Ownership Structure and Earnings Quality Pre- and Post-IFRS: Does Investor Protection Matter?

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ABSTRACT

Manuscript type: Research paper
Research aims: This study examines whether managerial and institutional ownership is associated with higher earnings quality (EQ) after the implementation of International Financial Reporting Standards (IFRS), in comparison to the pre-IFRS period. It also examines the moderating effect of investor protection (INPT) on the link between ownership structure and EQ.
Design/Methodology/Approach: This study uses a dynamic panel data modelling on a sample of 2090 firm-year observations, from 2007–2016, in Malaysia. This study applies the generalized method of moments (GMM) to deal with the econometric problems.
Research findings: The results indicate that managerial ownership is essential for improving EQ before and after IFRS adoption. No

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significant improvement is noted for institutional shareholders. The results provide evidence showing that managerial ownership is more efficient in monitoring earnings management in a healthy INPT environment.
Theoretical contribution/Originality: The findings highlight the complementary influence of firm- and country-level governance mechanisms in improving firm's EQ. The results suggest that the agency theory and the institutional theory could be used together in emerging economies. This is because even good CG cannot improve the monitoring performance in countries with weak institutional settings.
Practitioner/Policy implication: The results highlight the significance of accounting standards and law enforcement for enhancing the monitoring role of ownership structure in improving EQ.
Research limitation/Implications: This study investigates the impact of ownership structure on EQ. Further research should seek to understand other CG variables used in other countries with other EQ proxies such as real earnings management.

Keywords: Earnings Quality, GMM, IFRS, Investor Protection, Malaysia, Ownership
JEL Classification: G30, G31

1. Introduction

Earnings Quality (EQ) is a critical issue that has emerged after a series of global financial crises and accounting scandals in big companies. According to the literature, several types of contractual agreements and financial decisions depend on the quality of corporate earnings. These include executive compensation contracts, future growth possibilities, firms' operational performance, and other business and political decisions (Kamarudin & Wan Ismail, 2014). Additionally, high-quality profits ensure investors' confidence, market efficiency and economic growth (Atieh & Hussain, 2012).

Nevertheless, earnings might not be an informative source if it is a result of earnings management. Corporate managers may manipulate earnings at shareholders' expense for personal benefits, such as bonuses and self-reputation (Amran & Ahmad, 2013). Such manipulations lead to an unclear view of the company's financial performance and economic decisions, thereby affecting the EQ. Kamarudin and Wan Ismail (2014) defined EQ as "the information with a low occurrence of earnings

management manipulations" (p. 227).[1] This was further elaborated by Haga, Ittonen, Tronnes and Wong (2018), that when managers manage earnings for an opportunistic purpose, accounting profits are no longer perceived as a measure of the firm's financial performance. Since such earnings management affect the reputation of firms, there is a need to enhance the monitoring mechanisms and the accounting standards.

Implementing the IFRS has a possibility of improving comparability, transparency and the quality of financial reporting (García, Alejandro, Sáenz, & Sánchez, 2017). It could also lead to a lower cost in financing (Persakis & Iatridis, 2017) and the smooth flow of foreign capital (Joshi, Yapa, & Kraal, 2016). The IFRS adoption may also improve firm-level monitoring mechanisms in different environments (Nurul Houqe, van Zijl, Dunstan, & Karim, 2012). Therefore, adopting such standards is seen as a treatment for opportunistic earning practices; it encourages interactions between emerging nations with developed markets.[2]

The international accounting standards was introduced as an incentive for developing a sound corporate governance (CG). This mechanism helps to curtail the opportunistic behaviours of managers at the expense of stakeholders. The weakness of the CG is, however, among the leading causes of severe earnings manipulations, hence crises and collapses of large firms worldwide (Cohen, Dey, & Lys, 2008). Such downfalls of organisations have caused investors and regulators to call for better CG mechanisms, which can be made up of internal and external sources, to protect shareholders' interest (Mollah, Al Farooque, & Karim, 2012). Internal mechanisms (i.e. ownership) (Jensen & Meckling, 1976) and external governance mechanisms (i.e. institutional environment) (Hasan, Kobeissi, & Song, 2014) can help to monitor and mitigate the opportunistic behaviours of corporate managers, specific agency problem, as well as improve firm's EQ. Based on this, considerable efforts have been undertaken worldwide to develop CG by initiating several amendments and improvements, including the Malaysian Code on Corporate Governance (MCCG)[3] and the US Sarbanes–Oxley Act.

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[1] There are several definitions of EQ, but we cited this one for our study purpose.
[2] Several countries have formally adopted IFRS worldwide. For a full list of IFRS adoption by country, please visit http://www.iasplus.com/country/useias.htm
[3] Malaysian ruling has issued several versions since the 1997/1998 Asian financial crisis to improve governance monitoring system (i.e. MCCG, 2000, 2007, 2012 and 2016).

The ownership structure is one of such mechanisms of the CG that was initiated to enhance firm's EQ and to monitor corporate managers, hence protect the business (Alzoubi, 2016). The purpose of managing corporate profits may differ between emerging nations and developed countries. In the case of Malaysia, big listed firms have concentrated ownerships. These ownership-concentrated companies permit the management to isolate the minority shareholders. In developed countries, however, corporate managers contribute to the manipulation of earnings (Doukakis, 2014). Therefore, country-level INPT laws are more significant in the case of high ownership concentrations because it may reduce firm's agency problems or the impact of expropriation (Hasan et al., 2014).

Prior literature has generally ignored the role of the institutional environment such as the INPT and the legal system, both of which can improve the effectiveness of the CG mechanisms (Filatotchev & Jackson, 2013). A few studies (e.g. Dayanandan, Donker, Ivanof, & Karahan, 2016; Nurul Houqe et al., 2012) have provided evidence highlighting the significant moderating role of INPT in improving EQ. This was contradictory to Zhong, Chourou and Ni (2017) who mentioned that the direct and indirect impact of INPT on EQ is still unclear. Based on our review, it appears that few studies have concentrated on investigating the moderating effect of INPT on the link between ownership structure and EQ, based on the pre- and post-IFRS adoption. Literature dealing with CG in the Malaysian context also seemed to have overlooked this aspect of firm- and country-level relationship.

Malaysia appears to be a suitable country to explore how this relationship operates. Malaysia has thus far, developed quick reforms for upgrading the CG pillars as a means to improve financial reporting. In particular, it is unclear if this association was motivated by the mandatory adoption of the IFRS among the listed firms in 2012 (Chan, 2012). Comparatively, as one of the fastest developing economies, Malaysia had taken steps to enhance INPT requirements (Randhawa, 2011). It has also been visionary in its future with the ambition of moving from being a developing country to a developed nation. Nonetheless, studies show that there is evidence of earnings management practices among Malaysian firms (Fan & Wong, 2002; Wan-Hussin, 2009). Hence, it seeks to enhance some developing country-related features on market efficiency, law enforcement and information quality (Young, Peng, Ahlstrom, Bruton, & Jiang, 2008).

This study aims to examine the moderating effect of both the IFRS adoption and the INPT on the association between ownership structure

and EQ. Specifically, the objectives of this study are to: (i) investigate the relationship between ownership structure and EQ, (ii) examine whether ownership attributes are more efficient in monitoring accrual earning manipulations post-IFRS in comparison to the pre-period, and (iii) investigate the moderating effect of INPT on the relationship between ownership structure and EQ. The outcome derived from this study is vital for academicians and regulators so that issues related to the impact of IFRS adoption and INPT on EQ can be further understood.

The results of this study showed that managerial ownership can significantly decrease accrual earnings management. Therefore, managerial ownership is vital for improving firm's profit quality at the pre- and post-IFRS period. The results also demonstrated that managerial ownership was more efficient in monitoring earnings management in active INPT environment. No significant improvements were found for the institutional mechanism, however.

This study adds to the knowledge and practice in several ways. First, this paper fills the EQ literature gap by investigating the interactive impact of INPT on the relationship of managerial ownership and institutional ownership with EQ, pre- and post IFRS adoption. Therefore, it differs from prior studies which examined institutional ownership–EQ (Zhong et al., 2017) and ownership concentration–performance relationships (Altaf & Shah 2018; Filatotchev & Jackson 2013), moderated by the INPT. Second, most previous literature tended to examine the ownership–EQ relationship using static models, whereas the current study re-examines the link using a dynamic perspective. Third, this study provides essential recommendations to policymakers, investors and CG structure in Malaysian firms, thereby contributing to the improvement of future policies.

The remainder of this paper is organised as follows: Section 2 outlines the related literature and develops the research hypotheses. Section 3 describes the data collection and methodology. Section 4 presents the results and robustness tests and Section 5 concludes the paper.

2. Literature Review and Hypotheses

2.1 Managerial Ownership, IFRS Adoption and EQ

The agency theory suggests that directors holding voting shares can increase their monitoring efficiency whilst reducing agency problems. Past studies (Jensen & Meckling, 1976; Samaha & Khlif, 2016) had men-

tioned that managerial investors tend to improve financial activities for several reasons. First, they are motivated to raise corporate earnings so as to obtain benefits, as hypothesised by the "convergence of interests". Second, managerial investors have more ability to monitor firm performance, and also help to align their interests with other shareholders (Ali, Salleh, & Hassan, 2008; Jensen & Meckling, 1976). Third, auditors can significantly reduce the risk levels of earnings management when there is a high percentage of managerial ownership (Alzoubi, 2016). It was also noted by Tran (2014) that managerial ownership was negatively associated with the cost of financing, but it enhanced corporate investments (Mykhayliv & Zauner, 2017), and it encouraged companies to have long-term growth (Nakabayashi, 2019). It appears that when directors were also shareholders, markets tend to react more favourably (Qian, Sun, & Yu, 2018).

Further to the above, executive ownership is also noted to be a significant feature in reducing discretionary accruals (DAC) and for improving EQ (Di Meo, Lara, & Surroca, 2017). This was noted in Alzoubi (2016) who used ordinary least squares (OLS), and generalised least squares (GLS) to examine the relationship between managerial ownership and managers' discretionary practices. A total of 62 firms in Jordan recruited in 2013 were examined and results revealed that managerial investors significantly improved financial reporting quality.

In contrast, Shayan-Nia, Sinnadurai, Mohd-Sanusi and Hermawan (2017) detected some discrepancies. They argued that administrative investors led to higher opportunistic behaviours, thereby lowering financial reporting quality (entrenchment effect). Several drawbacks of managerial ownership concentration were henceforth recorded. First, it was observed that as administrative investors were closely associated with the financial reporting process, they were more likely to hide some relevant information deliberately (Shayan-Nia et al., 2017). Second, administrative investors were more inclined to use their power to review issues of significance depending on their interests (Sepasi, Kazempour, & Mansourlakoraj, 2016). Finally, Francis, Schipper and Vincent (2005) proposed that managerial owners can also exert their authority on accounting policies, consistent with their interests. Based on this view, prior studies (Gonzalez & Garcia-Meca, 2014) had also stated that higher managerial ownership negatively affected the monitoring capability, thereby decreasing the EQ and firm value.

In this regard, the IFRS may be adopted. Prior literature had stated that IFRS adoption can do several things: 1) mitigate earnings

management practices (Bilal, Chen, & Komal, 2018), 2) protect minority shareholders (Hong, 2013), and 3) increase firm financial performance (Kouaib & Jarboui, 2017). The IFRS is an important mechanism that helps firms to improve the monitoring ability of their audit committees (Bilal et al., 2018; Bryce, Ali, & Mather, 2015). Chen and Rezaee (2012) found that board of directors who were active helped their companies to align with the IFRS and, thereby providing high-quality earnings. Doukakis (2014) also noted that the IFRS helped investors and leaders to evaluate and analyse their firms' corporate profits, accounting rules and financial reporting. According to Christensen, Lee, Walker and Zeng (2015), corporate managers who have incentives to adopt the IFRS tend to apply strict accounting policies. Given its significance, the IFRS is thus expected to improve the monitoring effectiveness of managerial ownership in firms.

Overall, there is a substantial body of literature which had examined the managerial–EQ relationship in static modelling. However, there is little information from past studies highlighting the same relationship from a dynamic perspective. Addressing this gap, the current study thus aims to look at the managerial ownership–EQ association from two perspectives: the EQ pre- and post-IFRS adoption stages. It is argued that corporate management has the power to affect earnings management. Since corporate management is endowed with monitoring skills and it is also closely related to the financial reporting process, it can easily detect the opportunistic behaviours of the managers. Based on the associated theories (i.e. agency theory) and the findings of prior studies, the following hypotheses were formulated:

H_1: There is a positive relationship between managerial ownership and EQ.

H_2: Managerial ownership is more proficient in increasing EQ post-IFRS adoption.

2.2 Institutional Ownership, IFRS Adoption, and EQ

The active monitoring hypothesis suggests that institutional ownership has a better constraining role in monitoring earnings management activities. Firms often have institutional stakeholders from many categories such as: insurance companies, banks, pension funds, investment and financial institutions. Several reasons support the significance of this mechanism. First, holding large voting shares makes these institutions efficient financial intermediaries and information collectors (Hadani,

Goranova, & Khan, 2011). Second, these institutions seek information about companies with sound CG and less entrenched management before making investments (Ruiz-Mallorqui & Santana-Martin, 2009). Third, they apply fair accounting policies and controlling devices to monitor any opportunistic behaviours among the management so as protect their interests (Zhong et al., 2017). Fourth, institutional owners also tend to make more observations of corporate manipulations when there are unconsidered agency problems causing high agency costs, in comparison to minority shareholders (Hadani et al., 2011).

Previous literature (Nagata & Nguyen, 2017) has suggested that institutional investors tend to encourage firms to adopt better disclosures and to increase corporate monitoring systems (Zhong et al., 2017). They also help to discourage accruals manipulations (Zhong et al., 2017). Prior studies (Hessayri & Saihi 2018; Kouaib & Jarboui 2017) had observed that local and foreign institutional stakeholders profoundly invest in companies that adopt the IFRS. The considerably low information costs under international standards also motivated foreign investors to increase investments (Hamberg, Mavruk, & Sjögren, 2013). The accounting rules laid by the IFRS offer high-quality financial reporting with high levels of comparability and transparency (García et al., 2017). In this way, substantial institutional owners can be the catalyst in minimising opportunistic earnings practices upon the adoption of the IFRS.

However, both the investment horizon and private benefits hypotheses suggest that institutional owners can harm firm financial performance (Muniandy, Tanewski, & Johl, 2016). Literature proposed several reasons for this view. First, institutional owners prefer to vote "with their feet", rather than to control or substitute inefficient managers if they were not satisfied with the corporate results (Lemma, Negash, Mlilo, & Lulseged, 2018). Second, institutional investors focus on short-term effects, hence, they may conspire with managers thereby ignoring the need to monitor the managers (Muniandy et al., 2016). This can lead to a laidback attitude towards improving the CG whilst also decreasing profits at the same time (Liu, Saidi, & Bazaz, 2014; Shayan-Nia et al., 2017). Third, a hidden takeover purpose of institutional ownership could lead to an advantage but at the cost of the minority shareholders (Young et al., 2008). It was also noted by Al-Fayoumi, Abuzayed and Alexander (2010) that institutional owners could force corporate managers to disclose higher profits by misusing the accounting rules. These strategies, therefore, could cause managers to increase earnings management practices and weaken the financial performance simultaneously.

Based on the above, it can be said that even though the above studies seemed to highlight the monitoring abilities of the institutional investors over corporate managers, these early documentations had mostly used static regression methods. In contrast, there has been little literature which investigated institutional ownership from a dynamic perspective. Moreover, previous research done in the Malaysian context had also disregarded the significance of the IFRS, i.e. the MFRS 10, in enhancing the monitoring role of institutional ownership. The current study thus aims to contribute to existing literature by studying the documented association of the pre- and post-IFRS adoption by using dynamic modelling. Based on the agency theory, the active monitoring theory and prior studies that had been discussed thus far, the following hypotheses were thus formulated:

H_3: There is a positive relationship between institutional ownership and EQ.
H_4: Institutional ownership is more significant in improving EQ post-IFRS period.

2.3 The Role of Investor Protection

Following Shleifer and Vishny (1997) and La Porta, Lopez-de-Silanes, Shleifer and Vishny (1998), a number of empirical studies had also investigated the impact of institutional environment on financial reporting quality. Ball, Kothari and Robin (2000) suggested that corporate earnings were more timely in common law countries than in civil law nations. Leuz, Nanda and Wysocki (2003) examined the level of earnings management across countries. They found a reverse relationship between the level of INPT and earnings management. Nurul Houqe et al. (2012) examined the impact of IFRS adoption and INPT on the quality of earnings in 46 countries. They found results which were similar to Dayanandan et al. (2016). Both had reported that the EQ increased in countries which applied the mandatory IFRS and strict INPT system.

More precisely, Altaf and Shah (2018) and Bao and Lewellyn (2017) tested the moderating effect of INPT on the relationship between concentrated ownership and EQ. They revealed that the degree of INPT was positively related to the strength of the documented association. Zhong et al. (2017) noted that the relationship between institutional ownership and EQ was economically significant in countries with an intense regime of the INPT. The relationship also decreased the cost of financing among

companies (Gupta, Krishnamurti, & Tourani-Rad, 2018). Others like Hasan et al. (2014) and Wang and Shailer (2015) disclosed that countries tended to substitute a weak CG system and law enforcement by a reliable system of INPT that in turn improved firm performance.

Evidently, countries with high concentrated ownership also tend to expropriate minority shareholders in comparison to countries with dispersed ownership (Mehrani, Moradi, & Eskandar, 2016). In this regard, the country-level factor, i.e. the INPT, becomes crucial when ownership is intensely concentrated. This occurs due to the INPT role in reducing agency costs or the entrenchment effect (Hasan et al., 2014) and in improving monitoring mechanisms (Ben Naceur, Ghazouani, & Omran, 2007). Foreign investors tend to avoid countries with corruption, weak INPT, and a lack of law enforcement (Fan, Wei, & Xu, 2011). In such states, managers may apply the accounting rules of their personal choice for personal benefits rather than for economic decisions (Sannchez-Ballesta & Garcia-Meca, 2007). As a result, this could lead to investing and financing difficulties (Fan et al. 2011; Shleifer & Vishny, 1997).

Overall, it can be said that the level of EQ was not exclusively driven by firm-level mechanisms, but was also influenced by the institutional environment such as the level of INPT. This study argues that the strength of the INPT can affect the association between ownership structure and EQ. It can affect both the incentive and the ability of the managerial and institutional ownership in monitoring corporate managers. Prior literature (Hartzell & Starks, 2003) had argued that monitoring by outside investors (i.e. institutional owners) was costly due to the potential liquidity expenses (Noe, 2002). It also led to the free rider problem arising from such monitoring expenditures (Grossman & Hart, 1980). Further, the costs of collecting information about firms and managers was also higher in countries with weak INPT as compared to companies located in countries with an active INPT environment (Zhong et al., 2017).

Countries with weak INPT tend to have corporate managers who can manipulate earnings. Without severe lawful penalties, these countries also see a reduction of owners who play a role in monitoring and disciplining tasks. These arguments suggest that there is a strong positive association between ownership attributes and EQ, particularly in countries with a strong INPT. Prior studies had focused on the moderating effect of INPT on the link between ownership concentration and firm performance (i.e. Altaf & Shah 2018), and institutional ownership and EQ (i.e. Zhong et al., 2017). In comparison, the current

study aims to expand on current literature by examining the moderating effect of INPT on the relationship between managerial ownership, institutional ownership and firm's EQ in the context of Malaysia. Given the above discussions, our testable hypotheses were formulated as:

H_5: The relationship between managerial ownership and EQ is significantly moderated by strong INPT.
H_6: The relationship between institutional ownership and EQ is significantly moderated by active INPT environment.

3. Data and Methodology

3.1 Sample Selection

The samples for this study comprised companies that were listed on Bursa Malaysia with available information on ownership structure and financial variables, for the period of 2007 to 2016.[4] The samples used comprised companies reporting under the national accounting standards, before the mandatory use of the IFRS, and the period after using the IFRS. Financial firms were excluded due to their unique features and different regularity regimes, in comparison to non-financial companies. This study also excluded firms with incomplete CG data and observations as well as companies that changed the financial year end during the data collection period. Further exclusions include companies with a fiscal year end other than 31st December.[5] Based on the above criteria, the final sample of the Malaysian companies comprised a total of 209 listed firms (2090 firm-year observations) involving six industries: consumer products, industrial products, trading and services, properties, energy and technology.

3.2 Variables of the Study

3.2.1 Dependent Variable

This study used EQ as a dependent variable. It was measured by accrual-based earnings management, which is consistent with previous literature (Chi, Liao, & Chen, 2016).

[4] The total number of companies in Bursa Malaysia during the sampled time is 806 listed firms.
[5] We have chosen firms with similar fiscal year-end, i.e., 31 December, to ensure the data gathered is consistent across the year.

3.2.1.1 Accrual-based Earnings Management

This study uses the model proposed by Kothari, Leone and Wasley (2005) to estimate discretionary accruals (DAC). There are several reasons for selecting this model. First, when compared to the Jones' (1991) model, the Kothari approach includes an intercept which helps to maintain all the three individual explanatory variables. Second, Kothari et al. (2005) had argued that the approach used by Dechow, Sloan and Sweeney (1995) generated massive estimated earnings manipulations whenever a firm achieved growth in the stated period. Third, the rate of return on assets (ROA) was included in the Kothari model to avoid biased estimators inherited in Jones and modified Jones estimates and to control for variations in accruals resulting from changes in business terms (Kothari et al., 2005).

Additionally, the absolute value of the DAC was applied in the current study.[6] According to Doukakis (2014), the absolute value was the best measure of accrual reversals due to the absence of a specific directional prediction. Three steps were used to compute this value:

First, the following model was estimated:

$$TACC_{it}/TS_{it-1} = \alpha_0 + \beta_1[1/TS_{it-1}] + \beta_2[(\Delta S_{it} - \Delta REC_{it})/TS_{it-1}] + \beta_3[PPE_{it}/TS_{it-1}] + \beta_4 ROA_{it} + \mu_{it} \quad (1)$$

Second, the coefficients calculated from Eq. (1) were applied to determine the non-discretionary accruals (NDAC). Third, abnormal accruals (DAC) were defined as:

$$DAC_{it} = TACC_{it}/TS_{it-1} - NDAC_{it} \quad (2)$$

where $TACC_{it}$: total accruals; TS_{it-1}: lagged total assets; ΔS: change in sales; ΔREC: change in net receivables; PPE: property, plant, and equipment; and μ_{it}: error term.

3.2.2 Firm-level Independent Variables

The independent variables of interest in this study comprised: managerial ownership and institutional ownership. They controlled most of the shares in Bursa Malaysia and so influenced its economy. The measures taken for such variables are illustrated in the appendix.

[6] The absolute value was chosen because it can quickly capture the accrual manipulations following the event (Cohen et al., 2008).

3.2.3 Country-level Moderating Variable

The INPT is proxied by the INPT index that was established by the Doing Business Project (DBP),[7] which ranked countries based on the strength of disclosures so as to protect minority shareholders. The INPT index measures the transparency of the transactions, the liability of the corporate directors for self-dealing and the ability of the shareholders in suing administrators for misbehaviours. Following Altaf and Shah (2018), the INPT is used as a term to refer to the average of the following indices – the extent of disclosure, the degree of director liability, shareholder suits and strength of minority INPT. These proxies have a score from zero to ten and a greater measure indicates a higher protection for investors.

3.2.4 Control Variables

To reduce the potential bias that may arise because of omitted variables, other firm characteristics were controlled by including firm size, growth, financial leverage, profitability and Big4. Previous studies (Alzoubi, 2016; Doukakis, 2014) had implied that EQ levels were influenced by such factors.

3.3 Model Specification

The following regression model was employed to explore the moderating effect of the INPT on the relationship between ownership attributes, and EQ indicators pre- and post-IFRS adoption.

$$\begin{aligned} DAC_{it} = {} & \beta_0 + \beta_1 DAC_{it-1} + \beta_2 MANOW_{it} + \beta_3 INSTOW_{it} + \\ & \beta_4 (MANOW * IFRS)_{it} + \beta_5 (INSTOW * IFRS)_{it} + \\ & \beta_6 (MANOW * INPT)_{it} + \beta_7 (INSTOW * INPT)_{it} + \\ & \beta_8 LnSIZE_{it} + \beta_9 GRWTH_{it} + \beta_{10} LEVE_{it} + \beta_{11} ROA_{it} + \\ & \beta_{12} BIG4_{it} + \lambda_i + \varepsilon_{it} \end{aligned} \quad (3)$$

where subscripts *i* and *t* denote firm and year, MANOW: managerial ownership, INSTOW: institutional ownership, IFRS: a dummy variable, INPT: investor protection, LnSIZE: firm size, GRWTH: firm growth rate,

[7] We obtained these reports from the website of Doing Business Project, World Bank. Reports for years (2007-2016).

LEVE: firm leverage, ROA: Profitability, BIG4: audit quality, λ_i: firm-specific effect, ε_{it}: the composite error term.

3.4 Dynamic Panel GMM

The GMM method considers the effect of past financial performance on the present events (Wintoki, Linck, & Netter, 2012). Arellano and Bover (1995) and Blundell and Bond (1998) developed the system GMM (SGMM) to increase the effectiveness of first difference GMM (DGMM). SGMM contains two equations, namely level and first difference, which apply instrumentation to reduce the correlation between the explanatory variables and the error terms. More importantly, the GMM approach includes necessary improvements (i.e. instrumentation) in dealing with several econometric problems, hence it improved the efficiency of parameter estimates dramatically. This encompassed heteroscedasticity, autocorrelation and endogeneity problems (Wintoki et al., 2012). Based on this, the current study uses three diagnostic tests, namely the Hansen, AR(2), and the difference-in-Hansen (DIH) tests to determine the validity and reliability of the study.

First, the Hansen test of over-identifying restrictions was applied to assess the overall validity of the instruments, which should not be correlated with the disturbance. Failure to reject the null hypothesis would imply that the instruments were valid and the model was correctly specified. Second, the AR(2) was used to examine the presence of the second-order serial correlation. The null hypothesis of this test should be supported. Third, the DIH was used to investigate the validity of the extra moment's conditions on the SGMM. Failure to reject the null hypothesis would support the predicted model.

4. Results and Discussion

4.1 Descriptive Statistics

Table 1 shows the summary of the descriptive statistics and the IFRS adoption periods which have been partitioned for all the Malaysian samples. The summary includes all the variables involved in the regression models. For the ten-year period, the mean value of the DAC was noted to be 6.5% while the minimum (maximum) value was observed as 0.000 (55.3) (Ferentinou & Anagnostopoulou, 2016). The maximum amount refers to the existence of the earnings management

Table 1: Descriptive Statistics

Variables	2007-2016				Pre-IFRS (2007-2011)		Post-IFRS (2012-2016)		Mean Diff. Paired t-test
	Mean	S.D	Min.	Max.	Mean	S.D	Mean	S.D	
Continuous Variables									
Discretionary accruals (DAC) (%)	0.065	0.065	0.000	0.553	0.069	0.068	0.061	0.062	-0.008 (-3.267)***
Managerial ownership (MANOW)	0.110	0.151	0	0.925	0.114	0.156	0.106	0.146	-0.008 (-1.815)*
Institutional ownership (INSTOW)	0.576	0.231	0	0.983	0.574	0.237	0.579	0.225	0.005 (0.764)
Firm size (LnSIZE)	5.026	0.624	1.114	8.699	4.984	0.606	5.069	0.638	0.085 (5.616)***
Firm growth (GRWTH)	0.061	0.257	-0.689	1.7	0.114	0.221	0.06	0.20	-0.094 (-11.90)***
Firm leverage (LEVE)	0.377	0.185	0.007	0.913	0.386	0.187	0.368	0.182	-0.019 (-3.21)***
Profitability (ROA)	0.07	0.11	-0.642	0.944	0.078	0.104	0.063	0.115	-0.014 (-3.345)***
Dichotomous Variables									
BIG4		49.20%				51.85%		46.40%	-0.054 (-3.836)***

in Malaysian companies. The sub-period analysis shows that the pre-IFRS mean of DAC (0.069) was higher than the post-IFRS period (0.061). This showed that there was a higher EQ after the IFRS period (Doukakis, 2014). Therefore, the statistics suggest that the IFRS has a significant effect on the accrual-based earnings management.

As for the independent variables, the summary showed that managerial ownership ranged from 0.000 to 92.5%, with a mean value of 11% across the ten-year period. This proportion is noted to be higher than the 6% mean which was reported by Shayan-Nia et al. (2017). Based on the paired t-test, the post-IFRS mean was observed to be significantly lower, with an average of 10.6% in comparison to the pre-IFRS period (11.4%). The statistics also showed that institutional ownership was highest among the Malaysian companies. It ranged from zero to 98% with a mean of 57.6%. This average remained the same during the sub-periods. It was, however, higher than Shayan-Nia et al. (2017) who reported a mean of only 32%. This is most probably due to the way Shayan-Nia et al. (2017) combined financially distressed firms.

4.2 Correlation Matrix

Table 2 reports the pair-wise Pearson correlation parameters among the variables, along with the t-statistic values. The table also reveals no multicollinearity among the independent variables (VIF). The table also shows that the correlation estimates between MANOW, IFRS and DAC were significant. This means that such variables were related to the earnings management levels.

4.3 Static versus Dynamic Models

In the dynamic models, it was observed that the economic intuition which corresponded to the algebra was "history matters". This means that the dependent variable (Y_{it}) was influenced not only by the current value of the independent variable (X_{it}), but also by the lagged value of the dependent variable (Y_{it-1}). Consequently, the GMM as a dynamic model considered the effect of past earnings management on present events.

Table 3 provides the empirical evidence outlining the appropriate regression between static and dynamic methods. The static method comprised several models, namely pooled OLS (POLS), fixed effect (FE), and random effect (RE). Likewise, the dynamic approach was also made

Table 2: Pairwise Pearson Correlation Parameters

	VIF	DAC	MANOW	INSTOW	IFRS	SIZE	GRWTH	LEVE	ROA	BIG4
DAC_{it}	–	1								
$MANOW_{it}$	3.25	-0.05*	1							
$INSTOW_{it}$	1.63	0.02	-0.6*	1						
IFRS	1.02	-0.06*	-0.02	0.001	1					
$SIZE_{it}$	1.33	-0.01	-0.32*	0.49*	0.06*	1				
$GRWTH_{it}$	1.00	0.13*	-0.02	0.05*	-0.25*	0.10*	1			
$LEVE_{it}$	1.74	0.13*	-0.06*	0.06*	-0.07*	0.24*	0.09*	1		
ROA_{it}	1.69	-0.02	-0.09*	0.16*	-0.06*	0.13*	0.22*	-0.06*	1	
BIG4	1.22	-0.02	-0.17*	0.34*	-0.05*	0.34*	0.02	0.03	0.12*	1

Note: *Denotes significance at 5 per cent level.

Table 3: Static versus Dynamic Panel-Data Estimations, Dependent Variable: DAC

	(Model 1) POLS	(Model 2) FE	(Model 3) SGMM
DAC_{t-1}	0.032 (1.67)*	-0.112 (-5.07)***	-0.003 (-3.8)***
$MANOW_{it}$	0.001 (0.01)	-0.13 (-0.95)	-0.292 (-7.1)***
$INSTOW_{it}$	0.099 (2.82)***	0.232 (2.67)***	0.369 (22.6)***
$IFRS_t$	0.004 (0.31)	0.124 (0.83)	0.003 (1.76)*
INPT	0.000 (0.01)	-0.005 (-0.33)	-0.002 (-1.02)
$SIZE_{it}$	-0.024 (-2.09)**	-0.037 (-0.68)	-0.08 (-12.9)***
$GRWTH_{it}$	0.074 (4.36)***	0.063 (3.46)***	0.042 (6.87)***
$LEVE_{it}$	0.003 (10.41)***	0.002 (6.88)***	0.000 (6.64)***
ROA_{it}	0.136 (7.63)***	0.111 (6.13)***	-0.095 (-26.2)***
BIG4	-0.012 (-0.87)	-0.003 (-0.07)	-0.017 (-2.3)**
Constant	0.122 (0.81)	0.126 (0.42)	0.332 (7.61)***
Firm-fixed effects	Yes	Yes	Yes
Time-fixed effects	No	No	No
R^2	8%	11%	
F-statistic	14.64***	18.53***	
Hausman test		135.16***	
Modified Wald test		1200***	
DWH test			68.46***
No. of instruments			125
No. of groups			209
Number of obs.			1873
AR(2)–p value			0.608
Hansen test			0.115
DIH test			0.517

Notes: Numbers in parentheses are t-statistics. ***, **, * indicate 1%, 5%, and 10% significant levels, respectively.

up of several models such as the GMM approach. Here, the FE model is used when the period being examined exceeds 30 years. This implies that the FE model was more appropriate than the GMM approach since the latter was of a short panel (Roodman, 2006). Short panel data suffer from panel bias or endogeneity problems which can be solved by using instrumental variables (IV), DGMM or SGMM regression methods. According to Brei, Gambacorta and von Peter (2013), the GMM approach

does not suffer from invalid instrumentations and second-order serial correlations. Antonakis, Bendahan, Jacquart and Lalive (2014) maintained that instrumental variables require outside instruments which are difficult to be determined whereas the DGMM and SGMM models provided internal tools that were easier to be computed.

Table 3 shows the results. It suggests that the POLS was upward bias (0.032), whereas the FE suffered from a downward bias (-0.112). The SGMM, however, has a coefficient that was moderate and located between the POLS and the FE (-0.003). This outcome suggests that the results of the SGMM were more accurate than the static models. To differentiate and select the best static model, we used both the Breusch-Pagan LM test and the Hausman test. The significant result attained from the Breusch-Pagan LM test led to the null hypothesis being rejected, but it recommended using the RE model.[8] The second step was to use the Hausman test to detect the differentiation between the FE and the RE. As shown in Table 3, the Hausman test result was significant (>5%), suggesting that the null hypothesis[9] was rejected, hence the FE was the best model to be used. Table 3 also illustrates that modified Wald and Durbin-Wu-Hausman (DWH) tests were significant (>5%), thereby suggesting that the FE method suffered from heteroskedasticity and endogeneity problems. In this regard, the findings of this study suggest that static models were inefficient, and that the GMM model was the best.

4.4 Multiple Regression Analysis

As shown in Table 4, the results of the specification tests of the AR(2), Hansen and DIH tests were insignificant. This means that the empirical models were appropriately specified (see section 3.4).

Table 4 presents the empirical results for the DAC models by applying two-step SGMM. The first model included direct relationships while the second and third models included moderations. The most economically significant impact obtained for the Malaysian sample noted that firm's EQ has a trend, over time, through which the lagged accrual earnings management was found to significantly influence the current earnings management. Such results confirmed the use of the dynamic models, thereby justifying the GMM application.

[8] H_0: POLS is better than RE (Breusch-Pagan LM test).
[9] H_0: RE is better than FE (Hausman test).

Table 4: Ownership Structure, IFRS, Investor Protection, and EQ (DAC), SGMM

	Model 1	(Interaction, IFRS) Model 2	(Interaction, INPT) Model 3
DAC_{t-1}	-0.003 (-3.8)***	0.142 (24.08)***	-0.41 (-39)***
$MANOW_{it}$	-0.292 (-7.1)***	-0.015 (-0.89)	0.717 (4.78)***
$INSTOW_{it}$	0.369 (22.6)***	0.11 (8.49)***	0.09 (1.78)*
$IFRS_t$	0.003 (1.76)*		0.001(0.21)
INPT	-0.002 (-1.02)	0.002 (1.20)	
$SIZE_{it}$	-0.08 (-12.9)***	-0.004 (-0.69)	-0.085 (11.6)***
$GRWTH_{it}$	0.042 (6.87)***	0.075 (12.8)***	0.064 (8.29)***
$LEVE_{it}$	0.000 (6.64)***	0.002 (6)***	0.002 (7.24)***
ROA_{it}	-0.095 (-26.2)***	0.065 (1.93)*	0.114 (3.65)***
BIG4	-0.017 (-2.3)**	-0.127 (-9.98)***	-0.014 (-1.07)
MANOW*IFRS		-0.022 (-1.72)*	
INSTOW*IFRS		-0.002 (-0.63)	
MANOW*INPT			-0.085 (-4.74)***
INSTOW*INPT			0.002 (0.43)
Constant	0.387 (8.5)***	0.055 (1.65)*	0.45 (12.07)***
Firm-fixed effects	Yes	Yes	Yes
Time-fixed effects	No	No	No
Diagnostic tests			
No. of instruments	122	111	90
No. of groups	209	209	209
Number of obs.	1873	1873	1873
AR(2)–p value	0.508	0.260	0.210
Hansen test	0.112	0.261	0.105
DIH test	0.542	0.595	0.115

Note: ***, **, * indicate 1%, 5% and 10% significant levels, respectively.

4.4.1 The Effects of Ownership Structure on EQ

The first objective of this study was to examine the impact of managerial and institutional ownership on DAC (H_1 & H_3). The results in Model (1) showed that managerial ownership significantly and negatively affected firms' DAC (H_1). Specifically, the coefficient for managerial ownership was negative (-0.276) and significant at the 1% level. This means that the presence of managerial ownership leads to lower DAC, thus high-quality earnings. This finding is consistent with the general attitude

noted in past literature (Ali et al., 2008; Di Meo et al., 2017). Therefore, H_1 was supported.

However, institutional investors urged corporate managers to manipulate earnings (H_3). Result showed that this had a positive and significant impact on firm's DAC at the 1% level. This implies that institutional shareholders concentrated on corporate profits and ignored CG improvement. This outcome is theoretically consistent with the investment horizon and private benefits hypotheses which argued that institutional shareholders weaken firms' financial performance since they focussed on short-term investments (Muniandy et al., 2016). Two causes may justify this result. First, institutional investors have short-run investment strategies which prevented them from enhancing the CG systems and the accounting standards (Lemma et al., 2018). Second, although they are substantial shareholders in firms, they did not engage in observance activities which is not consistent with the MFRS 10. Based on this accounting standard, the monitoring power of concentrated ownership suggests that institutional investors should control and exercise their influence over firm's business, and not just having their voting power. The finding of this study has been verified by Al-Fayoumi et al. (2010) and Shayan-Nia et al. (2017). In this regard, policymakers and CG structures in firms need to focus on the long-run investments from institutions. This can strengthen their engagement with firms on the monitoring activities, such as improving the CG regime. Therefore, H_3 was not supported.

4.4.2 The Moderating Effect of IFRS Adoption

The second objective of this study was to examine the interactive impact of the IFRS adoption on the link between ownership structure and the DAC (H_2 & H_4). As shown in Table 4, the association between managerial ownership and DAC was significant, following the post-IFRS period (Model 2). Here, the coefficient shifted downwards, from -0.015 to -0.037 (i.e., -0.015 + [-0.022]) at a 10% significant level (H_2). This outcome is consistent with the theoretical attitude and the expectations of this study.

The finding derived has implications for the IFRS improvement, i.e. on the monitoring role of managerial ownership. This means that managerial shareholders are essential for enhancing corporate investments (Mykhayliv & Zauner, 2017), and for offsetting market inefficiency (Nakabayashi, 2019). The finding of this study is in tandem with Bilal et

al. (2018) and Bryce et al. (2015) who showed the link between the audit committee and EQ with the IFRS adoption. This result is also consistent with the Agency theory which suggests that shareholders incurred monitoring expenses, i.e. adopting high-quality accounting standards so as to reduce agency costs and opportunistic corporate behaviours (Samaha & Khlif, 2016). Thus, it serves as evidence for policymakers that a moderate level of managerial ownership, after IFRS adoption, is essential for ensuring high-quality earnings, investment and market efficiency. In this regard, H_2 is supported.

The result generated from this study also showed that the monitoring role of institutional ownership had improved slightly; the relationship between *INST*IFRS* and DAC was negative but not significant. This outcome implies that the IFRS alone cannot improve the monitoring ability of institutional shareholders since they focussed on short-run investments. They did not engage in the monitoring activities among their investees (MFRS 10). The outcome generated thus far is consistent with Liu et al. (2014) but it contradicts Bao and Lewellyn (2017). Regulatory agencies and CG structure in companies should focus on and deal with long-term stability institutional ownership. This would help the firms to: 1) concentrate on monitoring and reviewing their business activities, 2) increase and protect investments, and 3) improve the firm's EQ and market efficiency. This outcome was not up to our prediction, hence H_4 was not supported.

4.4.3 The Moderating Effect of Investor Protection

The third objective of this study is to investigate the moderating effect of the INPT on the association between ownership structure and EQ (H_5 & H_6). The findings in Model (3) suggested that the INPT in Malaysia improved the MANOW-DAC relationship (H_5). Specifically, the conditional effect of the *MAN*INPT* on DAC was positive (0.717) while its interaction effect was adverse, with a coefficient value of -0.085 at the 1% level. Therefore, the interaction had decreased the coefficient from 0.717 to 0.632 (i.e. 0.717 + [-0.085]). This implied that the INPT had strengthened the association and increased the firm's EQ. This outcome is consistent with previous literature (Altaf & Shah 2018), and also our expectations.

The findings derived from the current study also showed that an increased proportion of managerial ownership decreased the accruals earning management activities, thereby enhancing the level of EQ in

countries with high INPT levels. The result of this study is thus in line with the institutional theory. It is also consistent with the observations of Gupta et al. (2018) who focussed on the cost of capital, and Altaf and Shah (2018) who examined firm's performance with the INPT factor. Therefore, the fifth hypothesis (H_5) is supported.

In contrast, the *INST*INPT-DAC* relationship was noted to be positive and insignificant (H_6). This finding implied that the INPT weakened this relationship, thereby decreasing the EQ. This means that a high amount of institutional ownership decreased the level of EQ in a high INPT environment.

One possible justification for this occurrence may be Malaysia's weak law enforcement policy.[10] It appears that a strong law enforcement policy is essential for maintaining the earnings management behaviours and for improving the monitoring quality of the CG structure (Liu et al., 2014). Another reason is that the institutional shareholders do not engage in monitoring activities. In this regard, the result generated by the current study is in accordance with Al-Fayoumi et al. (2010), but it contradicted Bao and Lewellyn (2017), Gupta et al. (2018), and Altaf and Shah (2018). It seems clear that policymakers need to enhance the legal environment since the external CG mechanisms are vital for improving the internal monitoring abilities and the quality of financial reporting. Therefore, H_6 was not supported.

The new government of Malaysia (post-GE14) has the enthusiasm to implement a package stimulus for its economic reforms. They include the following. 1) Policies to reform the institutional weaknesses which had resulted in widespread corruption and financial scandals. Such reforms need to include contributions from executive bodies (i.e. government administrations). These reforms should also aim at enhancing the role and autonomy of the Parliament as well as the quality of the law-making process. 2) Judiciary reforms which are primarily aimed at removing the influence of the executive bodies (politicians) in the selection of judges and on the decision of judges. 3) Rule-of-Law/ Enforcement Reforms which focussed on enhancing the autonomy of enforcement agencies by reducing the influence of elected politicians (control of ministries). There are also a significant number of proposals which gave more independence to the Malaysian Anti-Corruption Commission (MACC) (Promise 14, Pillar 2). These include changing the legal status of the MACC, from being a government agency to being a

[10] https://www.acga-asia.org/cgwatch-detail.php?id=362

commission under the Federal Constitution. It should report directly to the Parliament. Another is the legal reform which should encourage all corruptions to be reported and current law need to be revised, for instance, the Whistleblower Protection Act, the Witness Protection Act and the Official Secrets Act. If these reforms are exercised, they could be expected to benefit and improve law enforcement, INPT, hence corporate investments and market stability.

Additionally, the results illustrated that accrual earnings management was negative and significantly related to firm size, Big4 and profitability. In contrast, it was positively associated with firm growth and financial leverage at the 1% level (Doukakis, 2014).

4.5 Robustness Test

This study had applied several robustness tests. Following past literature, this study applied the methodology of using the dynamic panel data which comprised the two-step DGMM (Chi et al., 2016). It also used another proxy for accrual-based earnings management, namely, the signed value of the DAC (SDAC) (Doukakis, 2014). All the mentioned tests were conducted with the three models explained. The results remain broadly consistent. Tables 5 and 6 show the results of the robustness tests.

Table 5: Ownership Structure, IFRS, Investor Protection and EQ (DAC), DGMM

	Model 1	(Interaction, IFRS) Model 2	(Interaction, INPT) Model 3
DAC_{t-1}	-0.261 (-56.1)***	0.104 (10.61)***	-0.156 (-7.91)***
$MANOW_{it}$	-0.18 (-2.45)**	0.013 (0.09)	0.592 (1.71)*
$INSTOW_{it}$	0.157 (4.57)***	0.291 (4.44)***	-0.049 (-0.35)
$IFRS_t$	-0.009 (-2.11)**		0.003 (0.56)
INPT	-0.001 (-0.38)	-0.002 (-0.45)	
$SIZE_{it}$	0.086 (3.46)***	0.154 (2.64) ***	-0.085 (-2.02) **
$GRWTH_{it}$	0.052 (4.62)***	0.042 (3.74) ***	0.063 (4.17) ***
$LEVE_{it}$	0.002 (15.77)***	0.000 (0.72)	-0.000 (-0.46)
ROA_{it}	0.11 (5.25)***	-0.201 (-2.51)**	0.145 (1.79) *
BIG4	0.045 (2.02)**	0.023 (0.57)	-0.002 (-0.04)
MANOW*IFRS		-0.058 (-2.02)**	
INSTOW*IFRS		-0.008 (-0.94)	
MANOW*INPT			-0.056 (-1.92)*
INSTOW*INPT			-0.01 (-1.24)

Table 5: Continued

	Model 1	(Interaction, IFRS) Model 2	(Interaction, INPT) Model 3
Firm-fixed effects	Yes	Yes	Yes
Time-fixed effects	No	No	No
Diagnostic tests			
No. of instruments	76	74	38
No. of groups	209	209	209
Number of obs.	1664	1664	1664
AR(2)–p value	0.205	0.262	0.193
Hansen test	0.123	0.752	0.299

Note: ***, **, * indicate 1%, 5%, and 10% significant levels, respectively.

Table 6: Ownership Structure, IFRS, Investor Protection and EQ (SDAC), SGMM

	Model 1	(Interaction, IFRS) Model 2	(Interaction, INPT) Model 3
$SDAC_{t-1}$	0.035(25.8)***	0.137 (14.32)***	-0.274 (-19.04)***
$MANOW_{it}$	-0.109 (-2.04)**	0.023 (1.21)	0.276 (1.56)
$INSTOW_{it}$	0.155 (3.11)***	0.094 (4.82)***	0.040 (0.74)
$IFRS_t$	0.001 (0.14)		0.018 (6.31)***
INPT	-0.015 (-3.61)***	0.006 (2.21)**	
$SIZE_{it}$	0.092 (8.58)***	0.022 (2.72)***	-0.013 (-1.61)
$GRWTH_{it}$	0.093 (6.67)***	0.104 (11.26)***	0.106 (13.16)***
$LEVE_{it}$	0.017 (94)***	0.003 (6.30)***	0.003 (7.24)***
ROA_{it}	0.822 (105)***	0.444 (9.16)***	0.457 (10.56)***
BIG4	-0.068 (-4.71)***	-0.179 (-10.7)***	-0.043 (-2.62)***
MANOW∗IFRS		-0.007 (-0.42)	
INSTOW∗IFRS		0.012 (2.49)**	
MANOW∗INPT			-0.022 (-1.07)
INSTOW∗INPT			0.005 (0.84)
Constant	-0.491 (-6.14)***	-0.184 (-4.03)***	-0.028 (-0.75)
Firm-fixed effects	Yes	Yes	Yes
Time-fixed effects	No	No	No
Diagnostic tests			
No. of instruments	94	102	90
No. of groups	209	209	209
Number of obs.	1873	1873	1873
AR(2)–p value	0.068	0.202	0.218
Hansen test	0.525	0.178	0.097
DIH test	0.405	0.522	0.147

Note: ***, **, * indicate 1%, 5%, and 10% significant levels, respectively.

4.6 Additional Tests

This study has computed additional tests comprising the variance inflation factors (VIF) for the regression model. Here, family ownership was added and measured as the percentage of shares held by family members and their relatives (Chau & Gray, 2010).

Table 7: Variance Inflation Factors

Variable	VIF	Tolerance
$MANOW_{it}$	3.08	0.325
$FAMOW_{it}$	2.80	0.357
$LEVE_{it}$	1.75	0.572
ROA_{it}	1.69	0.592
$INSTOW_{it}$	1.54	0.649
$SIZE_{it}$	1.40	0.713
$BIG4_{it}$	1.19	0.839
$IFRS_{it}$	1.02	0.981
$GRWTH_{it}$	1.00	0.996
Mean	1.72	

Table 7 presents the VIF and tolerance values of each independent variable. It is observed that all the factors are within the acceptable limits. According to Gujarati (2003), a VIF value of less than the threshold value of ten (10) indicates no multicollinearity problem. As seen in Table 7, the maximum amount of the VIF is almost three, and the mean value of the VIF is 1.72. Therefore, multicollinearity is not present, and both the managerial and family ownership is not correlated.

5. Conclusion and Implications

The current study contributes to the EQ literature by examining the moderating effect of both the IFRS adoption and the INPT on the relationship between ownership structure and EQ for the period of 2007-2016 in Malaysia. Unlike most prior studies which had used the static framework, this paper retests the ownership–EQ relationship by using a dynamic framework. Given the robustness of the empirical evidence to alternative estimation approaches, this study provided the following results. First, the univariate consequence showed that EQ

significantly improved following the IFRS adoption since the accrual manipulations decreased significantly. This result showed that the IFRS is vital, even in developing countries. Such countries that consider implementing the IFRS can use the outcome of this study as a guide for contributing to their regulators. Second, managerial ownership significantly decreased accrual earnings management while institutional ownership increased it. This showed that managerial ownership is vital for improving firm's profit quality pre-IFRS period. Third, after the IFRS, managerial ownership became more efficient in enhancing EQ whereas no significant improvements were found for the institutional mechanism. Finally, the results provided evidence showing that administrative property was more efficient in monitoring earnings management in a robust INPT environment. This study, thus supports the recommendation that the monitoring effectiveness of ownership structure can be dependent on the quality of the laws and the accounting standards enforcement.

The findings of this research has shown the complementary influences of the firm- and country-level governance mechanism in improving firm's EQ. The results thus implied that the agency theory and the institutional theory should work together to reinforce and improve the understanding of the governance phenomena in emerging economies. This is because even good CG cannot improve the monitoring performance in countries with a weak external governance mechanism like law enforcement and INPT. The weakness of a country's institutional setting is one of the common features in emerging countries, and this, invariably, affects the quality of earnings, market efficiency, and the whole economy.

The findings generated from this study offer some implications for policymakers and practitioners. First, politicians and the regulatory agencies need to realise that focusing on accounting standards alone would not wholly enhance the firm's EQ. Both the accounting and law enforcement are vital for limiting corporate misbehaviours. Regulators are also encouraged to ensure that high INPT levels prevail as it contributes to the governing of firms, disciplining of managers, and protecting of minority investors. Second, the results provide empirical evidence which showed that managerial ownership is an essential monitoring factor for improving EQ. Politicians and regulators should place greater emphasis on such a monitoring mechanism as it helps to protect domestic and foreign investors, as well as the country's economy. Third, Bursa Malaysia regulators and the CG structure in

firms need to adhere to the accounting standards, i.e. MFRS 10, which states that institutional investors should engage in the monitoring and business activities and not just own voting shares. Finally, the findings may be useful for foreign investors since the understanding of the firm's ownership structure may enhance their abilities in making judgements about investment decisions.

This study provides essential implications for researchers. First, academicians should focus more on the external governance factors, e.g. law enforcement in emerging countries as they are vital for improving firm's financial performance and the country's entire economy. Second, scholars have the opportunity to apply more external and internal governance mechanisms in both emerging and developed countries so as to improve firm performance and investments. Third, results of this study provide academicians with the additional knowledge that firms with managerial ownership performed better financially in comparison to other corporate shareholders, thus literature is expanded.

Further implications for corporate management are as follows: First, the results could be beneficial for corporate managers and boards in making suitable choices based on the CG characteristics which include the audit committee's effectiveness. This factor can enhance firm's financial performance. Second, corporate managers should strengthen firm's internal auditing and follow up with external auditors so as to address any weaknesses noted in the external governance mechanisms, for instance, law enforcement. Third, this study had identified the strengths and weaknesses of the institutional factors, namely, ownership structures, standard compliance and legal protection. Fourth, corporate managers should note that the proper level of ownership structure may improve the firm's EQ. It has been suggested that the DAC offered channels which regulators could use to determine the appropriate percentage of ownership.

As is noted in most research, there are some limitations to be addressed in the current study. First, this study was only interested in investigating the impact of ownership structure on EQ. This means that more research needs to explore how other CG variables may impact EQ after control has been set for potential endogeneity problems. Several measurements could be undertaken in terms of the dependent variables, for example, real earnings management can be used. Additionally, this study used data taken from only one developing country, Malaysia. Therefore, more research needs to be conducted by focussing on data taken from other developing countries for comparison purposes. With

regards to methodology, future studies should consider testing the non-linear relationship to reach the optimal level of ownership structure that ensures low levels of earnings management, hence, minority shareholders confidence.

References

Al-Fayoumi, N., Abuzayed, B., & Alexander, D. (2010). Ownership structure and earnings management in emerging markets: The case of Jordan. *International Research Journal of Finance and Economics, 38*(April), 28-47.

Ali, S.M., Salleh, N.M., & Hassan, M.S. (2008). Ownership structure and earnings management in Malaysian listed companies: The size effect. *Asian Journal of Business and Accounting, 1*(2), 89-116.

Altaf, N., & Shah, F.A. (2018). Ownership concentration and firm performance in Indian firms: Does investor protection quality matter? *Journal of Indian Business Research, 10*(1), 33-52. http://dx.doi.org/10.1108/JIBR-01-2017-0009

Alzoubi, E.S.S. (2016). Ownership structure and earnings management: Evidence from Jordan. *International Journal of Accounting & Information Management, 24*(2), 135-161.

Amran, N.A. and Ahmad, A.C. (2013). Effects of ownership structure on Malaysian companies performance. *Asian Journal of Accounting and Governance*, 4, 51-60. http://dx.doi.org/10.17576/ajag-2013-4-5774

Antonakis, J., Bendahan, S., Jacquart, P., & Lalive, R. (2014). *Causality and endogeneity: Problems and solutions*. http://dx.doi.org/10.1093/oxfordhb/9780199755615.013.007

Arellano, M., & Bover, O. (1995). Another look at the instrumental variable estimation of error-components models. *Journal of Econometrics, 68*(1), 29-51. http://dx.doi.org/10.1016/0304-4076(94)01642-D

Atieh, A., & Hussain, S. (2012). Do UK firms manage earnings to meet dividend thresholds? *Accounting and Business Research, 42*(1), 77-94. http://dx.doi.org/10.1016/j.jacceco.2007.11.002

Ball, R., Kothari, S., & Robin, A. (2000). The effect of international institutional factors on properties of accounting earnings. *Journal of Accounting and Economics, 29*(1), 1-51. http://dx.doi.org/10.1016/S0165-4101(00)00012-4

Bao, S.R., & Lewellyn, K.B. (2017). Ownership structure and earnings management in emerging markets—An institutionalized agency perspective. *International Business Review, 26*(5), 828-838. http://dx.doi.org/10.1016/j.ibusrev.2017.02.002

Ben Naceur, S., Ghazouani, S., & Omran, M. (2007). The performance of newly privatized firms in selected MENA countries: The role of ownership structure, governance and liberalization policies. *International Review of Financial Analysis, 16*(4), 332-353. http://dx.doi.org/10.1016/j.irfa.2006.09.006

Bilal, Chen, S., & Komal, B. (2018). Audit committee financial expertise and earnings quality: A meta-analysis. *Journal of Business Research, 84*(March), 253-270. http://dx.doi.org/10.1016/j.jbusres.2017.11.048

Blundell, R., & Bond, S. (1998). Initial conditions and moment restrictions in dynamic panel data models. *Journal of Econometrics, 87*(1), 115-143. http://dx.doi.org/10.1016/S0304-4076(98)00009-8

Brei, M., Gambacorta, L., & von Peter, G. (2013). Rescue packages and bank lending. *Journal of Banking and Finance, 37*(2), 490-505. http://dx.doi.org/10.1016/j.jbankfin.2012.09.010

Bryce, M., Ali, M.J., & Mather, P.R. (2015). Accounting quality in the pre-/post-IFRS adoption periods and the impact on audit committee effectiveness — Evidence from Australia. *Pacific-Basin Finance Journal, 35*(1), 163-181. http://dx.doi.org/10.1016/j.pacfin.2014.12.002

Chan, J. (2012). How is the progress on IFRS convergence in Malaysia now? *Crowe Horwath, E-Newsletter* (July), 1-3.

Chau, G., & Gray, S.J. (2010). Family ownership, board independence and voluntary disclosure: Evidence from Hong Kong. *Journal of International Accounting, Auditing and Taxation, 19*(1), 93-109. http://dx.doi.org/10.1016/j.intaccaudtax.2010.07.002

Chen, Y., & Rezaee, Z. (2012). The role of corporate governance in convergence with IFRS: Evidence from China. *International Journal of Accounting and Information Management, 20*(2), 171-188. http://dx.doi.org/10.1108/18347641211218470

Chi, J., Liao, J., & Chen, X. (2016). Politically connected CEOs and earnings management: Evidence from China. *Journal of the Asia Pacific Economy, 21*(3), 397-417. http://dx.doi.org/10.1080/13547860.2016.1176644

Christensen, H.B., Lee, E., Walker, M., & Zeng, C. (2015). Incentives or standards: What determines accounting quality changes around IFRS adoption? *European Accounting Review, 24*(1), 31-61. http://dx.doi.org/10.1080/09638180.2015.1009144

Cohen, D.A., Dey, A., & Lys, T.Z. (2008). Management in the Pre- and Post-Sarbanes-Oxley Periods. *Accounting Review, 83*(3), 757-787.

Dayanandan, A., Donker, H., Ivanof, M., & Karahan, G. (2016). IFRS and accounting quality: Legal origin, regional, and disclosure impacts. *International Journal of Accounting & Information Management, 24*(3), 1-36. http://dx.doi.org/10.1108/IJAIM-11-2015-0075

Dechow, P.M., Sloan, R.G., & Sweeney, A.P. (1995). Detecting earnings management. *The Accounting Review, 70*(2), 193-225.

Di Meo, F., Lara, J.M.G., & Surroca, J.A. (2017). Managerial entrenchment and earnings management. *Journal of Accounting and Public Policy, 36*(5), 399-414. http://dx.doi.org/10.1016/j.jaccpubpol.2017.07.003

Doukakis, L.C. (2014). The effect of mandatory IFRS adoption on real and accrual-based earnings management activities. *Journal of Accounting and Public Policy, 33*(6), 551-572. http://dx.doi.org/10.1016/j.jaccpubpol.2014.08.006

Fan, J.P.H., Wei, K.C.J., & Xu, X. (2011). Corporate finance and governance in emerging markets: A selective review and an agenda for future research. *Journal of Corporate Finance, 17*(2), 207-214. http://dx.doi.org/10.1016/j.jcorpfin.2010.12.001

Fan, J.P.H., & Wong, T.J. (2002). Corporate ownership structure and the informativeness of accounting earnings in East Asia. *Journal of Accounting and Economics, 33*(3), 401-435. http://dx.doi.org/10.1016/S0165-4101(02)00047-2

Ferentinou, A.C., & Anagnostopoulou, S.C. (2016). Accrual-based and real earnings management before and after IFRS adoption: The case of Greece. *Journal of Applied Accounting Research, 7*(1), 2-23. http://dx.doi.org/10.1108/09574090910954864

Filatotchev, I., & Jackson, G. (2013). Corporate governance and national institutions: A review and emerging research agenda. *Asia Pacific Journal of Management, 30*(4), 965-986. http://dx.doi.org/10.1007/s10490-012-9293-9

Francis, J., Schipper, K., & Vincent, L. (2005). Earnings and dividend informativeness when cash flow rights are separated from voting rights. *Journal of Accounting and Economics, 39*(1), 329-360. http://dx.doi.org/10.1016/j.jacceco.2005.01.001

García, M. del P.R., Alejandro, K.A.C., Sáenz, A.B.M., & Sánchez, H.H.G. (2017). Does an IFRS adoption increase value relevance and earnings timeliness in Latin America? *Emerging Markets Review, 30*(1), 155-168. http://dx.doi.org/10.1016/j.ememar.2016.11.001

Gonzalez, J.S., & Garcia-Meca, E. (2014). Does corporate governance influence earnings management in Latin American markets. *Journal of Business Ethics, 121*(1), 419-440. http://dx.doi.org/10.1007/s10551-013-1700-8

Grossman, S.J., & Hart, O.D. (1980). Takeover bids, the free-rider problem, and the theory of the corporation. *Bell Journal of Economics, 11*(1), 42-64. http://dx.doi.org/10.2307/3003400

Gupta, K., Krishnamurti, C., & Tourani-Rad, A. (2018). Financial development, corporate governance and cost of equity. *Journal of Contemporary Accounting & Economics, 14*(1), 65-82. http://dx.doi.org/10.1016/j.jcae.2018.02.001

Gujarati, D.N. (2003). *Basic econometrics* (4th ed.). New York, NY: McGraw-Hill.

Hadani, M., Goranova, M., & Khan, R. (2011). Institutional investors, shareholder activism, and earnings management. *Journal of Business Research, 64*(1), 1352–1360. http://dx.doi.org/10.1016/j.jbusres.2010.12.004

Haga, J., Ittonen, K., Tronnes, P.C., & Wong, L. (2018). Is earnings management sensitive to discount rates? *Journal of Accounting Literature, 41*(December), 75-88. http://dx.doi.org/10.1016/j.acclit.2018.03.001

Hamberg, M., Mavruk, T., & Sjögren, S. (2013). Investment allocation decisions, home bias and the mandatory IFRS adoption. *Journal of International Money and Finance, 36*(September), 107-130. http://dx.doi.org/10.1016/j.jimonfin.2013.04.001

Hartzell, J.C., & Starks, L.T. (2003). Institutional investors and executive compensation. *The Journal of Finance, 58*(6), 2351-2374.

Hasan, I., Kobeissi, N., & Song, L. (2014). Corporate governance, investor protection, and firm performance in MENA countries. *Middle East Development Journal, 6*(1), 84-107. http://dx.doi.org/10.1080/17938120.2014.886421

Hessayri, M., & Saihi, M. (2018). Ownership dynamics around IFRS adoption: Emerging markets context. *Journal of Accounting in Emerging Economies, 8*(1), 2-28. http://dx.doi.org/10.1108/JAEE-01-2016-0002

Hong, H.A. (2013). Does mandatory adoption of International Financial Reporting Standards decrease the voting premium for dual-class shares? *Accounting Review, 88*(4), 1289-1325. http://dx.doi.org/10.2308/accr-50442

Jensen, M.C., & Meckling, W.H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics, 3*(4), 305-360. http://dx.doi.org/10.1016/0304-405X(76)90026-X

Jones, J.J. (1991). Earnings management during import relief investigations. *Journal of Accounting Research, 29*(2), 193-228. http://dx.doi.org/10.2307/2491047

Joshi, M., Yapa, P.W.S., & Kraal, D. (2016). IFRS adoption in ASEAN countries. *International Journal of Managerial Finance, 12*(2), 211-240. http://dx.doi.org/10.1108/IJMF-04-2014-0040

Kamarudin, K.A., & Wan Ismail, W.A. (2014). The risk of earnings quality impairment. *Procedia - Social and Behavioral Sciences, 145*(August), 226-236. http://doi.org/10.1016/j.sbspro.2014.06.030

Kothari, S.P., Leone, A.J., & Wasley, C.E. (2005). Performance matched discretionary accrual measures. *Journal of Accounting and Economics, 39*(1), 163-197. http://dx.doi.org/10.1016/j.jacceco.2004.11.002

Kouaib, A., & Jarboui, A. (2017). The mediating effect of REM on the relationship between CEO overconfidence and subsequent firm performance moderated by IFRS adoption: A moderated-mediation analysis. *Research in International Business and Finance, 42*(December), 338-352. http://dx.doi.org/10.1016/j.ribaf.2017.07.034

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R.W. (1998). Law and finance. *Journal of Political Economy, 106*(6), 1113-1155. http://dx.doi.org/10.1086/250042

Lemma, T.T., Negash, M., Mlilo, M., & Lulseged, A. (2018). Institutional ownership, product market competition, and earnings management: Some evidence from international data. *Journal of Business Research, 90*(September), 151-163. http://dx.doi.org/10.1016/j.jbusres.2018.04.035

Leuz, C., Nanda, D., & Wysocki, P.D. (2003). Earnings management and investor protection: An international comparison. *Journal of Financial Economics, 69*(3), 505-527. http://dx.doi.org/10.1016/S0304-405X(03)00121-1

Liu, X., Saidi, R., & Bazaz, M. (2014). Institutional incentives and earnings quality: The influence of government ownership in China. *Journal of Contemporary Accounting and Economics, 10*(3), 248-261. http://dx.doi.org/10.1016/j.jcae.2014.10.003

Mehrani, S., Moradi, M., & Eskandar, H. (2016). Institutional ownership type and earnings quality: Evidence from Iran. *Emerging Markets Finance and Trade, 53*(1), 54-73. http://dx.doi.org/10.1080/1540496X.2016.1145114

Mollah, S., Al Farooque, O., & Karim, W. (2012). Ownership structure, corporate governance and firm performance. *Studies in Economics and Finance, 29*(4), 301-319. http://dx.doi.org/10.1108/10867371211266937

Muniandy, P., Tanewski, G., & Johl, S.K. (2016). Institutional investors in Australia: Do they play a homogenous monitoring role? *Pacific-Basin Finance Journal, 40*(December), 266-288. http://dx.doi.org/10.1016/j.pacfin.2016. 01.001

Mykhayliv, D., & Zauner, K.G. (2017). The impact of equity ownership groups on investment: Evidence from Ukraine. *Economic Modelling, 64*(August), 20-25. http://dx.doi.org/10.1016/j.econmod.2017.03.005

Nagata, K., & Nguyen, P. (2017). Ownership structure and disclosure quality: Evidence from management forecasts revisions in Japan. *Journal of Accounting and Public Policy, 36*(6), 451-467. http://dx.doi.org/10.1016/j.jaccpubpol.2017.09.003

Nakabayashi, M. (2019). Ownership structure and market efficiency. *Journal of International Financial Markets, Institutions & Money*, *61*(July), 189-212. http://dx.doi.org/10.1016/j.intfin.2019.03.003

Noe, T.H. (2002). Investor activism and financial market structure. *Review of Financial Studies*, *15*(1), 289-318.

Nurul Houqe, M., van Zijl, T., Dunstan, K., & Karim, A.K. M.W. (2012). The effect of IFRS adoption and investor protection on earnings quality around the world. *International Journal of Accounting, 47*(3), 333-355. http://dx.doi.org/10.1016/j.intacc.2012.07.003

Persakis, A., & Iatridis, G.E. (2017). The joint effect of investor protection, IFRS and earnings quality on cost of capital: An international study. *Journal of International Financial Markets, Institutions and Money, 46*(1), 1-29. http://dx.doi.org/10.1016/j.intfin.2016.10.001

Qian, M., Sun, P., & Yu, B. (2018). Top managerial power and stock price efficiency: Evidence from China. *Pacific-Basin Finance Journal, 47*(February), 20-38. http://dx.doi.org/10.1016/j.pacfin.2017.11.004

Randhawa, D.S. (2011). Banking and capital market reforms in Malaysia. *ASEAN Economic Bulletin, 28*(3), 388-413. http://dx.doi.org/10.1355/ae28-3g

Roodman, D. (2006). How to do xtabond2: An introduction to "difference" and "system" GMM in stata. *The Stata Journal, 9*(1), 86-136. http://dx.doi.org/10.1177/1536867X0900900106

Ruiz-Mallorqui, M.V., & Santana-Martin, D.J. (2009). Ultimate institutional owner and takeover defenses in the controlling versus minority shareholders context. *Corporate Governance, 17*(2), 238-254. http://dx.doi.org/10.1111/j.1467-8683.2009.00735.x

Samaha, K., & Khlif, H. (2016). Adoption of and compliance with IFRS in developing countries. *Journal of Accounting in Emerging Economies, 6*(1), 33-49. http://dx.doi.org/10.1108/JAEE-02-2013-0011

Sannchez-Ballesta, J.P., & Garcia-Meca, E. (2007). Ownership structure, discretionary accruals and the informativeness of earnings. *Corporate Governance, 15*(4), 677-691. http://dx.doi.org/10.1111/j.1467-8683.2007.00596.x

Sepasi, S., Kazempour, M., & Mansourlakoraj, R. (2016). Ownership structure and disclosure quality: Case of Iran. *Procedia Economics and Finance, 36*(16), 108-112. http://dx.doi.org/10.1016/S2212-5671(16)30021-1

Shayan-Nia, M., Sinnadurai, P., Mohd-Sanusi, Z., & Hermawan, A.-N. A. (2017). How efficient ownership structure monitors income manipulation? Evidence of real earnings management among Malaysian firms. *Research in International Business and Finance, 41*(October), 54-66. http://dx.doi.org/10.1016/j.ribaf.2017.04.013

Shleifer, A., & Vishny, R.W. (1997). A survey of corporate governance. *The Journal of Finance, 52*(2), 737-783. http://dx.doi.org/10.1111/j.1540-6261.1997.tb04820.x

Tran, D.H. (2014). Multiple corporate governance attributes and the cost of capital – Evidence from Germany. *British Accounting Review, 46*(2), 179-197. http://dx.doi.org/10.1016/j.bar.2014.02.003

Wan-Hussin, W.N. (2009). The impact of family-firm structure and board composition on corporate transparency: Evidence based on segment disclosures in Malaysia. *International Journal of Accounting, 44*(4), 313-333. http://dx.doi.org/10.1016/j.intacc.2009.09.003

Wang, K., & Shailer, G. (2015). Ownership concentration and firm performance in emerging markets: a meta-analysis. *Journal of Economic Surveys, 29*(2), 199-229. http://dx.doi.org/10.1111/joes.12048

Wintoki, M.B., Linck, J.S., & Netter, J.M. (2012). Endogeneity and the dynamics of internal corporate governance. *Journal of Financial Economics, 105*(3), 581-606. http://doi.org/10.1016/j.jfineco.2012.03.005

Young, M.N., Peng, M.W., Ahlstrom, D., Bruton, G.D., & Jiang, Y. (2008). Corporate governance in emerging economies: A review of the principal-principal perspective. *Journal of Management Studies, 45*(1), 196-220. http://dx.doi.org/10.1111/j.1467-6486.2007.00752.x

Zhong, L., Chourou, L., & Ni, Y. (2017). On the association between strategic institutional ownership and earnings quality: Does investor protection strength matter? *Journal of Accounting and Public Policy, 36*(6), 429-450. http://dx.doi.org/10.1016/J.JACCPUBPOL.2017.09.002

Appendix

Variables	Acronym	Description
Total accruals	TACC	The difference between net income and cash flow from operation
Discretionary accruals	DAC	The difference between total accruals and non-discretionary accruals (absolute value)
Managerial ownership	MANOW	Proportion of shares obtained by executive directors and non-independent non-executive directors
Institutional ownership	INSTOW	Proportion of shares held by institutional investors that own more than 5% to the total number of shares issued
Investor protection	INPT	It is an index developed by the DBP (World Bank)
IFRS	IFRS	Dummy variable that equals 1 if the year is post-IFRS adoption, 0 otherwise
Big Four auditing	BIG4	Dummy variable that equals 1 if a firm is audited by one of the Big4 auditing businesses and zero if otherwise
Firm Growth	GRWTH	The change in total assets scaled by lagged total assets
Firm Leverage	LEVE	Total debt over total assets
Profitability	ROA	Net income before tax over the average total assets
Firm size	Ln(SIZE)	The natural logarithm of total assets