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THE INFLUENCE OF EXTERNAL AUDIT QUALITY ON DISCRETIONARY ACCRUALS AND REAL EARNINGS MANAGEMENT PRACTICES: AN ANALYSIS OF MALAYSIAN FIRMS

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ABSTRACT

This paper aims to analyse the mitigating effects of external audit quality (EAQ) factors on earnings management (EM) practices. Data were collected from firms listed on Bursa Malaysia's main market, covering the years 2011 through 2022. Panel regression was employed to analyse the data. The findings of this study confirmed a significant negative association between audit reputation, audit quality, audit opinions, and EM of listed firms in Malaysia. Audit fees and audit tenure were found to be not significant in relation to EM. The study included five control variables in the analysis, and only economic value added (EVA) was found to be significant. The findings suggest that a number of audit quality factors are indicative of EM among listed firms. The authors extend, as well as contribute to, the growing literature on the EAQ, and therefore, wider corporate governance literature. Thus, it provides originality by presenting empirical evidence and outcomes to fully understand how discretionary accrual and real EM affect EAQ in the Malaysian context. Therefore, stakeholders should place higher concern on the selection of an external auditor, and investors should take into account the external audit factors when making investment decisions. Measuring the effectiveness of EAQ allows decision-makers

to evaluate how effective employed governance measures are in improving shareholders' perceptions of financial information quality and mitigating EM practices.

Keywords: audit quality, discretionary accruals, earnings management, external audit quality, real earnings management

INTRODUCTION

Many corporate failures have been attributed to the misconduct of management, which typically involves the manipulation of earnings. These practices frequently deceive shareholders, investors, and other stakeholders for years before the company ultimately collapses and becomes unsustainable (Nuhu et al., 2024; Supriyanto & Novriyanti, 2024). Earnings management (EM) practices deceive consumers of financial statements by providing false information about a company's actual operating performance, thus jeopardising the availability of accurate financial information in properly functioning capital markets due to information asymmetry (Ahmadi et al., 2023; Nguyen et al., 2024; Priharta & Rahayu, 2019). Financially deceptive firms tend to engage in deceptive practices before committing fraudulent behaviour (Anh et al., 2020; Azad et al., 2023; Martinez & Carvalho, 2021).

Many corporate scandals have been linked to the boards of directors' lack of diligent governance roles, the board relinquishing power to corporate managers who serve their own self-interests, and the board's lack of responsibility to stakeholders (Kazmi et al., 2024; Sirot et al., 2024). Sunbeam, Kmart, Enron, Global Crossing (USA), BCCI, Maxwell, HIH Insurance (Australia), and Polly Peck (UK), are among the many well-publicised cases of financial irregularities reported around the world, which have been attributed to poor corporate governance and management's failure to properly prepare adequate financial reports. As a result, a crisis of confidence towards financial reporting standards and corporate governance has been triggered.

The rise in managers' opportunistic behaviour in many sectors necessitates the improvement of external audit quality (EAQ) (Ahmadi et al., 2023; Akhlaghi et al., 2023; Ammer & Pantamee, 2024; Mwangi, 2024). However, there is hope that certain components of EAQ could provide relief to the conventional accounting and auditing structure, which appears to be vulnerable (Okour & Choong, 2020; Siala & Jarboui, 2019). External audit is a crucial component of corporate governance since it ensures that financial statements are presented in a fair and truthful manner. Thus, the quality of external audit plays an important role in corporate governance as it lays the foundation for an efficient control system, while also improving

efficiency, transparency, and accountability (Abozaid et al., 2020; Agyei-Mensah, 2019; Mardnly et al., 2021; Nuhu et al., 2023). The significance of EAQ in constraining EM has attracted much attention as a result of corporate accounting scandals (Astami et al., 2017; Houqe et al., 2017). Incorporating current EAQ approaches in the analysis of EM is considered appropriate to equip the accounting profession to successfully address issues related to increasing management fraud (Gandıa & Huguet, 2021; Nguyen & Duong, 2021; Okour & Choong, 2020).

Healy and Wahlen (1998) found that EM occurs when managers manipulate financial reports to deceive stakeholders about the true performance of the company and to manipulate contractual outcomes based on accounting figures. Callao Gastón et al. (2017) stated that Jones (1991) models are the most effective in identifying and measuring EM in the Eastern European economic environment. Additionally, this model, which is not frequently used in the literature, produces significantly better results in terms of adjusted R^2 compared to the models proposed by Healy and DeAngelo. Therefore, it is important to evaluate the ability of each model to detect EM in a specific economic situation before applying it. Various factors and circumstances can influence the results of EM validation and measurement. The criticism of the Jones model is that it does not incorporate cash flows, which can result in the model incorrectly identifying accrual items as containing intervention when they do not (Hribar & Collins, 2002). Dechow et al. (1995) compared the modified Jones model to Healy, DeAngelo, and the traditional Jones model and found that the modified Jones model is the most effective in testing for EM. On the other hand, Guay et al. (1996) argue that both the Jones and modified Jones models provide valid estimations of discretionary accruals.

According to Kouaib and Jarboui (2014), and Lin and Hwang (2010), Jones and modified Jones models can produce powerful tests for EM and are more powerful for revenue and bad debt manipulations than non-bad debt manipulations. Dechow et al. (1995) compared the modified-Jones model to the standard Jones model and found that the earlier is significantly more effective at detecting EM. Performance matching, as calculated by Kothari et al. (2005), does not entirely address the issues driven on by inaccurate discretionary accrual (DACC) models or by a researcher's failure to recognise the accrual management incentives specific to the study subject under consideration. Instead, the approach offers more controls for what is regarded as "normal" EM.

According to Hassan et al. (2023), managers tend to switch from examining DACC to manipulating real earnings management (REM) when they face constraints. However, this switch can have negative consequences on cash flow, sustainability, and liquidity in the development of new products and markets. Given the

potential impact on investors' confidence, it is important to evaluate the extent of manipulation by managers, including trade-off practices and the effectiveness of corporate governance mechanisms in reducing these manipulations in listed firms in Malaysia.

Previous literature has shown the importance of corporate governance mechanisms, but there has been limited research on their application in the Malaysian context. A large number of academic studies have established that the various scandals and malpractices within the corporate governance in Malaysia necessitate reforms to address the underlying issues, which include ownership concentration, ownership composition, political influence, earnings manipulation, and disclosure issues (Andriana et al., 2024; Azad et al., 2023; Nasiri & Ramakrishnan, 2020; Nuhu et al., 2024). Furthermore, the role of EAQ in preventing EM among listed firms has not been extensively studied, despite the significant impact these mechanisms have in reducing EM. Currently, there is insufficient evidence on which of these mechanisms effectively reduce distortions and misreporting of company earnings, both in developed and emerging economies. This research aims to examine this association and address the existing inconsistencies. The investigation examined the hypothesis that this inconsistency may be partly caused by managers who alternate between different methods of manipulation when certain mechanisms of corporate governance make some methods riskier or potentially more expensive than others. In terms of this motivation, a specific concern of this research is to analyse the influence of EAQ, which can lead managers to choose between DACC and REM. This study contributes to the growing body of literature on EAQ within the broader field of corporate governance research. Additionally, this study is original as it is the first to consider five EAQ factors (audit fees, audit tenure, audit reputation, audit quality, and audit opinion) within the Malaysian context in relation to both DACC and REM practices.

The DACCs are estimated using the modified Jones model and Kothari et al. (2005) model while REM of Roychowdhury (2006) model were used to estimate abnormal cash flow operating activities (ABCFO), abnormal production cost (APROD), and abnormal discretionary expenses (ADIEXP). Hence, the aim of this investigation is to study if EAQ influence both EM (DACC) and REM (ABCFO, APROD, and ADIEXP) of Malaysian public companies. This research adds to the existing body of knowledge and literature in the following ways. First, this study contributes to the literature on how EAQ helps to explain the behaviour of EM among listed firms in Malaysia for the period of 12 years (2011–2022). Secondly, this study provides further support to the Dechow et al. (1995) and Kothari et al. (2005) models, as well as Roychowdhury (2006) model in predicting the effectiveness of external audit in constraining EM practices. The predictive ability of the models was verified using five proxies of EM.

LITERATURE REVIEW, THEORETICAL BACKGROUND, AND HYPOTHESES DEVELOPMENT

One of the most important aspects of corporate governance is auditing, which ensures an accurate and fair view of a company's financial statements and result a better performance. Every public limited company is required by law to have a statutory audit in their respective countries to ensure effective corporate governance, improved efficiency, transparency, and accountability (Afifa et al., 2021; Azad et al., 2023; Nguyen et al., 2024; Orazalin & Akhmetzhanov, 2019). An external audit is a corporate governance mechanism that provides guidance on how auditors should assess a company's internal control system (ICS) and offers a reasonable level of assurance that the company's financial statements are accurate. A significant monitoring system that can assist managers and shareholders in aligning their interests and reducing the likelihood of opportunistic management behaviour is the external independent auditor. It has been demonstrated that the audit committee's efforts lead to effective management questioning, and the auditor's opinion contributes to the accuracy of financial reporting (Astami et al., 2017; Khalil & Ozkan, 2016; Luthan & Satria, 2016). Whenever financial crises arise, people in society as a whole frequently question why auditors do not even diligently fulfil their duties and commitments, believing that auditors are in charge of identifying fraud and other related fraudulent activities (Houqe et al., 2017; Taufiq, 2023; Zalata et al., 2020). EAQ would be able to address organisation problems relating to ownership and control segregation (Agyei-Mensah, 2019; Akhlaghi et al., 2023). To put it another way, independent auditing is one of the most relevant and reliable ways to balance the interests of executives and shareholders.

Existing literature shows that EAQ plays a crucial role in EM and the studies using various EM techniques have found a relationship between EAQ and EM (Abu Afifa et al., 2023; Gandía & Huguet, 2021; Mardnly et al., 2021; Orazalin & Akhmetzhanov, 2019; Özcan, 2019; Yasser, Soliman, 2018; Zalata et al., 2020). It has been shown that most empirical evidence supports the effectiveness of EAQ as corporate governance mechanism, some studies distinguish between the roles of various EAQ dimensions, which is worth noting.

Although there is no agreed-upon underlying theory that specifically explain EAQ, a review of the literature reveals that the agency, institutional, stakeholder, and stewardship theory have been used to clarify and analyse the relationship between EM and audit quality (Abu Afifa et al., 2023; Alsmairat et al., 2019; Assenso-Okofo et al., 2021). The basis of the theories is the conflict of interest between owners and managers. Higher quality financial reporting is a useful tool for owners

of the firm to keep track of management activities and improve management's stewardship to the owners (El-Moslemany & Nathan, 2019; Salehi et al., 2018). This view provides support for external audit as a relevant and reliable way to balance the interests of managers and shareholders, and addresses organisation problems relating to ownership and control segregation (Agyei-Mensah, 2019; Alhadab, 2018; Saleh et al., 2022a).

The theories also argue that achieving firm's success often meets the stewards' personal needs. Motivation that are not financial, such as the desire for accomplishment, recognition, the inherent pleasure of good results, reverence for authority, and the work ethic are all considered in the stewardship theory. Managers' stewardship behaviour results in positive corporate governance practices when the firm's claimed values are related to the performed values. This is because the agent's collective behaviour and attitude generally benefit principals, such as firm owners. Stewardship assumes that there is a convergence of aims between the principal and the agent. The approach is also effective intra-firm corporate governance practices, as managers may benefit from their subordinates' steward-like behaviour because it will help them achieve a common goal (Awuye, 2022; Hassan et al., 2023; Saleh et al., 2022b; Waldkirch & Nordqvist, 2016).

Thus, based on the agency and stewardship theory, EAQ should have a constraining influence on EM. The significance of external audit has therefore placed auditors in the governance position that can help agencies prevent problems (Fan & Wong, 2005). External auditors are seen as credible and experienced agents help in minimising the risk of information asymmetry and managerial opportunism. Five external audit components have been discovered to be an essential in determining EAQ, specifically auditor's industry specialisation, audit fees, auditor's reputation, audit tenure, and audit opinion. The following subsections examines the influence of these elements on EM practices and form this study's hypotheses.

Auditor's Industry Specialisation

The external auditor provides assurance to stockholders that a company's financial statements are correct. Furthermore, for external auditors to adequately execute their auditing function, independence is the first and most critical consideration (Abozaid et al., 2020; Francis et al., 2016; Nguyen et al., 2023). The significance of industry specialisation towards audit quality has been reported in Kusumaningtyas et al. (2019), Affes and Smii (2016), and Astami et al. (2017), among others. Such specialisation also significantly determines the quality of financial reporting (Alzoubi, 2018; Martinez & Moraes, 2017). The results of Orazalin and Akhmetzhanov (2019) show that lower loan costs have an association with

higher audit quality. The findings, however, indicate that EM is unaffected by audit quality. Abu Afifa et al. (2023) and Ammer and Pantamee (2024) findings indicates that audit firm industry specialisation affects EM practices which implies that industry specialisation restricts EM and minimise the opportunistic behaviours. Past empirical studies have documented that auditor's industry specialisation is negatively and significantly linked to EM practices (Kazmi et al., 2024; Mardnly et al., 2021; Muhtaseb et al., 2024; Rizky et al., 2024). Specialised auditors were seen as being able and motivated to produce high-quality audits as their reputation was at risk and their superior understanding of the field in which they specialise (DeFond, 1992). Based on this argument, the following hypothesis is proposed:

H1: Audit firm industry specialisation negatively influences the level of EM.

Audit Fees

Audit fees are the compensation paid to auditors for their expert services. They depend on a variety of parameters, including the complexity of the services, level of experience, and others (Mitra & Hossain, 2007). The risk involved in the task, the complexity of the services provided, the level of expertise necessary to perform the services competently, the cost structure of the audit firm and other professional factors are all played an essential role in determining the audit fee (Almarayeh et al., 2020). According to Salehi et al. (2018), there is a significant and inverse relationship between audit fees and managerial ability. Furthermore, their study indicates that firms with lower audit fees tend to have a higher correlation between managerial abilities and the quality of internal controls. On the other hand, Akhlaghi et al. (2023) and Li and Liu (2024) found a strong and positive correlation between atypical auditing fees and managerial overconfidence, suggesting that auditing fees may increase.

Greiner et al. (2017) found that auditors charge higher audit fees to clients who engage in aggressive real-time EM. Past literatures have indicated significant association between audit fees and EM practices (e.g., Gandía & Huguet, 2021; Martinez & Moraes, 2017; Sitanggang, et al., 2020). Audit fees is positively related to EM practices in two different ways. Firstly, the influence of audit fees on EM is translated based on auditor independence. Auditor independence is threatened by high audit fees, which ultimately have an impact on audit reports (Ching et al., 2015; Eriabie & Dabor, 2017; Mitra & Hossain, 2007). Secondly, audit fees indicate auditor's concerns over audit risks and probable misstatements in the financial statements. For example, auditors tend to demand high fees when large accruals are present in the clients' accounts (Gandía & Huguet, 2021; Mazza & Azzali, 2018; Shehadeh et al., 2024). This is because large accruals are less

likely to be realised and raise inherent risks, resulting in further audit process and associated audit fees. Hence, the following hypothesis is proposed:

H2: Audit fees negatively influence the level of EM.

Auditor's Reputation

The audit firms are known for higher capital and capabilities in conducting audit. The value judgement of an audit is dependent on the firm's reputation and larger firms are known to achieve higher quality audits (Almarayeh et al., 2020; Alwardat, 2019; Kouaib & Jarboui, 2014). Large audit firms also have greater stake in their credibility and more likely to perform higher quality audits than small firms (Can, 2019; Yasser & Soliman, 2018; Astami et al., 2017). It was also argued that the Big 4 firms depend on globally recognised brand names and have an incentive to offer a consistent standard of audit quality across various market segments (Lin & Hwang, 2010). It was determined that in a less litigious setting, the degree to which the auditor's wealth serves as a bond for audit quality should be weakened. This raised the question of whether Big 4 auditors' reputational considerations are strong enough to manage the higher moral hazard risk. Past studies have consistently shown that EM practices is lower in firms audited by Big 4 firms compared to non-Big 4 firms (Azhar & Islahuddin, 2018; Can, 2019; Hadriche, 2015; Lin & Hwang, 2010; Lopes, 2018; Reguera-Alvarado et al., 2019; Rusmin, 2010; Siala & Jarboui, 2019; Soliman & Ragab, 2014; Zalata et al., 2020). The following hypothesis is therefore formulated:

H3: Audit firm's reputation negatively influences the level of EM.

Audit Tenure

Audit tenure has been described as the length of an auditor's relationship with a client firm (Okolie, 2014). The closeness argument indicates that longer auditor' tenure undermines the integrity and objectivity of the auditor, and thus lowering audit quality (Kyriakou et al., 2024; Rizky et al., 2024). A prolonged relationship between the auditor and clients, in particular, exposes the auditor to familiarity risks, which increases the possibilities of the auditor yielding to client pressure in an audit dispute or being less tolerant of the client's accounting practices and judgments. However, many previous studies that examine audit tenure and EM have reported that audit tenure is positively associated with audit quality and significantly reduces EM practices (Almomani, 2015; Alzoubi, 2018; Hadriche, 2015; Lin & Hwang, 2010; Martinez & Moraes, 2017; Miko & Kamardin, 2015). Audit tenure determines the extent of auditor's knowledge of the clients.

Longer tenure enables the auditor to gain more knowledge about the clients and thus enhances audit quality. Audit tenure is also indicative of financial reporting quality. Auditors are likely to leave clients who have lower financial reporting quality, while corporations with high financial reporting quality are more likely to retain their auditors (Antle et al., 2006; Huang et al., 2007; Özcan, 2019). These associations are suggestive of the influence of auditor's tenure in detecting and preventing management's opportunistic behaviours. Thus, the following hypothesis is developed:

H4: Audit firm tenure negatively influences the level of EM.

Audit Opinion

The auditor's report was criticised for being too brief to encourage a layman to comprehend the essence of an audit and significance of the auditor's report. This was seen as a major contributor to the so-called "expectation gap," in which consumers of financial statements demand more from the audit than is required by legislative and other regulations. An audit opinion is determined by the availability of sufficient and adequate audit evidence for auditors to reach their conclusion (Maldonado et al., 2019; Svanberg & Öhman, 2014). In reaching this audit opinion, an auditor must determine whether they have obtained sufficient and adequate audit evidence to evaluate if the financial statements are free of material misstatement, whether uncorrected misstatements are material, and whether the financial statements provide an accurate and reasonable view, both individually or in cumulatively (Svanberg & Öhman, 2014).

An audit opinion can be either unmodified or modified. An unmodified audit report is one that does not include any additional modifications or paragraphs, such as "emphasis of matter" or "other matters" paragraphs, and where the audit opinion has not been altered by a "qualified" opinion (Hadriche, 2015; Kaplan & Williams, 2013). The findings of Azad et al. (2023) and Sai et al. (2024) indicate a negative relationship between EM and both discovered and modified misstatements of total assets. It has been argued that an unmodified audit opinion motivates managers to put more effort to achieve positive and accurate results, thereby reducing EM practices (Alhadab, 2018; Moazedi & Khansalar, 2016; Xu et al., 2018; Yasser & Soliman, 2018). Numerous research from different countries have found evidence that firms with unmodified audit opinions reduce the level of EM (Abolverdi & Kheradmand, 2017; Gajevszky, 2014; Moazedi & Khansalar, 2016; Rusmanto, 2014; Tsipouridou & Spathis, 2014). These empirical supports lead to the following hypothesis:

H5: Audit opinion negatively influences the level of EM.

RESEARCH METHODS

Data and Sample

The total number of companies listed on Bursa Malaysia main market, which had 788 firms as of March 2023, makes up the population for this study. Main market firms have a larger market capitalisation and are more established and visible to the public compared to other markets in the bourse. Samples were selected based on completeness and a sufficient number of firm observations. A total of 566 firms were chosen based on the completeness criterion as shown in Table 1. Completeness is crucial to ensure that the same set of listed companies is used throughout the research and to avoid redundancy. The second criterion was added as prior studies have shown that DACC in financial institutions is quite distinctive (Hassan et al., 2023; Nuhu et al., 2023; Saleh et al., 2022b). Therefore, a final sample size of 566 listed companies, comprising of 6,792 firm-year observations, was chosen. This represents 72% of the total population.

Table 1
Sample selection procedure

	Firms listed on the Bursa Malaysia as of 2023	No. of subsectors	No. of firms	Percentage
S/N	Sectors			
1.	Construction	1	51	6.56
2.	Consumer product and service	8	171	21.6
3.	Energy	3	31	4.06
4.	Financial service	3	31	4.06
5.	Healthcare	3	14	1.83
6.	Industrial product and service	10	227	28.6
7.	Plantation	1	42	5.51
8.	Property	1	99	12.4
9.	Real estate and trust	1	18	2.36
10.	Technology	4	43	5.38
11.	Telecommunication	3	16	2.09
12.	Transportation	2	33	4.06
13.	Utilities	2	12	1.57

(*Continued on next page*)

Table 1: (*Continued*)

Firms listed on the Bursa Malaysia as of 2023	No. of subsectors	No. of firms	Percentage
Total firms		788	100
Less: Firms listed after the beginning of the study period		110	
Financial service firms		31	
Firms with missing data 2011–2022		81	
Total sample		566	72.0

Source: Bursa Malaysia (2023)

Earnings Management Estimations

The dependent variable and level of EM were estimated using three different models, deliberated below:

Model 1: Dechow et al. (1995) has measured EM practices based on DACC, formulated as total accruals (TACC) minus non-discretionary accruals (NDACC). This study termed the estimated DACC based on this model as DACCD (discretionary accruals modified by Dechow). The mathematical formula of estimating EM based on Dechow et al. (1995) is as below:

$$DACCD = TACC_t - NDACC_t$$

$$TACC_{it} / A_{it-1} = \left(\triangle CA_{it} - \triangle CL_{it} - \triangle Cash_{it} + \triangle STD_{it} - Dep_{it}\right) / A_{it-1} \quad (1)$$

To calculate the TACC, Equation 2 was used. This study used the Dechow model to calculate the TACC before estimating the NDACC. This is how the model is expressed:

$$ACC_{it} / A_{it} - 1 = \beta_0 (1 / A_{it} - 1) + \beta_1 (\Delta REV_{it} - \Delta REC_{it}) / A_{it} + \beta_2 (PPE_{it} / A_{it} - 1) + \varepsilon_{it} \quad (2)$$

Model 2: Kothari et al. (2005) has adopted Dechow et al. (1995) model and adjusted for a performance-matched firm's DACC. However, Kothari model is used as the appropriate DACC measure in this study as it retains all three original explanatory variables. The model is expressed below:

$$TACC_{it} / A_{it} - 1 = \alpha_1 t (1 / A_{\text{it}} - 1)] + \alpha_2 i [(\Delta REV_{it} - \Delta REC_{it}) / A_{\text{it}} - 1] + \alpha_3 i [PPE_{its} / A_{\text{it}} - 1] + \alpha_4 i (ROA_{it}) + \varepsilon_{it} \quad (3)$$

Model 3: This current study perceived REM as actions taken by managers that differ from standard business practices. Roychowdhury (2006) model has been well-recognised and widely employed in the past literatures. Roychowdhury (2006) has used the absolute cash flow (ABCFO, APROD, and DEXP) to signal EM practice. Price reductions, overproduction to report reduced cost of goods sold, and a decrease in discretionary spending to boost reported margins, according to Roychowdhury (2006), all contribute to temporarily increase sales. In this model, three proxies were employed to estimate REM (ABCFO, APROD, and DEXP).

$$ABCFO_t / A_{t-1} = \alpha_{0+}\alpha_1 (1 / A_{t-1}) + \beta_1 (S_t / A_{t-1}) + \beta_2 (\Delta S_t / A_{t-1}) + \varepsilon_{it} \quad (4)$$

$$PROD_t / A_{t-1} = \alpha_{0+}\alpha_1 (1 / A_{t-1}) + \beta_1 (S_t / A_{t-1}) + \beta_2 (\Delta S_t / A_{t-1}) + \beta_2 (\Delta S_t / A_{t-1}) + \varepsilon_{it} \quad (5)$$

$$DIEXP_t / A_{t-1} = \alpha_{0+}\alpha_1 (1 / A_{t-1}) + \beta (S_{t-1} / A_{t-1}) + \varepsilon_{it} \quad (6)$$

Measurement of the Independent Variables

There are five independent variables that have been found to be essential for predicting EM practices in firms. Six control variables that affect how independent variables influence EM practices were also discovered by the study. Due to the fact that much other earlier research focused primarily on firm characteristics (firm size, sales growth, age, leverage, and cash flow), these variables were included as controls. The description and measurement of the independent variables utilised in the present study are summarised in Table 2.

Table 2
Description and measurement of the variables

Variables	Measurement description	Sources
AUDFEE	Natural log of total audit fees paid	Antle et al. (2006)
AUDTEN	Natural log of the number of years of engagement with the same audit firm	DeFond, M. (1992), Elder et al. (2015)
AUDQLT	1 if the firm is audited by a specialised auditor, 0 otherwise	Rusmin (2010), Almomani (2015).
AUDTRT	1 when the company is audited by at least one "Big 4" and 0 otherwise	Maldonado et al. (2019)
AUDOPN	1 = audit report modified for GC, 0 otherwise	Xu et al. (2018), Abolverdi and Kheradmand (2017)
Control variables		
ROA	The net income divided by TA	Molnar et al. (2017)
ROE	Equity (EBITDA/TE)	Molnar et al. (2017)

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Table 2: (*Continued*)

Variables	Measurement description	Sources
ROCE	PBIT/Capital employed	Francis et al. (2016)
EVA	Net operating profit after tax (NOPAT) minus total capital employed (TCE) multiply by cost of capital (CC), (NOPAT – TCE × CC).	Vătavu (2015)
NIM	Measured as a difference between interest income and interest expenses / TA	Francis et al. (2016)
Corporate tax	Ratio of tax to EBIT	Vătavu (2015)

Control Variables

This research considers a wide range of controls when examines the influence of EAQ on EM practices. Firstly, the firm performance indicators of the firms were taken into consideration, which include more predictable and diverse measures. As a result, earnings from those firms should be of better quality and accurately reported to the stakeholders (Awuye, 2022; Gandía & Huguet, 2021; Saleh et al., 2022a). However, a review of earlier studies shows that firms' managers have a significant amount of power to manipulate earnings due to the numerous transactions they carry out (Abu Afifa et al., 2022; Assenso-Okofo et al., 2021; Alwardat, 2019; Hassan et al., 2023). It could be argued that the elements, such as the return on asset (ROA), return on equity (ROE), return on capital employed (ROCE), net interest margin (NIM), economic value added (EVA), and corporate tax (CTAX), could encourage managers to manipulate performance. Furthermore, taxes and company performance were chosen as control variables because these two factors are most important to investors, stakeholders, and shareholders. Managers are mostly manipulating figures to deceive stakeholders and owners about the underlying firm's performance by using valuations in financial reporting. Moreover, these factors may have an impact on the standard of financial information. These variables are therefore included in this current study.

Model Specification

Multiple regression methods of panel regression models were employed based on previous studies' recommendations. The empirical models in this study are expressed mathematically as follows:

$$Model\ 1: DACCD_{it} = \alpha + \beta_1 AUDFEE_{it} + \beta_2 AUDTEN_{it} + \beta_3 AUDQLT_{it} + \beta_4 AUDRPT_{it} + \beta_5 AUDOPN_{it} + \beta_6 ROA_{it} + \beta_7 ROE_{it} + \beta_8 ROCE_{it} + \beta_9 EVA_{it} + \beta_{10} NIM_{it} + \beta_{11} CTAX_{it} + \mu_{it} \quad (7)$$

$$Model\ 2: DACCK_{it} = \alpha + \beta_1 AUDFEE_{it} + \beta_2 AUDTEN_{it} + \beta_3 AUDQLT_{it} + \beta_4 AUDRPT_{it} + \beta_5 AUDOPN_{it} + \beta_6 ROA_{it} + \beta_7 ROE_{it} + \beta_8 ROCE_{it} + \beta_9 EVA_{it} + \beta_{10} NIM_{it} + \beta_{11} CTAX_{it} + \mu_{it} \quad (8)$$

$$Model\ 3: ABCFO_{it} = \alpha + \beta_1 AUDFEE_{it} + \beta_2 AUDTEN_{it} + \beta_3 AUDQLT_{it} + \beta_4 AUDRPT_{it} + \beta_5 AUDOPN_{it} + \beta_6 ROA_{it} + \beta_7 ROE_{it} + \beta_8 ROCE_{it} + \beta_9 EVA_{it} + \beta_{10} NIM_{it} + \beta_{11} CTAX_{it} + \mu_{it} \quad (9)$$

$$Model\ 4: APRODC_{it} = \alpha + \beta_1 AUDFEE_{it} + \beta_2 AUDTEN_{it} + \beta_3 AUDQLT_{it} + \beta_4 AUDRPT_{it} + \beta_5 AUDOPN_{it} + \beta_6 ROA_{it} + \beta_7 ROE_{it} + \beta_8 ROCE_{it} + \beta_9 EVA_{it} + \beta_{10} NIM_{it} + \beta_{11} CTAX_{it} + \mu_{it} \quad (10)$$

$$Model\ 5: DIEXP_{it} = \alpha + \beta_1 AUDFEE_{it} + \beta_2 AUDTEN_{it} + \beta_3 AUDQLT_{it} + \beta_4 AUDRPT_{it} + \beta_5 AUDOPN_{it} + \beta_6 ROA_{it} + \beta_7 ROE_{it} + \beta_8 ROCE_{it} + \beta_9 EVA_{it} + \beta_{10} NIM_{it} + \beta_{11} CTAX_{it} + \mu_{it} \quad (11)$$

Where, the subscript *i* and *t* represent the firm and time respectively; β and μ_{it} are the coefficients of the explanatory variables and the error term, respectively.

Diagnostic Tests

A series of multivariate diagnostics was also performed to ensure data suitability for further analysis. First, The Jarque-Bera statistical results in Table 3 show that the *p*-value is greater than 0.05, indicating that the data are normally distributed. Second, the heteroscedasticity test also confirmed that heteroscedasticity is not present, and the selected model can be retained. To determine whether or not there is an autocorrelation issue, the Wooldridge test was also conducted. The Wooldridge test indicate an insignificant *p*-value for the models (Table 3). As a result, the research data do not have the heteroscedasticity issue. This suggests that the study's data do not have an autocorrelation issue. Other tests were also carried out to ascertain which model is best for the purpose of study. Lagrange multiplier (LM) test was employed to select between the random effect model and the pooled OLS model. Table 3 displays that the LM test result is statistically significant. Therefore, in this study, selecting random effects is appropriate (Arellano & Bond, 1991). The Hausman specification test was used to select between the fixed model

and the random model. As shown in Table 3, the Hausman test is insignificant for the three models. From the findings of Table 3, the study discovered that the null hypothesis of the test could not be accepted at any level of conventional significance (Chi-square = 107.20, $p = 0.000$ for DCCD; and Chi-square = 485.27, $p = 0.0000$ for the ABCFO model). However, the results in Table 3 demonstrate that the null hypothesis of the test may be accepted at any conventional level of significance for the DCCK, APROD, and ADIEXP models (Chi-square = 15.382, 12.562, and 11.587, respectively). Furthermore, the Hausman's test determined that the fixed asset (FE) model is more appropriate for the DACCD model 1 and ABCFO model 3, while the random effect (RE) model is more appropriate for the DACCK, APROD, and ADIEXP models 2, 4, and 5, respectively.

Table 3
Diagnostics test

	DCCD (Model 1)	DCCK (Model 2)	ABCFO (Model 3)	APROD (Model 4)	ADIEXP (Model 5)
Normality test (Chi-square)	2.517	2.376	5.563	12.87	9.876
(*p*-value)	(0.256)	(0.285)	(0.115)	(0.091)	(0.145)
Heteroscedasticity (Chi-square)	39.411	44.82	24.1712	11.843	3.162
(*p*-value)	0.1351	0.1002	0.3930	0.2544	0.7012
Wooldridge test: Autocorrelation	12.065	18.4227	7.8733	4.9733	6.8373
(*p*-value)	(0.1124)	(0.1063)	(0.2823)	(0.3245)	(0.2362)
Lagrange multiplier test (LM)	20.5642	16.456	10.013	14.013	11.013
(*p*-value)	(0.0274)	(0.0152)	(0.0132)	(0.0122)	(0.0134)
Hausman test (Chi-square)	107.202	15.382	485.27	12.562	11.587
(*p*-value)	(0.000)	(0.2844)	(0.000)	(0.9252)	(0.929)

RESULTS

Descriptive Statistics

Table 4 presents the descriptive statistics for the variables tested in this study. It shows mean values of 0.3043 for AUDFEE and 0.5196 for AUDTENU, with standard deviations of 0.0068 and 0.0058, respectively. Table 4 shows that ROA has mean value of 0.3655 and range between 0 and 15.9; ROE has an average of 32% with a range between –27.7 and 52.2; ROCE and EVA have mean values of 0.563 and 0.325, respectively. Table 4 also indicates that the net interest margin

(NIM) and corporate tax (CTAX) have means of 0.2973 and 0.0651, respectively, with standard deviations of 0.7534 and 0.5501. Table 4 also provides information regarding the dummy variables. The sample shows that 75.21% of audits were conducted by specialised auditors and 24.79% were not. Additionally, 65.31% of the audit reports were modified, with 34.69% remaining unmodified. Moreover, the proportion of firms audited by Big-4 firms is 55.33%, compared to 44.67% for firms audited by non-Big-4 firms, shows slight changes in AUDRPT.

Table 4
Descriptive statistics

Variables	Obs.	Means	Std. deviation	Min	Max
Panel A: Continuous variable					
DCCD	6,226	0.1460	0.16860	–0.9	376.11
DCCK	6,226	0.1780	0.28444	7.27	9.845
ABCFO	6,226	0.1026	0.42539	–0.086	4.327
PRODC	6,226	0.2005	0.36410	0	98.06
DIEXP	6,226	0.1034	0.15081	0	0.871
AUDFEE	6,226	0.3043	0.00681	0.3034	3.305
AUDTENE	6,226	0.5196	0.00083	0.4563	0.519
ROA	6,226	0.3655	0.79281	0.0000	15.939
ROE	6,226	0.3224	0.93961	–27.719	52.216
ROCE	6,226	0.5632	0.648473	0.000	98.086
EVA	6,226	0.3255	0. 86678	–6.882	7.3945
NIM	6,226	0.2973	0.75343	–35.83	178.70
CTAX	6,226	0.0651	0.55018	–0.1240	6.5032
Panel B: Dichotomous variable					
	Frequency of 1		Frequency of 0		
AUDQLT	75.21		24.79		
AUDRPT	55.33		44.67		
AUDOPN	65.31		34.69		

Notes: Variables are defined as follows: Discretionary accrual by Dechow et al. (1995) model (DCCD); discretionary accrual by Kathori et al. (2005) model (DCCK); ABCFO = abnormal operation cash flow; APRODC = abnormal production cost; ADIEXP = abnormal discretionary expenses; ROA = return on asset; ROE = return on equity; ROCE = return of capital employed; EVA = economic value added; NIM = net interest margin; CTAX = corporate tax; AUDFEE = audit fee; AUDTENU = auditor tenure; AUDQLT = auditor industry specialisation; AUDRPT = auditor's reputation; AUDOPN = audit opinion

Table 5 shows the correlation matrix between the test variables. The magnitudes of the correlations are sufficiently low, and the variance inflection factor (VIF) values are well below 10, indicating that multicollinearity is not an issue in the data (Shieh, 2010).

Multivariate Results

Table 6 presents the results of multiple regression analysis performed based on each of the five models. The models were found to be significant ($p = 0.0000$), with R-square values of 0.614, 0.256, 0.697, 0.878, and 0.539, respectively. Across the five models, AUDFEE, AUDTENU, and two control variables (ROE and CTAX) are not significant predictors of EM practices. AUDQLT and AUDOPN were found significant in predicting DACC, ABCFO, APROD, and DIEXP. AUDRPT was significant in determining DACCD, ABCFO, PROD, and DIEXP. For the control variables, ROA and NIM are significant in relation to DACCD only, ROCE is significant in relation to DACCK, PROD, and DIEXP. EVA is significantly related with DACCD, DACCK, and APROD.

Additional Analysis

This study uses the generalised method of moment (GMM) to estimate the model to account for any possible endogeneity issues (Arellano & Bond, 1991). In accordance to the GMM estimation result shown in Table 7, AUDQLT, AUDRPT, and AUDOPN remain substantially negative in the five GMM model settings. Coefficient for AUDFEE and AUDTENU have changed from negative to positive but remained insignificant in the four GMM specification models. In the case of control variables, the coefficient for ROE and EVA have changed from negative to positive but still insignificant, while coefficient for ROA, NIM, and EVA remained significant in the first model. In the three specifications (models 1, 3, and 4), the control variable CTAX changed from a positive to a negative value, although insignificant. The remaining variables in the GMM model are still significant and have the same direction as they exhibited in the panel regression model. The results of the Sargan test (J-statistics) demonstrate the validity of the instruments. The impact of the control variables is comparable to that of the main analysis model-based effects. This suggests that the GMM model results closely align with those of the primary analysis models.

Table 5
Correlation matrix

Variable	1	2	3	4	5	6	7	8	9	10	11	VIF	1/VIF
AUDFEE	1											1.43	0.69998
AUDTENU	0.1318	1										1.02	0.98068
AUDQLT	0.0019	–0.0041	1									1.02	0.97761
AUDRPT	–0.0040	–0.0051	0.0737	1								1.04	0.96160
AUDOPN	–0.0021	–0.0045	0.0195	0.1000	1							1.07	0.92160
ROA	0.0039	0.0035	–0.0171	0.0247	–0.0265	1						1.10	0.90945
ROE	–0.0010	–0.0162	0.0002	0.0069	–0.0079	–0.0110	1					1.03	0.97166
ROCE	–0.0001	0.0020	–0.0130	–0.0022	0.0050	–0.0123	–0.0055	1				1.02	0.98112
EVA	0.0011	0.0020	0.0045	0.0049	0.0045	0.0619	–0.0025	–0.0017	1			1.04	0.96031
NIM	0.0167	0.0029	0.0135	–0.0028	–0.0149	–0.1375	–0.0092	0.0049	–0.0063	1		1.10	0.95241
CTAX	–0.0143	–0.0018	–0.0012	0.0321	–0.0037	0.0066	0.0039	0.0013	–0.0003	0.0025	1	1.01	0.99452

Table 6
Multiple regression

	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	0.665(3.16)***	–0.087(–1.89)*	31.14(0.991)	0.228(–4.65)***	0.269(2.30)**
AUDFEE	–0.205(–1.17)	0.267(1.69)	–0.103(–1.08)	0.0696(0.95)	0.078(-0.29)
AUDTENU	0.241(0.48)	–0.123(–0.19)	0.341(0.12)	–0.245(0.50)	0.045(0.03)
AUDQLT	–0.200(2.48)**	0.175(0.90)	–0.068(–3.82)***	–0.270(–1.99)*	–0.059(2.40)**
AUDRPT	–0.108(2.75)**	–0.119(2.64)**	0.034(0.42)	–0.309(2.30)**	–0.023(1.91)*
AUDOPN	–0.269(3.72)***	0.098(0.50)	–0.043(2.40)**	–262(–1.96)**	–0.084(1.97)**
ROA	0.102(25.5)***	0.376(–0.88)	0.0019(0.89)	0.095(–0.06)	0.077(1.03)

(*Continued on next page*)

Table 6: (*Continued*)

	Model 1	Model 2	Model 3	Model 4	Model 5
ROE	–0.387(-0.67)	–0.608(-0.81)	0.0013(0.42)	–0.007(–1.227)	–0.001(–1.19)
ROCE	0.414(0.89)	0.999(1.66)*	0.0017(0.07)	0.904(17.05)***	0.004(3.30)***
NIM	0133(3.16)***	–3.851(–0.70)	2.541(0.11)	–6.641(–0.16)	3.551(0.29)
EVA	–2.514(8.05)***	6.971(1.76)*	0.018(1.07)	–0.001(3.00)***	–0.006(–2.82)
CTAX	0.292(0.76)	0.829(–0.17)	5.072(0.02)	0.015(0.40)	0.003(–0.31)
F- statistics	47.9(0.000)	21.8(0.0041)	75.3(0.000)	34.7(0.000)	67.5(0.000)
R-square	0.614	0.256	0.697	0.876	0.539
No. of obs.	6,226				
No. of groups	566				

Note: ***, **, * denote 0.1%, 1%, and 5% level of significance; the numbers outside the parentheses are the beta coefficients, and t-statistics numbers are within the parentheses

Table 7
Robustness checks using GMM model

	GMM Model				
	DACCD	DACCK	ABCFO	APROD	ADIEXP
Constant	0.559(4.17)***	0.678(5.89)***	1.414(5.14)***	0.123(–3.75)***	0.110(2.35)**
AUDFEE	0.223(1.51)	0.267(1.69)	0.243(1.45)	0.266(0.95)	0.178(0.32)
AUDTENU	0.241(0.48)	0.123(0.46)	0.141(0.23)	0.047(0.70)	0.045(0.30)
AUDQLT	–0.112(3.51)***	–0.116(2.4)**	–0.077(–3.12)***	–0.223(–1.99)**	–0.062(2.12)**
AUDRPT	–0.104(3.75)***	–0.120(3.77)***	–0.045(2.42)**	–0.033(2.46)**	–0.033(2.41)**

(*Continued on next page*)

Table 7: (*Continued*)

	GMM Model				
	DACCD	DACCK	ABCFO	APROD	ADIEXP
AUDOPN	–0.134(3.61)***	0.118(1.50)	–0.041(2.42)**	–0.258(–1.99)*	–0.066(1.98) *
ROA	0.102(25.5)***	0.276(–0.85)	0.013(0.90)	0.096(–0.71)	0.076(1.21)
ROE	0.289(1.44)	–0.608(–0.81)	0.0013(0.42)	–0.007(–1.227)	–0.001(–1.19)
ROCE	0.414(0.89)	0.999(1.66)*	0.0017(0.07)	0.904(17.05)***	0.004(3.30)***
NIM	0133(3.16)***	–3.851(–0.70)	2.541(0.11)	–1.641(–0.21)	3.551(0.29)
EVA	0.334(9.01)***	6.971(1.76)*	0.018(1.07)	–0.024(3.06)***	–0.005(–2.80)
CTAX	–0.112(0.66)	0.829(–0.17)	–0.052(0.55)	–0.223(0.51)	0.003(–0.65)
Sargan stat.	1.894(0.776)	1.673(0.873)	1.787(0.789)	1.967(0.665)	1.562(0.975)
Wald	101.67***	97.12***	78.11***	91.17***	58.16***

Note: ***, **, * denote 0.1%, 1%, and 5% level of significance; the *t*-statistics are indicated in parentheses

DISCUSSION

This section offers a thorough analysis of the findings related to the study variables, supported by the findings of earlier research and highlighted by pertinent theories. To ensure clear understanding, the discussion, interpretations, and justification of the findings are provided in accordance with the hypotheses developed. The findings of H1, H2, H3, H4, and H5 are discussed and compared with prior studies.

The finding of the first hypothesis, audit industry specialised auditor (AUDQLT), presented a negative and significant sign for all specifications of the regression model, this relationship shows that the AUDQLT reduces the level of EM. This indicates that the outcomes support the hypothesis H1 that was developed. The study's finding is consistent with earlier research, which indicates that specialisation of the audit firms significantly reduces EM (Alzoubi, 2018; Ammer & Pantamee, 2024; Kusumaningtyas et al., 2019; Martinez & Moraes, 2017; Muhtaseb et al., 2024; Mwangi, 2024). The findings of this study found that audit fees are insignificantly and negatively related to EM across all specifications. This suggests that audit fees do not mitigate EM. Thus, the results do not support hypothesis H2, which posits that audit fees significantly reduce the level of EM practices. The result is consistent with the findings of Eriabie and Dabor (2017) and Shehadeh et al. (2024), who noted that higher audit fees may be associated with increase threats to auditor independence, potentially affecting audit reports on EM practices. This shows that auditors may charge higher fees when clients' accounts show element of executive managers' opportunistic behaviour in the manipulation and misuse of shareholder funds.

In models 1, 2, 4, and 5, the audit reputation (AUDRPT) variable, measured as the Big-4, indicated significant negative association, while model 3 reveals a positive but insignificant association with ABCFO. This suggests that listed Malaysian firms audited by Big-4 companies tend to reduce the level of EM. This finding confirmed hypothesis H3, which posits that EM practices are mitigated with audit reputation. The results are generally consistent with those of earlier research (Kyriakou et al., 2024; Reguera-Alvarado et al., 2019). The finding is also consistent with the findings of Can (2019), Lopes (2018), Siala and Jarboui (2019), and Zalata et al. (2020). Prior studies have found that Big-4 audit firms discover less EM in companies they audit compared to those audited by non-Big-4 firms. This suggests that Big-4 audit firms are more effective at mitigating EM than their non-Big-4 audit firms. However, the extensive list of business failures seems to support this result, indicating that while management frequently engages in EM, large audit firms have been successful in discovering and preventing deceptive accounting practices. The findings in Table 6 show that the audit tenure (AUDTENU) is

insignificantly negative across all five specifications of the regression model – specifications (1), (2), (3), (4), and (5). The negative and insignificant relationship between the AUDTENU and the EM variables evidence that auditor's tenure does not contribute to reducing the level of EM of the listed firms in Malaysia. Thus, hypothesis H4 not supported. The findings of this study contrast with previous research that long auditor tenure results in ineffective audits, and hence reducing the level of EM; and long audit tenure may result in less effective detection and prevention of managerial opportunistic behaviour (Almomani, 2015; Hadriche, 2015; Martinez & Moraes, 2017; Miko & Kamardin, 2015; Wicaksono & Indarti, 2024).

The audit opinion (AUDOPN) is also shown in Table 6 to be negative and statistically significant in four specifications. In accordance with the prior research, the AUDOPN assumes the predicted assumption in this scenario that the coefficient is negative. This demonstrates that when accounting estimates are not differentiated between purposeful and unintentional errors, opinion reduces these inaccuracies. The findings in Table 6 show that AUDOPN contributes to restricting the EM, as determined by the DACCK, ABCFO, PROD, and DIEXP. The findings of this study are consistent with previous research which documented that unmodified audit opinions reduced EM (Alhadab, 2018; Andriana et al., 2024; Li & Liu, 2024; Moazedi & Khansalar, 2016; Sai et al., 2024). This indicates that auditors do inform stakeholders about potential manipulations that could affect firms. The findings also show that the control variables ROA, ROE, and NIM do not assist in explaining EM. Economic value added (EVA) is negatively and significantly related with EM in models 1, 2, 4 and 5, but shows insignificant association with ABCFO in model 3. Finally, corporate tax (CTAX) as a control variable does not assist in explaining EM practices, as it shows an insignificant association in the specification.

CONCLUSION

This study investigated the relationship between EAQ (audit fees, audit tenure, audit quality, audit reputation, and audit opinion) and five measures of EM. The study's sample was made up of companies that were listed on Bursa Malaysia. Using the established sample criteria, 566 companies were included in the sample for the 12-year period from 2011 to 2022. The study found that the size of audit firms, the quality of their work, and the auditors' opinions tend to reduce the degree of managerial opportunistic behaviour. However, the findings indicated that audit fees and audit tenure are not effective in preventing management opportunistic behaviour. The results of the study thus states that audit fees and tenure do not

contribute to suppressing EM in a company. However, audit firm size, quality, and unmodified audit opinions results in lower EM practices. This may provide evidence in support of the claim that auditors successfully curb managerial opportunistic behaviour. Thus, the research supports agency theory predictions.

Implications

The findings appear to suggest that audit firms' size, specialised quality audit, and auditor's opinion do provide effective monitoring of EM in Malaysian listed firms. This study also suggests that audit fee and tenure should be jointly monitored so as mitigate EM. The findings of this study have implications for both stakeholders and policymakers. First, the study identifies a significant external mechanism (modified opinions, audit reputation, audit quality) that mitigates EM in Malaysian public companies. Consequently, listed firms need to choose between Big-4 auditors and specialised audit firms to reduce EM. Second, audit modifications show varying levels of tedious difficulties within companies, resulting in diverse impacts on the sustainability of earnings. Therefore, regulators and policymakers should emphasise the importance of using auditors' reports. The likelihood of proper audit opinions and the awareness of reputation risk are increased in individual auditors when authorities enforce their rules more strictly.

Furthermore, this current research has implications for companies striving to encourage the attention of shareholders and attract prospective investment. Practically, the study offers an effective framework for EAQ and EM to mitigate managers' opportunistic behaviour. To enhance audit quality and curb managers' opportunistic behaviour, stakeholders should take more proactive measures to ensure that audit firms perform more effectively and that regulatory bodies monitor adequately. Furthermore, this study suggests improving the auditor's independence and competency, as well as resolving the problems with the Malaysian audit mark. Additionally, the study's findings provide valuable insights for those involved with Malaysian publicly listed companies on the value of modified opinions, the number of audit firms, audit quality, and their impact on EM mitigation.

Limitation and Suggestion for Further Studies

The sample used in this study is limited to the listed firms in the main market of Bursa Malaysia. The study focuses on five proxies of EAQ. The dependent variable is represented by DACC estimated by Jones (1991), modified by Dechow et al. (1995), Kothari et al. (2005), and Roychowdhury (2006) model. These limitations suggest new directions for future corporate governance and EAQ study. Future research can examine into how other EAQs are being utilised by Malaysian non-

listed companies. Given its essential contribution to the Malaysian economy, non-listed firms should also be evaluated.

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