concentration (Fan & Wong, 2002) with high managerial ownership and family ownership (Ball, Robin, & Wu, 2003; Hashim & Devi, 2008). However, while the Agency Theory seems to suggest that an increase in ownership may create an alignment effect, the conflict may arise between minority and majority shareholders. Prior studies in Malaysia have been

inconclusive as to whether the ownership structure plays an effective mitigating role in minimising EM behaviour. Studies have found that EM activities exacerbates with a high percentage of ownership known as entrenchment effect (Johari, Saleh, Jaffar, & Hassan, 2009; Teh, Ong, & Lau, 2017). These studies have mainly focussd on DA. There are limited studies conducted to investigate the role of ownership (managerial, family and institutional) on mitigating real earnings management, and the findings remain inconclusive (Abdullah & Ismail, 2016; Shayan-Nia, Sinnadurai, Mohd-Sanusi, & Hermawan, 2017). As there is evidence to suggest that firms facing a high ownership structure tend to prefer REM over DA (Zang, 2012), it is therefore imperative to include REM in investigating the role of ownership structures on EM activities.

Furthermore, based on the Agency Theory, having an external monitoring mechanism would mitigate the conflict of interests between management and shareholders (Al-Rassas & Kamardin, 2016; Kouaib & Jarboui, 2014). Due to the major accounting scandals all over the world, firms have been subject to greater scrutiny by auditors. Nevertheless, Graham et al. (2005) argue that firms facing higher scrutiny prefer REM to DA since the former's activities are less likely to be detected and scrutinised by regulators and auditors. Cohen and Zarowin (2010) state that the probability of detecting DA is higher when the firms are audited by the big eight auditors, and when the auditor's tenure at the firms increases. As such, firms tend to use REM. Investigating whether firms manage earnings via DA and REM around seasoned equity offerings, they find evidence showing that having a big eight auditor increases the probability of engaging in REM activities by 8%. Again, prior studies on EM in Malaysia has mainly focused on accruals EM i.e. DA. Hence, by just using accruals to conclude the lower incidence of EM activities is arguably insufficient as there is evidence to suggest that, with the regulation reformation on corporate governance and the convergence of accounting standards, there are substitution effects on the type of EM (Bartov & Cohen, 2008; Cohen, Dey, & Lys, 2008; Cohen & Zarowin, 2010; Gao, Gao, & Wang, 2017; Ho, Liao, & Taylor, 2015). Hence, there is an empirical need to include REM techniques to inform investors on the overall pervasiveness of EM activities in Malaysia.

As such, this paper aims to add to the growing EM literature, the choice of method of earnings manipulation; either by DA or REM, is affected by

the available opportunities, in which, this study focuses on the ownership structure and audit quality. Given the inconclusive results on whether audit quality and ownership structure have mitigated or exacerbate potential expropriation when playing an active role in strategic decision making, conducting a study in a single country like Malaysia can further add to the existing body of evidence.

This study found that firms' with a high percentage of institutional ownership tend to use real activities. The result also shows that family and institutional ownership have effectively constrained accruals supporting the alignment effect. However, high institutional ownership also increases REM activities. No relationship however was found between either EM methods and both audit quality and managerial ownership.

The paper is organised as follows: the next section discusses the literature and develops the hypotheses. This is followed by sections which describe the methodology and the empirical results. The final section concludes the paper.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Agency Theory

Many EM studies have explored the behaviour of EM using the Agency Theory whereby they argue that firms or managers take advantage of the information asymmetry that exists to increase their private wealth (Jiraporn, Miller, Yoon, & Kim, 2008). The Theory is generally concerned with the relationship between the principals and agents. The agent is a professional person who is hired by the principal (the owner), to manage and perform tasks on his or her behalf without having to bear any of the consequences of their decisions (Chen & Jaggi, 2000; Fama, 1980; Jensen & Meckling, 1976). Due to the large separation of ownership and management, there are underlying assumptions that lead to the agency problem. The premises are that both the principal and the agents are utility maximisers and that the interests between the owners and the managers are not always aligned (Jiraporn et al., 2008). There is a possibility that the goal of maximising

shareholders' wealth could be diverted to maximise the self-interests of management, known as a Type I agency problem (Teh et al., 2017). The Agency Theory is associated with opportunistic EM when management is perceived to have private information and use the benefits to maximise their wealth (Kouaib & Jarboui, 2014). As such, corporate managers need to be monitored in such that the mismatch of interest, i.e. the agency costs could be mitigated and minimised. Studies have found evidence that the interest of the owners and managers are aligned when there is an increase in managerial ownership (Ali, Salleh, & Hassan, 2008). Thus a negative relationship with EM is found (Ali et al., 2008; You, Tsai, & Lin, 2003).

Malaysia, is known to have a high ownership concentration (Fan & Wong, 2002) with high managerial ownership and family ownership (Ball et al., 2003; Hashim & Devi, 2008). However, the increase in the ownership to address the Type 1 agency problem, however, give rise to the conflict between the majority shareholders and minority shareholders known as Type II agency problem (Teh et al., 2017). It is viewed that the majority of agency problems are a result of the clash between these two shareholders, where the majority shareholders are expropriating wealth at the expense of the minority shareholders (Garcia-Meca & Sanchez-Ballesta, 2009). As such, the Minority Shareholders Watchdog (MSWG) was established to encourage shareholders' activism to safeguard the interests of the minority shareholders. Nevertheless, prior studies have found that EM activities exacerbate with a high percentage of ownership known as the entrenchment effect (Al-Fayoumi, Abuzayed, & Alexander, 2010; Johari et al., 2009; Laksmana & Yang, 2014; Teh et al., 2017).

Earnings Management

There are many ways that managers can manipulate earnings. The most common method is by using accruals (Abdul Jalil & Abdul Rahman, 2010; Abdullah Sani & Mastuki, 2012; Alzoubi, 2016; Baber, Kang, & Li, 2011; Dechow, Sloan, & Sweeney, 1995; Ho, Liu, & Ouyang, 2012; Peasnell, Pope, & Young, 2000). Managing earnings in this form do not directly affect cash flows. The goal of accrual accounting is to provide information relating to revenues, expenses, gains, and losses, and the related increment and reduction in assets and liabilities through the use of the matching principles, rather than just a list of cash receipts and outlays.

Any expenses or revenues incurred but yet to be paid or received, must be recognised in the income statement. Adjustments must also be made for payments made or received but not due. There are two types of accruals i.e. non-discretionary accruals and discretionary accruals. Non-discretionary accruals are those obligatory components, such as sales, salaries, utility bills, and rentals. Discretionary accruals are non-obligatory components for which the expenses incurred or to be incurred dependson the managers' discretion or choice; for instance, bonus expenses, advertising costs, and provision for doubtful debts.

Due to imperfect auditing, managers have an incentive to abuse the discretionary accruals that could bring earnings to their desired level (Healy & Wahlen, 1999). Managers can accelerate revenues or delay the expenses to hide poor current performance (Altamuro, Beatty, & Weber, 2005; McVay, 2006), thereby increasing the current year profit at the expense of future gain. If the performance is far from achieving the benchmark, or when the firm is under restructuring or having a new management team, managers are likely to overstate the current expenses for higher future earnings (big bath) (Jordan & Clark, 2011; Nieken & Sliwka, 2015). Also, Abuaddous, Hanefah, and Laili (2014) find that firms in Malaysia adopt big bath accounting by utilising the goodwill impairment loss recognition under the new provision of the Malaysian Financial Reporting Standards (MFRS) 136. Accrual accounting can also be abused via the so-called term known as "cookie jar reserves". This happens when certain expenses expected like the warranties and sales returns are overly estimated so that they could record it in liabilities as reserves for the future in case of a bad time. As such, when the target falls short, the liabilities can be reversed to increase that year's profit. Duh, Lee, and Lin (2009) find evidence that firms adopted the "cookie jar reserves" type of EM by recognising a higher amount of impairment losses, and, subsequently, reversing the impairment losses when they are in danger of missing their earnings target. The cookie jar reserves have become a convenient way of smoothing the earnings. Earnings smoothing occurs when the management is trying to reduce the variability of reported earnings by altering the components of earnings.

Nevertheless, the ability to abuse accruals is, however, limited as the discretion accruals are still constrained by GAAP (Barton & Simko, 2002; Ho et al., 2012). As a result, managers manipulate the earnings through

the firms' day-to-day operations. This action is commonly known as 'real activities manipulation'. Managers may issue big discounts at the end of the year to boost sales figures, withhold or reduce discretionary expenses like advertising, capital expenditure and R&D expenses, or sell their fixed assets to report higher earnings. Further, real activities manipulation is harder to detect by the auditor (Schipper, 1989) and less likely to be subject to violation of GAAP (Braam, Nandy, Weitzel, & Lodh, 2015; Evans, Houston, Peters, & Pratt, 2014). Graham et al. (2005) find that managers prefer to manage earnings via manipulating real activities than by using accrual methods.

Roychowdhury (2006) examined the more comprehensive methods used by firms to manipulate operational operations to avoid reporting earnings losses. It argues that REM can be detected via patterns in cash flows from operation (CFO), discretionary expenses, and productions costs for firms that are close to reporting a zero earnings benchmark. Sales manipulation can be done by temporarily offering price discounts to induce sales volume or by providing a more lenient credit term. As a result, the cash inflow per sale (the net of discounts) from these additional sales is lower, and the profit margins decline. They also argue that giving long credit terms like lower interest rates is primarily a price discount, hence, lowering the amount of the CFO to what is usually given at the sales level. In addition to sales manipulation, firms can also manipulate earnings by reducing discretionary expenses. She defines discretionary expenses as a sum of advertising expenses, R&D expenses, and selling, general and administrative (SG&A) expenses. To increase earnings, firms will attempt to reduce these expenses. If the costs incurred are in the form of cash, then reducing these expenses will increase the CFO in the current period. With regard to production costs, to manage upwards, firms produce more goods than the expected demand. With the higher production level, the fixed overhead costs can be spread over a larger number of units, thereby lowering the fixed costs per unit and the total cost per unit. Due to this, the reported cost of goods sold (COGS) is lower, and the gross margin will be higher. Using data from all the firms from COMPUSTAT between 1987 and 2001, she finds that firms offer price discounts to increase sales temporarily, engage in overproduction to lower COGS and reduce discretionary expenditures to improve margins to avoid reported earnings losses.

Hypotheses Development

Managers behave differently according to the ownership structure (Fan & Wong, 2002). This is because different types of ownership structures induce different monitoring and controlling processes by firms. This study divides the ownership structure into managerial ownership, institutional ownership, and family ownership

Managerial Ownership (MO)

The findings concerning whether managerial ownership affects firms' performance and constrains opportunistic behaviour have been mixed. Several studies around the world have found an inverse relationship between managerial ownership and EM behaviour (Ali et al., 2008; Alves, 2012; You et al., 2003). Using discretionary accruals as a proxy, they find evidence of low magnitude discretionary accruals when the proportion of managerial ownership is high, thereby supporting the Agency Theory view; for, instance countries like Taiwan (You et al., 2003), Japan (Teshima & Shuto, 2008), and Portugal (Alves, 2012). However, some studies, for instance, Cheng and Warfield (2005), find that EM is positively related to managerial ownership supporting the entrenchment hypothesis. They find that with a high level of managerial ownership, the level of EM activities increases, thus expropriating wealth for their private benefit (Al-Fayoumi et al., 2010; Huang, Wang, & Zhou, 2013).

As such, it is not surprising to find mixed results when examining the impact of managerial ownership on EM in Malaysia. While Ali et al. (2008) support the view of the Agency Theory, Johari et al. (2009) find a significant positive relationship indicating that the higher the proportion of managerial ownership, the higher the incidence of EM, thereby supporting the view of the entrenchment effect. On the other hand, Hashim and Devi (2008), and Abdul Rahman, Sulaiman, Fadel, and Kazemian (2016) fail to find any significant relationship between managerial ownership and EM.

Besides, the relationship between managerial ownership and REM has also been inconclusive. Laksmana and Yang (2014) consistently find a positive relationship for both DA and REM, indicating that firms with high managerial ownership have an incentive to manage earnings upwards. However, Haga, Höglund, and Sundvik (2018) find a negative relationship

with REM. Hsu (2015), and Shayan-Nia et al. (2017), on the other hand, find no evidence to support the association between managerial ownership and REM.

Given that prior studies have provided mixed results in terms of the impact managerial ownership has on EM, no direction is concluded. Hence, this study posits that:

H1: *There is a significant relationship between managerial ownership and EM.*

Family ownership (FO)

In Asia, firms are controlled mainly by family, including those of large listed firms (Ball et al., 2003). Studies in this regard have been inconclusive and mixed, resulting in two competing views concerning the role family owners play in monitoring the performance of the firms. In one aspect, known as the alignment effect, family owners are argued to align their interests with the minority shareholders resulting in higher earnings quality and informativeness. Wang (2006) and Tong (2007) supported this view when they find family firms can mitigate the potential expropriation of wealth from the firms. The other aspect is the entrenchment effect, where family owners are motivated to expropriate the wealth for their self-interests, and, hence, is associated with lower earnings quality. Jaggi, Leung, and Gul (2009) and Lim, How, and Verhoeven (2014), both supported this view when their study resulted in a negative relationship between family firms and earnings quality. Consistent with this view, Razzaque, Ali, and Mather (2015) also find that family firms engage in higher REM tools to manage earnings.

The results from the studies in Malaysia have also been mixed. Prior studies have shown that family firms in Malaysia value the long-term life of the firm to pass it on to future generations (Hashim & Devi, 2008; Hasnan, Rahman, & Mahenthiran, 2013), thereby observing the incentive to report earnings in good faith to preserve the family reputation. A more recent study, by Teh et al. (2017) finds that firms manage earnings due to having higher power and rights in decision-making, thereby supporting the entrenchment view. Studies in Malaysia have focused on discretionary accruals, and the results are mixed; the observation that family firms are

found to have an incentive to report earnings in good faith to preserve the family reputation is still ambiguous. There is still a possibility that family firms prefer to manage earnings via REM, as reported by Razzaque et al. (2015). With this in view, this study posits:

H2*: There is a significant relationship between family ownership and EM.*
       Institutional ownership (IO)

To date, the literature has significantly argued that the involvement of institutional investors in monitoring and disciplining the controlling owners of the firm can protect the minority interests (Claessens & Fan, 2002). However, study results around the world that examined the role institutional ownership plays in mitigating managerial behaviour have been mixed. The majority of the studies have argued that institutional investors would have the capacity, resources, and knowledge compared to other investors (Alzoubi, 2016; Lin, Wu, Fang, & Wun, 2014; Mitra & Cready, 2005). Given that the cost of exiting is high, institutional investors are likely to be involved in greater monitoring activity (Ping Sheng Koh, 2007), resulting in a negative relationship with EM. Nevertheless, some studies have found that the higher the institutional ownership, the higher the level of EM (Emamgholipour, Bagheri, Mansourinia, & Arabi, 2013; Zang, 2012), thereby causing the monitoring role played by the institutional investors to be inconclusive.

In Malaysia, the results of the impact of ownership on managerial decision-making behaviour have also been mixed. Ali et al. (2008), and Hashim and Devi (2012) support the view that the involvement of institutional ownership effectively mitigates the myopic behaviour of managers, however, Shayan-Nia et al. (2017), and Yang, Chun, and Ramadili (2009) find no evidence that institutional ownership constrains the EM activities.

As mentioned earlier, the agency problem that may arise is the opportunity of the controlling shareholders to expropriate the wealth of the non-controlling shareholders (Type II agency problem). In Malaysia, the MSWG was established to encourage shareholders' activism to safeguard the interests of the minority shareholders. However, the types of EM that these institutional investors can constrain has been mixed. Abdul Jalil and Abdul

Rahman (2010), and Rahayu, Omar, Rahman, and Kazemian (2016), found a negative association between institutional ownership and DA and REM, respectively. Kalgo, Nordin, Nahar, and Turmin (2016), on the other hand, found that institutional investors are only able to constrain REM activities.

Given that prior studies have provided inconclusive results on the role institutional ownership plays on EM, no direction of the relationship is determined. Thus, this study posits that:

H3: *There is a significant relationship between institutional ownership and EM*

Audit quality (AuditQ)

Most of the studies examining the impact of audit quality and EM have measured the size of the auditors as a proxy for audit quality. It is argued that larger sized auditors would have the capability in terms of manpower, resources, and knowledge to detect excessive accounting estimates (Becker, Defond, Jiambalvo, & Subramanyam, 1998; Zang, 2012) and thus , increase the credibility of the financial reporting of the firms (Chia, Lapsley, & Lee, 2007). Larger sized auditors are also concerned with the cost of clients misreporting and its effect on their reputation (Francis & Wang, 2008).

Studies have found evidence that audit quality can mitigate the abuse of accruals (Abdullah & Ismail, 2016; Al-Rassas & Kamardin, 2016; Chia et al., 2007; Hasnan et al., 2013; Rusmin, Astami, & Hartadi, 2014). However, Francis and Wang (2008) found that the quality of the audit is not uniform or standardised throughout the countries. This is true, as Gao et al. (2017) find a positive relationship between audit quality and DA. They argue that due to weaker legal systems and enforcement, auditors are less scrutinising compared to in countries with a stronger legal system.

On the other hand, Cohen and Zarowin (2010), and Zang (2012) find that firms that are audited by highly reputable auditors are likely to switch to REM. They argue that it is harder to convince the auditors concerning their aggressive accounting estimates. Further, manipulation via real activities is harder to detect. As such, they found a positive relationship between audit quality and REM and a negative association with DA. Shawn, Lee, Jung, and Moon (2016), however, contradict Cohen and Zarowin (2010), and

Zang (2012), finding that auditors can detect both DA and REM. Based on these mixed findings, this study posits that:

H4: There is a relationship between audit quality and EM

As it is known that firms reporting behaviour are also influenced by capital market forces, this study controls for market competition, financial distress condition, net operating assets level, and operating cycle (Gao et al., 2017; Zang, 2012). These firms are also controlled by size, leverage, performance and growth (Achleitner, Günther, Kaserer, & Siciliano, 2014; Cohen & Zarowin, 2010).

DATA AND RESEARCH DESIGN

Sample Selection

The study examined the population of mainboard companies listed on Bursa Malaysia for the period 2001 to 2016. Financial institutions and utility companies were excluded from the sample due to their difference in regulatory requirements, financial reporting standards, and compliance (Isahak, Mohd Sanusi, & Sulong, 2011). Following a previous study, at least 8 observations are required per industry per year (Cohen & Zarowin, 2010). All financial data were collected from Thomson Financial DataStream database, while ownership and auditor variables were manually collected from the annual reports. Firms with missing data were also removed. As a result, the sample size was reduced to 227 firms representing 3,632 firm-year observations (2001-2016).

Dependent Variables

Accrual-based earnings management (DA)

This study used the cross-sectional Jones model (Jones, 1991) following Zang (2012). Jones (1991) used total accruals which can be decomposed into non–discretionary accruals (also known as normal accruals) and discretionary accruals (also known as abnormal accruals). As non-discretionary is compulsory to incur, the focus of detecting EM is on the discretionary portion.

$$\frac{TA_{it}}{A_{it-1}} = \alpha_i \left[\frac{1}{A_{it-1}}\right] + \beta 1_i \left[\frac{(\Delta REV_{it} - \Delta REC_{it})}{A_{it-1}}\right] + \beta 2_i \left[\frac{GPPE_{it}}{A_{it-1}}\right] + \varepsilon_{it} \qquad (1)$$

Where,

$TACC_{it}$ = total accruals measured by net income (before extraordinary items and discontinued operations) – cash flows from operation, in year t for firm i

A_{it-1} = lagged of total asset (year t–1) for firm i

ΔREV_{it} = change in sales or revenue (revenues in year t – revenues in year t–1) for firm i

ΔREC_{it} = changes in receivables (REC_{it} – REC_{it-1})

$GPPE_{it}$ = gross property, plant and equipment in year t for firm i

ε_{it} = residual error (an unexplained component of total accruals) in year t for firm i

The gross property, plant and equipment (GPPE) and the change in revenue minus the change in trade receivables ΔREC was included to control for the non–discretionary accruals portion caused by normal business activities. All variables were deflated by the prior year's total assets to reduce the problem of heteroscedasticity. The equation was regressed cross-sectionally for industry–years with at least 8 observations and and the (DA) was computed by deducting the (NDA) (computed using the estimated coefficients from (3)) from the actual total accruals as the proxy for accruals management (Zang, 2012).

Real earnings management (REM)

This study followed Roychowdhury (2006) in developing the REM proxies. It comprised of 1) production manipulation measured by abnormal production costs (APROD), and 2) discretionary expenses manipulation using abnormal discretionary expenses (ADISX). Firms can attempt to report lower costs of goods sold to increase their gross margin and hence increase their reported earnings. This can be achieved by overproduction, lowering the cost of goods sold (COGS) via fixed cost. However, overproduction can cause firms to incur additional holding costs and are very likely to increase the marginal costs relative to sales. As such, the level of cash flow will be lower than the normal sales levels.

Production cost is defined as COGS plus the change in inventory during the year. Following Roychowdhury (2006), the normal productions cost (PROD) was estimated as follows:

$$\frac{PROD_t}{A_{t-1}} = \alpha_0 + \alpha_1 \left(\frac{1}{A_{t-1}}\right) + \beta_1 \left(\frac{S_t}{A_{t-1}}\right) + \beta_2 \left(\frac{\Delta S_t}{A_{t-1}}\right) + \beta_3 \left(\frac{\Delta S_{t-1}}{A_{t-1}}\right) + \varepsilon_t \tag{2}$$

Where,

$PROD_t$ = COGS + ΔInventory for the year t,
$A_{(t-1)}$ = total assets at the end of the previous year, t–1
S_t = Sales during the year t
ΔS_t = (Sales for the year t) – (Sales for the year t–1)
$\Delta S_{(t-1)}$ = (Sales for the year t–1) – (Sales for the year t–2)

Similarly, the estimation is regressed cross-sectionally for industry years and the abnormal level of production was measured by deducting the normal PROD (computed using the estimated coefficients from (2)) from the actual PROD.

Managers may also decide to reduce discretionary expenses to increase the reported earnings. The discretionary expenses include research and development (R&D) and selling, general and administrative expenses (SGA) which include employee training, travel, and maintenance.

Following Zang (2012), lagged sales value was used to derive the normal discretionary expenses from the equation below:

$$\frac{DISEXP_t}{A_{t-1}} = \alpha_0 + \alpha_1 \left(\frac{1}{A_{t-1}}\right) + \beta \left(\frac{S_{t-1}}{A_{t-1}}\right) + \varepsilon_t \tag{3}$$

Where,

$DISEXP_{tt}$ = Discretionary expense (the sum of R&D and SGA) for the period t
$A_{(t-1)}$ = Total assets at the end of the previous year, t-1
$S_{(t-1)}$ = Sales for the year t-1

Similar to the other REM metrics, the abnormal level of discretionary expenses (ADISX) was computed by deducting the normal DISEXP [after regressing equation (3) cross-sectionally for industry years with at least 8 firms] from the actual DISEXP. From this, firms that managed earnings upwards via REM would tend to have unusually low cash flows from operations and/or low discretionary expenses and/or abnormally high production costs. A single variable was created REM by combining the sum APROD and ADISX(–1).

Independent Variables and Control Variables

Table 1: Variables Definition for the Independent Variables and Control Variables

Variable	Code	Operationalisation	Source(s)
Ownership structure			
Managerial ownership	MO	Percentage of ownership by directors with managerial capacity above 5%	Johari, Mohd Saleh, Jaffar & Hassan (2008)
Family ownership	FO	Percentage of family ownership to the total number of shares	Hashim & Devi (2008)
Institutional ownership	IO	Proportion of shares owned by MSWG members	Hashim & Devi (2008)
Audit Quality	AuditQ	Dummy variable: 1 = Big 4, 0 otherwise	Chia, Lapsley, & Lee (2007)
Market shares	M_shares	Ratio of sales of the firm/industry total sales at the beginning of the year	Zang (2012)
Financial distress	Fdistress	1 if Z-Score is less 2.073, 0 otherwise	Altman (1993); Hasnan et al (2013)
Ability to inflate accruals (Net operating assets)	NOA	Dummy variable: 1 if NOA is above the median of industry year NOA, 0 otherwise	Zang (2012)
Firms operating cycle (OC)	lgOC	Natural log of O.C. where OC = Days accounts receivable + Days inventory	Kim and Sohn (2013)
Size	lgTA	Natural log of total assets	Shen & Chih (2007)
Leverage	LEV	Ratio of total liabilities to total assets	Koh (2003)
Performance	ROA	Return on Assets	Zang (2012)
Growth	MTB	Market to Book Value	Zang (2012)

RESEARCH DESIGN

As this study used companies listed in Bursa Malaysia over 16 years, a panel data methodology was adopted to examine the trend and factors associated with EM as this would be the most appropriate tool to study cross-sectional over longitudinal data. The following models were used.

$$EM = \alpha + \alpha_{1,j}MO + \alpha_{2,j}FO + \alpha_{3,j}IO + \alpha_{4,j}AuditQ + \alpha_{5,j}Market\_shares$$
$$+ \alpha_{6,j}Fdistress + \alpha_{7,j}NOA + \alpha_{8,j}lgOC + \alpha_{9,j}ROA + \alpha_{10,j}lgTA + \alpha_{11,j}LEV$$
$$+ \alpha_{12,j}MTB + \varepsilon_{it} \tag{4}$$

The dependent variable is the EM measures DA and REM following Zang (2012) and Anagnostopoulou and Tsekrekos (2017).

RESULTS AND DISCUSSION

Descriptive Statistics

Based on Table 2 above, the mean (median) value of DA for the 16 years is 0.054 (0.039). This finding is consistent with the mean value of 0.055 reported by Madhogarhia, Sutton, and Kohers (2009). Furthermore, the mean value is just slightly lower than the mean value of 0.056 recently documented by Al-Rassas and Kamardin (2016) among Malaysian companies. The REM metrics, on the other hand, have a lower mean (median) value compared to DA. The mean values are generally lower compared to the western countries (Cohen et al., 2008; Ferentinou & Anagnostopoulou, 2016; Zang, 2012) except for the abnormal production cost (PROD). The mean value of this study REM of 2.0%. The standard deviation for the REM proxies is relatively big indicating it varies widely across firms.

Table 2: Descriptive Statistics

Variable	N	Mean	SD	Median	25%	75%
DA	3632	0.054	0.053	0.039	0.017	0.073
REM	3632	0.020	0.174	0.019	-0.064	0.099
MO	3632	0.296	0.223	0.317	0.000	0.473
FO	3632	0.235	0.233	0.218	0.000	0.447
IO	3632	0.053	0.093	0.000	0.000	0.075
AuditQ	3632	0.624	0.500	1.000	0.000	1.000
M_shares	3632	0.025	0.049	0.007	0.002	0.020
Fdistress	3632	0.428	0.493	0.000	0.000	1.000
NOA	3632	0.490	0.485	0.000	0.000	1.000
ROA	3632	0.044	0.075	0.042	0.013	0.079
lgTA	3632	5.940	1.339	5.809	4.915	6.688

LEV	3632	0.208	0.172	0.186	0.053	0.326
MTB	3632	1.194	1.584	0.770	0.520	1.230
OC	3632	127.668	146.267	88.941	54.073	138.445

Definition of variables

DA	= Absolute value of abnormal discretionary accruals
REM	= PROD + ADISX(-1)
Market_shares	= Ratio of the firm's sales to total sales of its industry at the beginning of the year
Fdistress	= Dummy equals to 1 if Z-score is less 2.073; 0 otherwise
MO	= Percentage of shares owned by the directors with a managerial capacity above 5%
FO	= Percentage of shares owned by the family
IO	= Minority shareholders' watchdog consist of 5 MSWG members: EPF, PNB, LTAT LTH and SOCSO
NOA	= Dummy equals to 1 if the firm's net operating assets at the beginning of the year is higher then the industry median; 0 otherwise
AuditQ	= Dummy equals to 1 if firms being audited by big 4; 0 otherwise
ROA	= Return on assets
lgTA	= Natural log of total assets
LEV	= Leverage measured by total debts/total assets
MTB	= Market to book value
OC	= Firms' operating cycle - sum of days accounts receivable and days inventory

Table 2 also indicates that the firm-year sample has an average 2.5% share of sales volume relative to its industry peers. Given that at 75% the market shares value is at 2% and the median is only 0.7%, the sample is observed to be skewed to the left where high market shares may be dominated by only a few firms. For financial health proxy, the result shows that 57.19% of the sample are of healthy firms, and 42.8% of the sample are experiencing a financially distressed position over the 16 years. The sample firms also have an average operating cycle of 128 days and a median of 89 days. Following Kim and Sohn (2013), the operating cycle is proxied by the natural log of the sum of days' accounts receivable and days inventory to reduce the right skewness and to stabilise the variable, given the high standard deviation. The average of firms held by managerial ownership is 29.6% and is similar to the findings of Hashim and Devi (2008) of 29% respectively. The average family owned firms in this study is 23.5%, similar to the mean reported by Lim et al. (2014) at 23%. As for institutional ownership, the average IO for this study is 5.3% which is close to the 5.7% average reported by Hashim and Devi (2008). For the dNOA, it is that out of the 227 firms, 49% have higher net operating assets (NOA) at the beginning of the year higher than its industry median during the year 2001 to 2016. For the control variables, the mean ROA for this study is 4.4% which is slightly higher than 50% of the sample ROA. This is the same for the log value of total assets, leverage, and MTB where the mean values are reported at 5.94, 20.8% and 1.194 respectively while the median values are reported at 5.81, 18.6% and 0.77 respectively.

**Table 3: Descriptive Statistics for the Dichotomous
Independent Variable (AuditQ)**

AuditQ	Overall		Between		Within
	Frequency	%	Frequency	%	%
0	1367	37.64	133	58.59	64.24
1	2265	62.36	175	77.09	80.89
	3632	100	308	135.68	73.7

Definition of variables

AuditQ = Dummy equals 1 if firm is being audited by big 4; 0 otherwise

For the AuditQ, Table 1 shows that 62.36% of the 227 firms were audited by the Big 5 or 4 during these 16 years. This percentage is slightly lower than 64% reported by Ali et al. (2008). Table 3 reports detailed breakdown whereby, out of the 62.36% firms audited by big 4 firms, 80.89% have always used the service of the big 4 firms for 16 years. 64.24% of firms audited by the non-big 4, have always used the service of medium and small audit firms; 35.68% of the sample (81 firms) have used the services of both big 4 and non-big 4. The 81 firms are derived from deducting 308 firms with the total sample firms of 227 firms.

Table 4 reports the correlation among DA, REM, the independent variables and control variables. The purpose is to highlight potential multicollinearity issues when the correlation coefficient is more than 0.8 (Gujarati, 2011). As such, there is no multicollinearity issue. All the correlations have values less than 0.5, except for the correlation between M_shares and lgTA of 0.612 and between MO and FO of 0.733. The high correlation was expected as some of the family members also sit in as board members of the firms. The result shows that the DA has a significant negative relationships with REM. This suggests that firms appear to use both methods as a substitution.

Table 5 shows the result of multivariate regression determining the factors associated with EM via DA using the Modified Jones Model (DA). The Partial F-test indicates that the model has an individual firm effect (FE); thus, FE is more appropriate. This study then used the Hausman test to determine whether FE or random effect (RE) is appropriate, and the result shows a p-value of 0.1291 which means not to reject the null hypothesis and that the difference in coefficients is not systematic. For this, RE is a better

model to estimate the standard error. This study used a robust standard error and included the time effect into Model 4 to cater for the heteroskedasticity issue that is present and to address the cross-dependency problem in this model respectively. The table however, just indicated 'YES" for the year to represent the time effect which has been included and not reported to be parsimonious. The R-square in Model 4 reported at the highest of 4.85%. However, the low R-square has been common in EM studies. Ghazali, Shafie, and Sanusi (2015) also reported a similar R-Square of 4.14% when investigating the relationship between opportunistic behaviour, monitoring mechanism and financial distress with EM using accruals. Despite the low R-square, the Wald-Chi^2 provides evidence that this model is well-specified.

The DA column shows that DA has a negative association with FO and IO but no association with MO and AuditQ. This indicates the activity of DA is constrained when firms are controlled by families and institutions while no significant relationship was found between MO and DA consistent with Hashim and Devi (2008) and Hasnan et al. (2013). The insignificant result on the role of auditors to mitigate DA is also supported by Abdul Rahman et al. (2016) and I. Ishak, Haron, Nik Mohamad, and Abdul Rashid (2011). Also, the result shows that firms with greater ability to inflate accruals and longer operating cycle tends to use DA, consistent with Zang (2012) and Ipino and Parbonetti (2017). Smaller firms with high leverage ratio prefer to use DA. Therefore, hypothesis H_2, and H_3 are supported.

Table 4: Correlation Coefficient between Variables

	DA	REM	Market shares	Fdistress	MO	FO	IO	AuditQ	dNOA	lgOC	ROA	lgTA	LEV	MTB
DA	1.00													
REM	-0.07***	1.00												
Market_shares	-0.07***	-0.04***	1.00											
Fdistress	0.07***	0.02	-0.02	1.00										
MO	-0.01	-0.03	-0.21***	0.00	1.00									
FO	-0.07***	-0.02	-0.12***	-0.09***	0.73***	1.00								
IO	-0.05***	0.09***	0.26***	-0.13***	-0.25***	-0.18***	1.00							
AuditQ	-0.01	0.06***	0.12***	-0.16***	-0.09***	0.01	0.13***	1.00						
dNOA	-0.05***	0.10***	-0.13***	0.21***	0.09***	0.08***	-0.07***	-0.09***	1.00					
lgOC	0.11***	-0.03***	-0.09***	0.36***	0.12***	-0.00	-0.12***	-0.17***	0.24***	1.00				
ROA	-0.06***	0.21***	0.10***	-0.37***	-0.02	0.05***	0.12***	0.12***	-0.17***	-0.35***	1.00			
lgTA	-0.13***	0.09***	0.61***	-0.11***	-0.19***	-0.09***	0.26***	0.23***	0.02	-0.25***	0.28***	1.00		
LEV	0.08***	-0.07***	0.14***	0.50***	-0.01	-0.08***	-0.05***	-0.03	0.09***	0.13***	-0.24***	0.14***	1.00	
MTB	0.02	0.22***	0.18***	-0.18***	-0.21***	-0.18***	0.16***	0.13***	-0.19***	-0.25***	0.41***	0.17***	-0.03	1.00

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

Table 5: Regression Analysis

VARIABLES	(1) DA	(2) REM	Hypothesis Supported
MO	0.0081	0.0231	H_1 : No
	(0.0091)	(0.0361)	
FO	**-0.0225****	-0.0328	H_2 : DA
	(0.0093)	(0.0372)	
IO	**-0.0276****	**0.0952***	H_3 : YES
	(0.0124)	(0.0559)	
AuditQ	0.0035	0.0033	H_4 : No
	(0.0026)	(0.0091)	
M_shares	-0.0183	**-0.4884****	
	(0.0285)	(0.1888)	
Fdistress	-0.0007	**0.0263*****	
	(0.0029)	(0.0069)	
NOA	**-0.0051****	**0.0105***	
	(0.0024)	(0.0062)	
lgOC	**0.0056****	-0.0087	
	(0.0024)	(0.0074)	
ROA	0.0122	**0.0965****	
	(0.0296)	(0.0433)	
lgTA	**-0.0052*****	0.0101	
	(0.0014)	(0.0095)	
LEV	**0.0192***	-0.0115	
	(0.0099)	(0.0281)	
MTB	0.0009	**0.0058***	
	(0.0009)	(0.0030)	
Constant	0.0618***	-0.0197	
	(0.0139)	(0.0562)	
Observations	3,632	3,632	
R-squared	0.0485	0.0848	
Number of firms	227	227	
Year	YES	YES	

Diagnostic test

Multicollinearity (vif)	1.60	1.60
Heteroskedasticity (chi^2 stat)	26451.54***	18678.45***
Serial correlation (F-stat)	1.309	35.440***
Hausman test	17.58	45.73***

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1

For column 2, the result of the multivariate regression was generated using a FE robust standard error, to cater for the heteroscedasticity and autocorrelation issues. This table indicated 'YES" for the year to represent time effect included. REM is observed to be positively associated with IO at the 10% significant level. The result shows weak evidence for an increase in the percentage of institutional investors increasing the REM activity via overproduction and cutting down discretionary expenses (REM), hence inconsistent with Kalgo et al. (2016), and Zang (2012).

There is evidence that institutional investors consist of short-term (transient) institutional investors and long-term institutional investors, and their impact on EM is different (Ping Sheng Koh, 2003; Ping Sheng Koh, 2007). Bushee (1998) defines transient institutional investors as having a high portfolio turnover and highly diversified portfolio holdings. He found that firms with high transient institutions are likely to encourage EM behaviour. This study used the average effect of institutional ownership measured by the percentage owned by MSWG members (consisting PNB, EPF, LTAT, LTH, and SOCSO) with a highly diversified portfolio and high portfolio turnover (Abdul Jalil & Abdul Rahman, 2010). In 2016, the MSWG monitoring portfolio consisted of 254 public listed companies representing 28% of the total listed companies and covering 90% of market capitalisation (MSWG Annual Report, 2016). As such, although the main objective of its establishment was to constrain myopic managerial behaviour and to protect the minority shareholders, it is possible that members of MSWG may exhibit transient holdings in some firms, focusing on current earnings, and, thus, increasing REM. As such, this finding adds to the literature that having high IO may exert more pressure to constrain DA compared to REM perhaps due to having limited awareness of the long-term implication of deviating from optimal business strategic decisions, little effort has been put in place to monitor REM activities. Thus, firms deemed via REM, the cost is lower compared to DA.

Consistent with Zang (2012), Ho et al. (2015) and Gao et al. (2017), there is no significant relationship between AuditQ and REM. The result indicates that, firms in highly competitive markets, experiencing financial difficulties and having less flexibility in accruals, due to high net operating assets, adopt both production and discretionary expenses manipulation methods to achieve their targeted earnings level. It is also observed that contradicting to DA, firms with high growth and good performance are observed to manage earnings via REM, both significant at the 5% level.

Overall, concerning AuditQ, the result shows an insignificant positive relationship between AuditQ and DA and REM. This indicates that the big four external auditors in Malaysia, who are expected to play a better monitoring role and thus mitigate the myopic behaviour of the management in reporting financial performance, is not effective. Although the result fails to support hypothesis H_4, this finding is consistent with prior studies in the Malaysian context, where no relationship between these two variables was found (Abdul Rahman et al., 2016; I. Ishak et al., 2011; Rahman & Ali, 2006). The result is not surprising, as Francis and Wang (2008) find evidence that there is no significant difference in the quality of earnings between big four and non-big four audit firms. In the absence of investor protection, big four firms have no incentive to increase the quality of the audit. Although Malaysia is categorised as having strong investor protection, Leuz et al. (2003) find that Malaysia has the highest incidence of EM in that category. Abidin and Mohamad-Nor (2016) argue that a lack of competition among auditors would lead to lower audit effort, and, thus, affect the quality of the audit. In Malaysia, the market shares of the big 6/4 was around 60% in 1991-1996 (Mohd Iskandar, Maelah, & Aman, 2000); 72% domination in 2003 (A. M. Ishak, Mansor, & Maruhun, 2013); and 57% based on the number of companies; 77% is based on the audit fees for the years 2008 and 2009 (Abidin & Mohamad-Nor, 2016). Furthermore, it was also found that larger firms are now more receptive of the non-big four firms to serve as their external auditors, hence suggesting that the current big four are starting to lose their share (Abidin & Mohamad-Nor, 2016). The acceptance of the non-big four as their auditors possibly indicates that there is no difference in the quality of auditing service, and, hence, explains the results of this study being insignificant.

Table 6: Summary of the Results and the Corresponding Hypothesis

No	Hypotheses	Predicted	AEM	REM
1	*H1*: There is a significant relationship between managerial ownership and earnings management.	-/+	Unsupported (+) Insignificant	Unsupported (+) Insignificant
2	*H2*: There is a significant relationship between family ownership and earnings management.	-/+	Supported (-)	Unsupported (-) Insignificant
3	*H3*: There is a significant relationship between institutional ownership and earnings management.	-/+	Supported (-)	Supported
4	*H4*: There is a relationship between audit quality and earnings management.	-/+	Unsupported (+) Insignificant	Unsupported (-) Insignificant

CONCLUSION

Studies of EM have been concentrated on investigating factors motivating the opportunistic behaviour to manage earnings by abusing the accruals. Only recently, studies are looking into managerial behaviour, making decisions that deviate from its optimal strategic decisions known as REM. As such, this paper aimed to investigate whether the ownership structures and audit quality play a role in mitigating EM behaviour.

The results show that the activities of DA can be mitigated by having a higher percentage of family ownership and institutional ownership. Interestingly, however, firms with high institutional ownership are not able to mitigate REM as such, these firms would prefer to manage earnings via REM since management via DA would increase the risk of being detected. This paper also found that the other control mechanism, audit quality is not significant in mitigating the EM activities both DA and REM. The paper adds to the growing body of empirical knowledge dealing with the determinants of DA and REM from the lens of an emerging economy like Malaysia. The results offer practical implications to both regulators and auditors. Regulators may enhance information disclosure by firms in the financial report, whereas the auditor may re-examine their approach during the auditing exercise to reduce the possibility of earning management among the companies that the majority of shareholders are institutional investors.

Nevertheless, this study was only conducted on firms that survived over the 16 years. As such, to estimate the suspected firms to manage earnings has been challenging,resulting in a low percentage. A more comprehensive study can be conducted to include PN17 companies, and thus better comparisons can be made to understand firms' financial reporting behaviour. Furthermore, this study used the Modified Jones (1995) model and although there are several other different measures of earnings management documented, there is still little evidence documenting as to which measure is superior or more appropriate (Gul, Fung, & Jaggi, 2009). Nevertheless, this study recognizes that using other accrual measures for instance, inclusion growth and cash flows (Gul et al., 2009) or discretionary revenues (Stubben, 2010)), could possibly provide different results. Also, future studies could use multiple proxies for audit quality, such as audit fees, audit specialization, and audit tenure, to provide a comprehensive understanding of the effect they have on the EM behaviour.

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