Voluntary disclosure and earnings quality: evidence from ownership concentration environment

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Abstract

Purpose – This study aims to investigate the relationship between earnings quality and corporate voluntary disclosure among Malaysian listed companies. Moreover, it examines the moderating effect of the ownership structure on the relationship between earnings quality and corporate voluntary disclosure.

Design/methodology/approach – This study covers 300 companies listed on Bursa Malaysia. It has used strategic, financial and non-financial information to measure voluntary disclosure; earnings management, persistence and smoothness to measure earnings quality; and institutional and managerial shareholders to measure ownership structure. Hierarchical regression analysis was used to investigate if ownership structure moderates the relationship between earnings quality and corporate voluntary disclosure.

Findings – The results in this work imply that companies with high earnings quality are more likely to disclose voluntary information to help stakeholders. Furthermore, this study provides original evidence that institutional ownership and managerial ownership play a main role as moderating variables that influence management motives toward practices of voluntary disclosure and earnings quality.

Originality/value – Because of the limited number of empirical studies on the relationship between voluntary disclosure and earnings quality, this study fills a gap in the literature by investigating the relationship between them. In addition, a lack of research exists on the effects of ownership structure on the relationship between voluntary disclosure and the earnings quality. Therefore, this study makes an original contribution to the literature by using institutional and managerial ownership as moderating variables to investigate the effects of the ownership structure on the relationship between voluntary disclosure and earnings quality in Malaysian companies.

Keywords Quality, Ownership, Malaysia, Earnings, Concentration, Disclosure, General management

Paper type Research paper

1. Introduction

Disclosing more information has attracted the excessive attention of current and potential investors, regulators, practitioners and accounting researchers, especially after the crises and failures that happened around the world. A number of international accounting bodies and domestic regulators have developed rules and codes to ensure that the disclosures of the information of all companies to all users and stakeholders is adequate to help them in taking decisions. In Malaysia, the legal protection for shareholders and judicial enforcement seem to be good compared with Germany and Korea, but it seems to be weak compared with the United States and the United Kingdom (Porta *et al.*, 2000).

To help stakeholders, regulatory authorities have imposed mandatory disclosure requirements on companies elements (Popova *et al.*, 2013). Despite the evident benefits for information users, some companies have failed to provide adequate information, and leading

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companies remain concerned about the ability to attract investors to invest in their companies (Alsaeed, 2006; Alzoubi and Alzoubi, 2016; Nyahas *et al.*, 2018).

Recognising the need for regular enhancements to disclosure practices, the Malaysian Code of Corporate Governance (2001 and 2008) encouraged companies to disclose to provide investors relevant information to facilitate investment decision-making. However, it seems as if those codes still need improvement, thus the new code (MCCG 2016) will adopt a different approach from those of previous codes. The new approach aims to encourage progress and emphasizes conduct and outcomes from disclosure practices. According to the new code, companies are expected to disclose their adherence to the core practices on an "apply or explain an alternative" basis, which encourages a greater thought process in undertaking the practices, and in making disclosures.

Prior researchers suggest that there is an opportunity to improve stock market by increasing levels or extent of corporate voluntary disclosures (CVD) (Alzoubi and Alzoubi, 2016; Madi *et al.*, 2014; De Klerk *et al.*, 2015; Alfraih and Almutawa, 2017). Furthermore, professional bodies have encouraged companies to restore confidence in market transparency by improving CVD, but CVD still remain at a low level in annual reports of companies. The codes assert that CVD gives the companies benefits such as:

- improving equity market;
- increasing the trust of shareholders;
- ensuring the protection of all shareholders' rights;
- expressing the transparency and accountability of management in conducting business; and
- reducing information asymmetry between firm and outside investors (Rouf and Akhtaruddin, 2018; Alzoubi and Alzoubi, 2016; Ebrahimabadi and Asadi, 2016; Grigoris, 2014; Ho *et al.*, 2013; Lim *et al.*, 2017; Alfraih and Almutawa, 2017; Villiers and Staden, 2012).

Earnings quality (EQ) reflects the reality of the financial situation of a company and the ability a company has to achieve earnings in current and future periods effects CVD practices (Francis *et al.*, 2008; Shiguang and Liangbo, 2017). Achieving high EQ creates a motive for managers to disclose more information (Ebrahimabadi and Asadi, 2016; Verrecchia, 1990). This means that companies that have good EQ will disclose more expansive information because the stakeholders will treat such information as more credible (Francis *et al.*, 2008; Yeh *et al.*, 2014). Therefore, these companies gain benefits from CVD, especially the ability to instil confidence among investors in the wake of the 2007-2008 worldwide financial crisis.

Most of the pervious researchers such as Alfraih and Almutawa (2017) and Neifar *et al.* (2016) focus on enhancing corporate governance (CG) to monitor management practices, but CG mechanisms may not be important in companies that have ownership concentration. In these companies, a few shareholders usually hold a significant percentage of company's shares to have strong control over managerial practices and have positions on the board (Callao *et al.*, 2016; Jaggi and Leung, 2007; Jiang and Habib, 2009; Mehrani *et al.*, 2017). Thus, control by these shareholders already exists even if CG is weak. This situation is consistent with the argument suggesting that agency conflicts are relatively lower in companies that have ownership concentration compared with companies having spread ownership (Friedman and Miles, 2002; Hashmi *et al.*, 2018; Unerman and Bennett, 2004).

Malaysia presents an ideal setting to address issues related to CVD and EQ among listed companies because the ownership is highly concentrated in the hands of large shareholders.

Apart from the availability of a large population for a sample, Malaysian listed companies (MLC) have several features that make them suitable for the purposes of this study. First, in most MLC, few shareholders dominate the top positions in management and board of directors. Thus, the controlling shareholders participate considerably in the operations of the company. Second, the ownership of the companies is highly concentrated. Therefore, this study aims to investigate the relationship between EQ and CVD, and the impact of ownership concentration on the relationship between CVD and EQ.

This study contributed to knowledge in three main ways. First, implications to MLC, regulatory and policy agencies. The findings increased awareness about the extent of CVD amongst MLC, as well as the benefits of CVD and the effect of EQ and ownership structure (OS) on CVD. As a result, regulatory authorities in Malaysia might use the results to expand disclosure requirements, encourage the MLC to disclose more information and improve the quality of disclosure. This study shows a clear view to understand the relationship between CVD and EQ, also the impact of OS on the disclosure practices. The finding helps the regulatory bodies to assess EQ, as well as estimate the existing OS to take actions towards the current listing requirements. In addition, the findings also show the efficiency of ownership concentration in terms of information sharing and management monitoring in a country with little minority shareholder-protection. Given that the majority of listed companies in Malaysia are financial institution-controlled, the inefficiency of information sharing in such companies presents a potential threat. Hence, the results may support the authorities in overcoming agency conflicts and finding solutions to solve these conflicts.

Second, implications to Users of the financial statements. Information in an annual report is used to evaluate a company's position and performance to help predict the prospects of a company. The users of annual reports are financial analysts, investors, creditors, management members and others who will use the information in annual report to make their decisions. Understanding factors that influence the disclosure of information will build confidence in decision making as well as evaluate management performance.

Finally, implications to Literature. Because of the limited number of empirical studies on the relationship between CVD and EQ, this study filled a gap in the literature by investigating the impact of EQ on CVD. In addition, most previous studies used EM through discretionary accruals (EMDA) as a proxy to measure EQ, but the present study used earnings persistence (EP) and earnings smoothness (ES) as proxies to measure EQ beside EMDA. Also, a lack of research exists on the effects of institutional ownership (IO) and management ownership (MO) on the relationship between CVD and the EQ. Therefore, this study makes an original contribution to the literature by using IO and MO as moderating variables to investigate the effects of the OS on the relationship between CVD and EQ in MLC. This offers the advantage of stimulating scholars' investigation of a period that is more spacious to generalize the findings and provide invaluable explanations.

2. Theoretical framework and literature review

Stakeholders' theory, positive accounting theory and agency theory posit that corporate performance or EQ impact CVD practices. The financial and economic performance of companies has a positive connection with its information disclosure (Qu, 2011). Companies that have high earnings are more able to provide CVD such as strategic, financial and corporate social responsibility information (Rouf and Akhtaruddin, 2018; Grigoris, 2014). Although providing this information to the stakeholders generally increases expenses, it might be regarded as a valuable social contribution made by the company (Sun *et al.*, 2010).

According to positive accounting theory, management members in high-EQ companies will disclose more information to get a bonus or compensation and decrease risks for

investors that results in lower costs for attracting new capital or looser contract constraints (debt/equity). Disclosure also reduces media or political attention according to the political cost hypothesis (Elmans, 2012).

Conflicting arguments exist about how EQ affects company disclosure practices and decisions (Francis *et al.*, 2008). Based on agency theory, the first argument suggests that, when different information exists between insiders and shareholders, shareholders have motives to request more information from company management (Grossman and Hart, 1980; Verrecchia, 1990). In the context of this argument, Francis *et al.* (2008) and Yeh *et al.* (2014) say that the relationship between EQ and CVD is substitutive or negative, wherein companies having poor (good) EQ will disclose more (less) expansive information because the information asymmetry in those companies is high (low) between management and investors. The other argument is that increasing information quality creates motives for managers to disclose more information (Verrecchia, 1990). According to this argument, Francis *et al.* (2008) said that the relationship between EQ and CVD is complementary or positive, whereby companies that have poor (good) EQ will disclose less (more) expansive information because stakeholders will treat such information as less (more) credible.

High EQ is especially vital for leading business companies, in which equity ownership plays the main role in controlling corporate practices and decisions. The agency theory illuminated in Jensen and Meckling (1976) and Salehi and Shirazi (2016) recommends that conflicts of interest between principals and agents acting as representatives of a principal might increase due to the divergence of interests and presence of asymmetrical information. As agents, corporate management members prepare their annual reports to discharge their management duties, and principals use the information provided to reward the agents.

To garner these rewards, corporate management is motivated to provide more information in cases in which the company has a high EQ (complementary relationship), where De Klerk *et al.* (2015) provided evidence that higher levels of disclosure are associated with higher share prices. However, the use of information in annual reports might offer motivations for earnings management (EM), which results in lower EQ (Ismail and Binti, 2011). Alzoubi and Alzoubi (2016) noted that high level of disclosure quality and CVD will enhance investors' ability to detect EM (substitutive relationship). Therefore, shareholders will ask management to disclose more information to assure that management is working in their best interests.

According to Jensen and Meckling (1976), if both managers and shareholders have aligned interests, then no conflict of interest or agency problem exists. This is clearly true when shareholders are among those who manage the company. Based on this argument, significant control over the running of the company by the shareholders will reduce agency problems. Lower agency problems, because of the alignment of interests between them, would lead to less motivation for EM and therefore result in high EQ, as well as the disclosure of more information. Thus, the following hypotheses are posited:

H1a. There is a negative relationship between EM and the level of CVD.

Accruals alone are not enough to provide a clear image about the EQ in instances, for example, in which a company has low accruals but is yet to show any signs of profit. Thus, the conclusion cannot be made that a given company has high EQ; especially if the accruals fail to reflect a company's ability to achieve earnings in current and future periods, where CVD is associated with innate EQ and is unrelated to discretionary EQ (Francis *et al.*, 2008). Thereby using other proxies such as EP and smoothness beside accruals to measure EQ is important (Shiguang and Liangbo, 2017).

Persistence is known to be one of the most important attributes of earnings. It reflects the ability of a company to achieve earnings in both current and future periods (Dechow *et al.*, 2010; Sebai, Messai, and Jouini, 2015). Henceforth, based on the definition, earnings are considered to be persistent in the current period if it they are sustainable in future periods. EP is an extremely important factor to consider for stakeholders when making decisions, mainly because EP draws a picture about the company's performance and the policies that the company is using to achieve its earnings in the future (Dechow *et al.*, 2010).

Disclosing more information such as corporate strategy and financial ratios gives a striking feature to look at for companies, especially for companies that have EP. In general, investors trust a company that has the ability to achieve earnings in its current and future periods more than other companies. Achieving EP creates motives for management members to disclose more information. That is because shareholders, future investors and information users will treat such information as more credible after achieving the main objective for the company, which is achieving earnings in current and future periods.

Based on the information above, companies with high EP that will attract stakeholders' interests are likely to have an incentive to provide more CVD. Thus, the following hypotheses were tested in this study:

H1b. There is a positive relationship between EP and the level of CVD.

Smoothness refers to "the relative absence of variability" (Schipper and Vincent, 2003). This means that the less volatile earnings are the smoother the earnings are. ES is a desirable earnings attribute; it indicates high-quality earnings (Francis *et al.*, 2008). This desirable earnings attribute reflects the idea that management members use their own information about future income to smooth out transitory fluctuations and thereby achieve a more representative, hence more useful, reported earnings number (Francis *et al.*, 2008).

The objective of financial accounting standards is to create a representation of real performance that makes the prediction of the cash flow easy. Hence, the supposition is that companies with a smooth flow in earning provide more information, mainly because smoothness is considered to be an outcome of an accruals process that, in turn, helps in making decisions (Dechow *et al.*, 2010). In addition, providing more information is linked with innate EQ, or EQ that is associated with a company's fundamental business model (Francis *et al.*, 2008).

However, the relationship between CVD and ES seems positive, therefore, the study hypothesized that:

H1c. There is a positive relationship between ES and the level of CVD.

Many companies around the world, including Malaysia, offer their shares in stock exchange market. The diffusion of corporate shareholdings has led to the increased possibility of conflict that may happen between managers and stockholders. The nature of the shareholding structure of the company influences the nature of the agency problems that arise between managers and all stockholders in general (Jiang and Habib, 2009). Jensen and Meckling (1976) mention that the diffusion of ownership will increase the conflict of interests between managers who have shares in company and external stockholders.

OS is among the most important elements in setting the goals of a company and increasing the wealth of stockholders (Jensen, 2003). This structure is related to the way in which a company is organized and how shareholders can influence the processes of a company (Jiang and Habib, 2009). In addition, Lehmann and Weigand (2000) noted that the

OS is a central discriminatory characteristic of financial systems and a main component in determining CG and behavior according to Qu (2004). Thus, the OS influences the CVD level.

The level of ownership concentration is a determinant of the distribution of influence between managers and stockholders (Jiang and Habib, 2009). Ownership concentration is a large number of the shares in the hands of a few stockholders who are also called controlling stockholders (Hashmi *et al.*, 2018; Yohan, 2015) or large block holders who are normally IO (Financial Times lexicon). These large stockholders exert control rights through their status on the board of directors by which they can affect management practices (Adelopo *et al.*, 2012; Mehrani *et al.*, 2017; Nyahas *et al.*, 2018). Thus, concentrated stockholders can observe the efficacy, agency costs, disclosures practices and company performance of managers (Rouf and Akhtaruddin, 2018; Friedman and Miles, 2002; Hashmi *et al.*, 2018; Unerman and Bennett, 2004).

By investigating the disclosure and OS, Zhuang *et al.* (2000) found that the disclosure in annual reports was inadequate. The reason is that a big portion of ownership is mainly concentrated in IO (individuals or family members), and businesses with high ownership concentration are encouraged to disclose less information about company practices to decrease the expenses of disclosure, especially the information asymmetry is low because they have the power to know all information, but disclosing less information means that the company will lose the opportunity of attracting more investors. In a study of 490 companies, Yeo *et al.* (2002) indicated that controlling shareholders are usually perceived as disclosing accounting information serving their own interests. Morever, Villiers and Staden (2012) found that most shareholders are very positive about the disclosure of a range of voluntary environmental information items and they want this information to be made compulsory. Based on this discussion and prior studies, the OS plays a main role in determining if the relationship between EQ and CVD is substitutive or complementary, where the shareholders' interests are explaining why the company discloses more or less information.

Several studies in Malaysia have concluded that OS affects disclosure practices. Rouf and Akhtaruddin, 2018; Akhtaruddin and Haron (2010), Ghazali and Weetman (2006), Alfraih and Almutawa (2017) and Nyahas *et al.* (2018) found a relationship between CG (especially OS) and CVD. In other countries, Bushee and Noe (2000), and Jiang and Habib (2009) found a significant relationship between CVD incentives and the percentage of IO. Huafang and Jianguo (2007), Nurleni *et al.* (2018) found a positive relationship, but Eng and Mak (2003) believed the relationship was negative. Jiang and Habib (2009), Lakhal (2005) and Nurleni *et al.* (2018) asserted that MO has an influence on the CVD decisions and practices.

IO and MO are used as variables in this study for two reasons. First, CG mechanisms are likely to enhance EQ and disclosure transparency (Callao *et al.*, 2016; Yohan, 2015). Furthermore, the empirical studies have asserted that IO are controlling stockholders who have influence on company practices and decisions including financial reporting quality and disclosure. The examples of those empirical studies include: Akhtaruddin and Haron (2010), Ghazali and Weetman (2006); Klai and Omri (2011), Mehrani *et al.* (2017) and Nurleni *et al.* (2018). Previous studies such as those of Eng and Mak (2003) and Wan-Hussin (2009) have asserted that agency conflict will fade if managers have a portion of the shares. This ownership, in turn, will cause the interests of managers to align with those shareholders, and this ownership also means that managers will share the same risks and benefits of managerial actions that either reduce or generate value for the company.

Second, IO and MO are common in the Malaysian market (Ahmad and dan Jusoh, 2014; Sinnadurai, 2016; Tam and Tan, 2007). The average of the largest shareholder in 1998 was 30.3 per cent of the total shareholder in MLC (Zhuang *et al.*, 2000). In addition, Claessens and

Fan (2002) found that 40.4 per cent of 238 companies were owned by a single stockholder, and they also found that 85 per cent of MLC had MO. Tam and Tan (2007) show that large ownership (IO) have more than 50 per cent ownership.

Therefore, the two following hypotheses are formulated:

H2a. The institutional OS has an effect as a moderating variable on the relationship between EQ and CVD.

H2b. The managerial OS has an effect as a moderating variable on the relationship between EQ and CVD.

3. Research design

3.1 Data collection and sample

According to Krejcie and Morgan (1970) and Tabachnick and Fidell (2007), a sample representing the population (700 companies) adequately would be 249 companies. To achieve a higher degree of accuracy, this study deals with a sample of 300 large companies quoted on the Bursa Malaysia, which fully represents the population. The population is MLC in the 2014 except the banks, insurance and service companies. The excluded companies cannot be involved in the sample to not disturb the sampling process, where those companies have differences in the features of some objects in financial statements (Sun *et al.*, 2010) and as they have high capitalization rate (Sebai *et al.*, 2015).

The results will serve a basic data for future studies that will investigate the difference disclosure practices present in the MCCG 2008 and MCCG 2016. The new code (MCCG 2016) will adopt a different approach from previous codes. According to the new code, companies are expected to disclose their adherence to core practices on an "apply or explain a basis," which is seen as encouraging greater thought process in undertaking the practices and in making disclosures.

Large and listed companies are more likely to attract the interest of investors (Ghazali and Weetman, 2006). Those companies should be more willing to comply with the CG code (Boo and Sharma, 2008). Moreover, annual reports of top companies represent the concerns and interests of companies for being benchmarked for best practices of CG (Ghosh *et al.*, 2010; Yau *et al.*, 2009). For these reasons, providing evidence about OS, EQ and CVD practices for listed big companies is interesting.

3.2 Measurement of variables

3.2.1 Corporate voluntary disclosure. CVD is the information residing primarily outside financial statements that are not explicitly required by GAAP or an SEC rule (FASB, 2001). CVD is not easily evaluated and cannot be evaluated via a precise scientific technique (Botosan, 1997). Therefore, most researchers such as Akhtaruddin and Haron (2010), Ghazali and Weetman (2006), Hossain and Hammami (2009), Lim *et al.*, 2017 and Madi *et al.* (2014) utilize a disclosure index to evaluate corporate disclosures.

The checklist instrument categorized CVDs according to Madi *et al.* (2014) who adopted it from Akhtaruddin and Haron (2010) and Ghazali (2010) into three basic types: strategic information, financial information and non-financial information.

Strategic and financial information have decision relevance to current and future investors while non-financial information is focused more on a company's social accountability and targeted for stakeholders other than the shareholders. Consequently, the variables impacting CVD choices may also differ by information type. By following

Meek *et al.* (1995), the CVD items of current study are classified into three major types of information: strategic, financial and non-financial.

The main reason for using this checklist is that the original checklist was compiled "based on an analysis of international trends and observations of standard reporting practice, taking into account the relevant research studies as well as other comprehensive international surveys of accounting and reporting" (Meek *et al.*, 1995, p. 561). In more detail, this checklist was built on an extensive review of previous research, thus the items that have been specified are considered relevant and are likely to be disclosed by listed corporations (Chau and Gray, 2002; Cheng and Courtenay, 2006; Madi *et al.*, 2014). Moreover, by using the same checklist, comparing the previous findings with the findings of this study is easier; therefore, the findings would explain to what level of disclosures that has improved in MLC (Madi, 2012). Finally, many researchers in Malaysia have used this checklist. This means that it already verified by an investment analyst and a senior official from Bursa Malaysia as reflecting the voluntary items that are considered important for disclosure in a Malaysian corporate annual report (Madi, 2012). Lastly, for achieving higher degree of accuracy, a number of accounting professors majoring in CVD verified the items of checklist (Madi, 2012).

A checklist table comprising 74 items was prepared using Excel to rate the types of CVD, where the CVD was evaluated as follows:

CVD = Σ d/Total score (74)

where:

d = 1 if the CVD item is disclosed; and

d = 0 if the CVD item is not disclosed.

3.2.2 Earnings quality. Therefore, this study uses three different proxies that were presumed to have been used in previous studies to measure EQ, where these proxies cover all facets of EQ, increase the accuracy of the results and use alternative measures mitigate the possibility, that results gotten by using one particular proxy, capture some factors other than EQ (Yasser *et al.*, 2016). These proxies are EMDA, EP and ES.

Several studies (Alzoubi and Alzoubi, 2016; Hashmi *et al.*, 2018; Kiattikulwattana, 2014; Neifar *et al.*, 2016; Salehi and Shirazi, 2016) have used the modified Jones model, which has been considered as a better proxy for EQ in recent times. Hence, the discretionary accruals in this study were estimated through the residual of the following model:

$$\mathrm{TA_{it}} = \delta_0/\mathrm{ASSETS_{it}} - 1 + \delta_1(\Delta\mathrm{REVE_{it}} - \Delta\mathrm{REC_{it}}) + \delta_2\mathrm{PPE_{it}} + \delta_3\mathrm{ROA_{it}} - 1 + \varepsilon_{\mathrm{it}}$$

where TA_{it} is the total accruals for company i at year t; $ASSETS_{it\text{-}1}$ is the total assets for company i at the end of year $t-1$; $\Delta REVE_{it}$ is the change in net revenues in year t from year $t-1$; ΔREC_{it} is the change in net receivables in year t from year $t-1$; PPE_{it} is the gross of property, plant and equipment for company i at year t; and $ROA_{it\text{-}1}$ is return on assets for company i from year $t-1$.

According to Heij *et al.* (2004), the common measure for persistence is the autocorrelation of earnings where high autocorrelation between current and past income is desirable. The following equation was used in this study using a total of five years (2010 to 2014) to measure EP (Dichev and Tang, 2008; Yeh *et al.*, 2014):

$$\mathrm{IBXI_{it+1}}/\mathrm{AVASS_{it}} = \alpha + \beta\ [\mathrm{IBXI_{it}}/\mathrm{AVASS_{it]}} + \varepsilon_{\mathrm{it}}$$

where $IBXI_{it}$ is income before extraordinary items for company i; and $AVASS_{it}$ is average of total assets for company i at the end of years t and $t-1$.

However, many assert that the ES should be considered to be a proxy to measure the EQ. According to Bowen *et al.* (2008), Khalil and Simon (2014) and Yeh *et al.* (2014), the following equation is used for the five years from 2010 to 2014 to measure ES:

$$\text{SMOOTH}_{it} = \sigma\,(\text{OCF}_{it}/\text{ASSETS}_{it-1})/\sigma\,(\text{EBXI}_{it}/\text{ASSETS}_{it-1})$$

where σ is standard deviation for company i; OCF_{it} is operating cash flows in year t; $EBXI_{it}$ is net income before extraordinary items in year t.

3.2.3 Ownership structure. This study used the following calculation to measure IO and MO (Alzoubi and Alzoubi, 2016; Benjamin, 2015; Jiang and Habib, 2009; Mehrani *et al.*, 2017; Rouf and Al Harun, 2011):

IO = (equity held by IO)/(all equity of the company)

MO = (equity owned by the insiders)/(all equity of company).

3.3 Methodology

The moderating variables in this study are two types of OS. This study investigates the impacts of IO and MO as moderating variables on the relationship between EQ and the level of CVD (and its types). To achieve this objective, this study used multiple hierarchical regression analysis to investigate the moderating effects of OS.

Hierarchical regression analysis is one of the most popular methods applied to determine the effect of moderating variables (Kim *et al.*, 2009). Furthermore, it is seen as an appropriate approach used to find the moderating effect of a quantitative variable on the relationship between other quantitative variables (Baron and Kenny, 1986). Therefore, the appropriate method to explain the agency and stakeholders theories is the Hierarchical regression analysis, where this method explains how the variables clearly influence CVD.

In this study, the IO and MO factors were added to the models by using the Baron and Kenny (1986) and Frazier *et al.* (2004) method to carry out a hierarchical multiple regression equation via SPSS. There are four steps recommended by Baron and Kenny (1986) and Frazier *et al.* (2004) to investigate the moderating effects. Those steps are:

(1) investigating the effect of control variable on dependent variable;

(2) adding the independent variables to the equation, and then investigating the effects on dependent variable;

(3) adding the moderating variable to the equation then investigating the effects on dependent variable; and

(4) adding the interaction term variable to the equation then investigating the effects on dependent variable.

Based on the previous steps, the structural equations of the six models are as follows:

Step1, $CVD_{it} = \beta_0 + \beta_1 SIZE_{it} + \beta_2 BV/MV_{it} + \beta_3 LEV_{it} + \beta_4 ROA_{it} + \varepsilon_{it}$

Step2 $CVD_{it} = \beta_0 + \beta_1 SIZE_{it} + \beta_2 BV/MV_{it} + \beta_3 LEV_{it} + \beta_4 ROA_{it} + \beta_5 EMDA_{it} + \beta_6 EP_{it} + \beta_7 ES_{it} + \varepsilon_{it}$

Step3, (a) $CVD_{it} = \beta_0 + \beta_1 SIZE_{it} + \beta_2 BV/MV_{it} + \beta_3 LEV_{it} + \beta_4 ROA_{it} + \beta_5 EMDA_{it} + \beta_6 EP_{it} + \beta_7 ES_{it} + \beta_8 MO_{it} + \varepsilon_{it}$

$$\text{Step3, (b)}\ CVD_{it} = \beta_0 + \beta_1 SIZE_{it} + \beta_2 BV/MV_{it} + \beta_3 LEV_{it} + \beta_4 ROA_{it} + \beta_5 EMDA_{it} + \beta_6 EP_{it} + \beta_7 ES_{it} + \beta_8 IO_{it} + \varepsilon_{it}$$

$$\text{Step4, (a)}\ CVD_{it} = \beta_0 + \beta_1 SIZE_{it} + \beta_2 BV/MV_{it} + \beta_3 LEV_{it} + \beta_4 ROA_{it} + \beta_5 EMDA_{it} + \beta_6 EP_{it} + \beta_7 ES_{it} + \beta_8 MO_{it} + \beta_9 EMDA * MO_{it} + \beta_{10} EP{*}MO_{it} + \beta_{11} ES{*}MO_{it} + \varepsilon_{it}$$

$$\text{Step4, (b)}\ CVD_{it} = \beta_0 + \beta_1 SIZE_{it} + \beta_2 BV/MV_{it} + \beta_3 LEV_{it} + \beta_4 ROA_{it} + \beta_5 EMDA_{it} + \beta_6 EP_{it} + \beta_7 ES_{it} + \beta_8 IO_{it} + \beta_9 EMDA * IO_{it} + \beta_{10} EP * IO_{it} + \beta_{11} ES{*}IO_{it} + \varepsilon_{it}$$

where:

CVD_{it} = the dependent variable (voluntary disclosure) of sample firm i at year t;
$SIZE_{it}$ = log of total assets for sample firm i at year t;
BV/MV_{it} = book-to-market ratio for sample firm i at year t;
LEV_{it} = leverage, debt-to-equity ratio for sample firm i at year t;
ROA_{it} = return on total assets for sample firm i at year t;
$EMDA_{it}$ = EM (discretionary accruals) for sample firm i at year t;
EP_{it} = EP for sample firm i at year t;
ES_{it} = ES for sample firm i at year t;
MO_{it} = managerial ownership for sample firm i at year t; and
IO_{it} = institutional ownership for sample firm i at year t.

4. Results and discussion

4.1 Descriptive statistics

Table I presents the descriptive statistics for the independent, moderating variables and the control variables. Table I reports the mean value of EMDA, which is measured through the regression of the modified Jones model, as 0.019, which is similar to findings of prior studies such as 0.04 for Sun *et al.* (2010) and 0.01 for Cormier *et al.* (2012).

For each firm-year, this study estimates the slope-coefficient of the EP. The descriptive statistics in Table I for the EP showed a mean of 0.124. Values of EP close to one (or greater than one) indicate high persistent earnings whilst values close to zero imply highly transitory earnings. Persistent earnings are viewed as a positive quality, whereas transitory earnings are viewed as a negative quality. A possible explanation to the low value of EP could be because of the impact of oil prices and the general crisis of 2012 on a company's performance.

Table I.
Descriptive statistics of variables

Variable Name	Minimum	Maximum	Mean	SD
CVD	0.257	0.838	0.438	0.106
EMDA	−0.299	0.602	0.019	0.106
EP	−7.968	4.027	0.124	0.863
ES	0.017	15.75	1.209	1.827
MO	0.000	0.638	0.081	0.127
IO	0.014	0.88	0.472	0.188
SIZE	3.934	7.354	5.631	0.617
BV/MV	−0.903	0.053	0.008	0.011
ROA	−0.596	0.576	0.041	0.096
LEV	−0.637	5.415	0.496	0.751

The results also showed that the mean of ES was 1.209. The maximum and minimum of the ES were 15.75 and 0.017, respectively. Calculated ratios of greater than of one indicate more variability in operating cash flows relative to the variability of earnings, which implies the use of accruals to smoothen the earnings. Thus, large (small) values of the smooth earnings indicate more (less) ES and low (high) EQ. In general, the result of mean ES is comparable with the findings of prior studies such as 1.424 for Lang *et al.* (2006).

According to moderating variables, the results showed that the maximum and minimum of MO are 63.8 and 0.0 per cent, respectively. The values are completely true because the insiders of some companies have no shears; therefore, the minimum value is zero. Despite that most companies have MO, the portion of management shares still low, where the mean of MO is 8 per cent.

Table I showed that the mean of IO is 47.2 per cent. This means that a large number of the shares of the company in the hands of few stockholders. This result asserts the previous results such as Claessens and Fan (2002), the OS in MLC is highly concentrated. By holding big portions of the financial capital of many large companies, IO will actively influence the strategic policies in the case in which the management is not practicing what these shareholders expect.

4.2 Correlation of variables

Table II presents the Pearson correlations between the transformed dependent, independent and control variables. The table shows that CVD was significantly negatively related to EMDA. The coefficient of Pearson correlation (−0.148) was significantly at ($p = 0.011$).The negative signs indicate that the relationship is complementary in nature (Francis *et al.*, 2008). Furthermore, the results asserted that CVD was positively related to EP (Pearson correlation 0.219, $p = 0.000$). Despite the fact that ES is an important proxy to measure EQ, the results showed that no relationships existed between CVD.

	CDA	EMDA	EP	ES	SIZE	BV/MV	LEV	ROA	MO	IO
CVD	1									
EMDA	−0.148**	1								
	0.011									
EP	0.219**	−0.022	1							
	0.000	0.709								
ES	−0.042	−0.037	−0.140*	1						
	0.473	0.531	0.015							
SIZE	0.399**	−0.001	0.158**	−0.079	1					
	0.000	0.984	0.007	0.173						
BV/MV	−0.372**	0.062	−0.139*	−0.150**	−0.469**	1				
	0.000	0.286	0.016	0.009	0.000					
LEV	0.139*	0.052	0.041	−0.175**	0.345**	−0.031	1			
	0.017	0.372	0.482	0.003	0.000	0.596				
ROA	0.078	0.318**	0.021	−0.082	0.203**	−0.167**	−0.107	1		
	0.180	0.000	0.724	0.157	0.000	0.004	0.065			
MO	−0.152**	0.055	−0.036	−0.052	−0.190**	0.035	−0.047	0.061	1	
	0.000	0.345	0.532	0.365	0.001	0.544	0.422	0.289		
IO	0.158**	−0.049	0.056	−0.86	0.166**	−0.043	−0.014	0.128*	−0.149**	1
	0.006	0.395	0.335	0.138	0.004	0.454	0.815	0.027	0.010	

Notes: *Significant at the 0.05 level (two-tailed); **significant at the 0.01 level (two-tailed)

Table II.
Pearson correlation

According to OS results, the findings showed that CVD is negatively correlated with MO (-0.152) at significant level $p < 0.01$. These results are similar to that of Rouf and Al Harun (2011). To explain the reason behind the negative relationship between the MO and the CVD could be define by the managers' interests with shareholders. Therefore, the mangers do not prefer to disclose more information.

On the other hand, the level of CVD showed the moderate positive correlation with the IO (0.158) at a significant level of $p < 0.01$ while assessing with two-tailed test. The positive relationship is completely true because the IO owns large shares; thereby they have more power to interfere in CVD practices. Moreover, these results were similar and in correspondence with the findings of Rouf and Al Harun (2011).

CVD was also correlated with the control variables. As such, companies with larger assets have higher incentives to reveal CVD. Leveraged companies had a significant positive correlation with the CVD. The Pearson correlations analysis further revealed that a significant, negative correlation existed between CVDs and book to market values. Furthermore, return on assets was not significantly related with CVD.

4.3 Regression analyses

Table III presents the results of impact the MO as a moderating variable from the estimation of the equation, which carried out according to Baron and Kenny (1986) Frazier *et al.* (2004) steps. The first step in the table III shows that the adjusted R^2 is 19.4 per cent. This means that 19.4 per cent of CVD level can be illuminated by the variations in the control variables. The results of the second step show that the adjusted R^2 increased to 22.6 per cent. This increased of adjusted R^2 is conceded significant. In step number 3, the results after adding the MO as a moderating variable show that the moderating variable effects on CVD, where

	Step 1		Step 2		Step 3		Step 4	
Variables	B	Sig.	B	Sig.	B	Sig.	B	Sig.
Controls V								
SIZE	3.347***	0.000	2.976***	0.000	2. 519***	0.002	2.318***	0.004
BV/MV	−1.840***	0.000	−1.701***	0.000	−1.765***	0.000	−1.741***	0.000
ROA	0.266	0.545	0.367	0.403	0.478	0.275	0.492	0.258
LEV	−0.112	0.784	0.278	0.519	0.376	0.381	0.402	0.345
Indep V								
EMDA			−10.219***	0.008	−9.776***	0.01	−9.671**	0.011
EP			1.041***	0.009	1.078***	0.006	1.155***	0.004
ES			−0.232	0.567	−0.333	0.411	−0.296	0.464
Moderating								
MO					−1.049**	0.013	−1.304***	0.003
Interaction term								
MO*EMDA							8.774**	0.048
MO*EP							−0.655	0.121
MO*ES							0.631	0.143
R^2	0.205		0.245		0.261		0.28	
Adjust R^2	0.194		0.226		0.24		0.252	
R^2 change	0.205		0.04		0.016		0.013	

Table III.
Hierarchical regression analysis – managerial ownership

Notes: *Significant at the 0.10 level (two-tailed); **significant at the 0.05 level (two two-tailed); *** significant at the 0.01 level (two-tailed)

R^2 is 26.1 per cent. Furthermore, the findings provide evident that the MO have significant power to decrease the level of information in annual report. The result of the final step (adding the interaction terms) shows that the adjusted R^2 increased from 24.0 per cent to 25.2 per cent, and the change of R^2 is significant. This indicates that the MO moderates on the relationship between CVD and EQ.

The results of moderating variable in Step 3 show that the main effect of MO on CVD level is significant, indicating that MO significantly lead to a decreased level of CVD. Rouf and Al Harun (2011) mentioned that the agency conflict will fade if the management members have a portion of the shares, this in turn will cause the managers' interests to be in line with shareholders. Therefore, managers may not have incentives to reveal CVD because of existing shares, for managers will assert that management works for the shareholders' interests (Lakhal, 2005). This results in line with a majority of researchers findings, such as Eng and Mak (2003), Nurleni *et al.* (2018) and Ruland *et al.* (1990), that is less proportion of MO relates to better disclosure.

The results in Step 4 in Table III explain that the interaction term between EMDA and MO will affect CVD, where the coefficients for the interaction term EMDA*MO was positive (coefficient = 8.774). The positive coefficient of EMDA*MO indicates that high MO in companies with poor EQ (high EM) have the incentive to reveal more CVD. Therefore, MO stimulates on increasing CVD in poor EQ companies to decrease information asymmetry between insiders and outsiders as well as improve shareholders' information environment. This matches with Francis *et al.* (2008); there is substitutive relationship between the level of CVD and EQ.

EP has a positive and significant impact on the level of CVD. However, when EP interacts with MO, the association becomes insignificant. Correspondingly, the results suggest that the EP has no role to play in enhancing MO in performing its role over controlling CVD practices.

Some prior studies such as Sun *et al.* (2010) mentioned that perhaps the relationship between the two variables becomes more effective when using an interaction term; however, this study found that the interact the MO and ES was not related with CVD. The reason for that could because various transitory fluctuations are present in earnings, and this indicates that managers in MLC do not use discretionary accruals to smoothen out the transitory fluctuations and thereby achieve better representation.

According to Mak and Li (2001), the increasing the percentage of equity owned by the mangers will create new means for them to achieve their interests. Consequently, managers may manipulate earnings through discretionary accruals, but they cannot manipulate EP or ES. This explain the significantly effect of interaction between EMDA and MO, and the insignificant effect of interaction between EP, ES and MO.

Table IV shows the results of hierarchical regression analysis for the impact the IO as a moderating variable on the relationship between EQ and CVD. The results in Step 3, by adding the IO as a moderating variable, show that the adjusted R^2 increased from 22.6 per cent (in step 2) to 23.3 per cent (in Step 3). In addition, when the interaction is included in the regression model, the R^2 increased to become 26.6 per cent. This means that the IO moderates the relationship between EQ and CVD.

The results of examining the impact of interaction terms on the relationship show that two interaction terms out of three are negatively and significantly associated with CVD. The negative sign for coefficient of IO*EP and IO*ES indicates that companies which have high EP and ES with high IO disclose a low level of CVD. To explain the reason behind the negative impact, the speculation could be the IO impact on management practices to achieve their interests regarding EP and ES rather than anything else, as well as they can use their

Variables	Step 1 B	Sig.	Step 2 B	Sig.	Step 3 B	Sig.	Step 4 B	Sig.
Controls V								
SIZE	3.347***	0.000	2.976***	0.000	2.753***	0.001	2.807***	0.000
BV/MV	−1.840***	0.000	−1.701***	0.000	−1.731***	0.000	−1.724***	0.000
ROA	0.266	0.545	0.367	0.403	0.445	0.311	0.471	0.283
LEV	−0.112	0.784	0.278	0.519	0.170	0.694	0.165	0.702
Indep V								
EMDA			−10.219***	0.008	−9.599**	0.012	−9.523**	0.015
EP			1.041***	0.009	0.965**	0.015	1.001**	0.012
ES			−0.232	0.567	−0.252	0.534	−0.287	0.480
Moderating								
IO					0.729*	0.069	0.698*	0.083
Interaction term								
IO *EMDA							−1.402	0.732
IO *EP							−0.703*	0.109
IO *ES							−0.648*	0.080
R^2	0.205		0.245		0.253		0.266	
Adjust R^2	0.194		0.226		0.233		0.238	
R^2 change	0.205		0.04		0.009		0.013	

Notes: *Significant at the 0.10 level (two-tailed); **significant at the 0.05 level (two-tailed); *** significant at the 0.01 level (two-tailed)

Table IV. Hierarchical regression analysis – institutional ownership

power to know more information rather than other shareholders; therefore, they pressure on management to decrease the expenses of disclosing more information.

This study provides evidence of the importance of considering the interaction and joint effect of ES and IO variables on CVD. The results in Steps 2 and 3 show that ES is not related with CVD, but there is significant impact on CVD information when ES interact with IO.

The interaction term between IO and EMDA did not have a significant effect on CVD. The reason behind this might be that a high concentration of IO will increase the monitoring of managerial behavior, especially, because they can access all information. Thereby, the management either discloses more information to show that they work for shareholder's interests, or does not disclose because IO observes their activities.

4.4 Additional empirical analyses

Tables V and VI present the results of the regression of the impact of the IO and MO on the relationship between the three proxies of EQ and three types of CVD (strategic, financial and non-financial information).

In general, management puts strategies and plans for the long-term after gaining approval from shareholders, but the result that MO tend to not disclose strategic information because this information will be an obligation that must be carried out in the future. Thus, managers may not get a larger bonus or higher compensation in instances in which they did not achieve the targets of those strategies and plans. Therefore, MO is likely to not disclose strategic information especially after the failures that happened to big companies around the world.

Variables	Strategic information Step 3	Strategic information Step 4	Financial information Step 3	Financial information Step 4	Non-financial information Step 3	Non-financial information Step 4
Controls V						
SIZE	0.670**	0.632**	1.673***	1.559***	0.177	0.127
BV/MV	−0.532***	−0.548***	−0.552**	−0.558**	−0.680***	−0.635***
ROA	0.347**	0.344*	−0.181	−0.181	0.312	0.329*
LEV	0.141	0.152	−0.015	0.003	0.250	0.247
Indep V						
EMDA	−3.463**	−3.456**	−1.632	−1.564	−4.681***	−4.651***
EP	0.468***	0.465***	0.324	0.358*	0.286*	0.332*
ES	−0.082	−0.089	0.016	0.023	−0.266	−0.230
Moderating						
MO	−0.318**	−0.364**	−0.231	−0.367	−0.501***	−0.573***
Interaction term						
MO *EMDA		2.487		5.007**		1.279
MO *EP		−0.021		−0.309		−0.325*
MO *ES		0.042		0.242		0.347*
R^2	0.210	0.216	0.159	0.178	0.159	0.179
Adjust R^2	0.188	0.186	0.136	0.147	0.136	0.147

Notes: *Significant at the 0.10 level (two-tailed); **significant at the 0.05 level (two-tailed); ***significant at the 0.01 level (two-tailed)

Table V. Hierarchical regression analysis – managerial ownership and types of CVD

Despite the fact that neither EQ nor MO had a relationship with financial information in Table V, the interaction between EQ and MO influenced financial information. It seems that MO stimulates the increase of financial information in poor EQ companies to decrease information asymmetry between insiders and outsiders, as well as improve the information environment of shareholders' substitutive relationship.

In addition, this result indicates that the MO moderates the relationship between non-financial information and EQ. This means that a high number of MO in company with EP or ES leads to impact in the disclosure of non-financial information.

As reported in Table VI, IO only focuses on social and environmental information. It seems that the Malaysian mandatory requirements for financial information are enough to give a full picture of company performance. Moreover, IO generally observes management practices, and they have the power to obtain any information they need, especially for short term; therefore, both EQ and IO did not affect financial and strategic information.

Conclusions

This study illustrates the level of CVD, the impact of three proxies of EQ (EMDA, EP, ES) on CVD. The present findings generally show that the level of CVD amongst MLC ranged from 26 per cent to 84 per cent. It also shows that the EQ was statistically significant in explaining the level of CVD. Particularly, this study provides evidence that companies with high EP are likely to reveal CVD, and companies that are less engaged in EM are likely to disclose information voluntarily. These results support the argument that says "increasing information quality creates motives for managers to disclose more information". According to this argument, the relationship between EQ and CVD is complementary or positive,

Variables	Strategic information Step 3	Strategic information Step 4	Financial information Step 3	Financial information Step 4	Non-financial information Step 3	Non-financial information Step 4
Controls V						
SIZE	0.775***	0.786***	1.669***	1.687***	0.308	0.335
BV/MV	−0.517***	−0.505***	−0.552**	−0.557**	−0.661**	−0.662**
ROA	0.325*	0.319*	−0.169	−0.152	0.290	0.303
LEV	0.095	0.096	−0.087	−0.091	0.161	0.161
Indep V						
EMDA	−3.507**	−3.107**	−1.441	−1.760	−4.651**	−4.656**
EP	0.445***	0.445***	0.281	0.299	0.239	0.256
ES	−0.055	−0.084	0.029	0.033	−0.226	−0.236
Moderating						
IO	0.106	0.107	0.340	0.328	0.283	0.263
Interaction term						
IO * EMDA		1.462		−2.024		−0.841
IO * EP		−0.050		−0.281		−0.372*
IO * ES		−0.209		−0.159		−0.280*
R^2	0.200	0.209	0.164	0.172	0.145	0.163
Adjust R^2	0.178	0.178	0.140	0.140	0.121	0.131

Notes: *Significant at the 0.10 level (two-tailed), **significant at the 0.05 level (two-tailed), ***significant at the 0.01 level (two-tailed)

Table VI. Hierarchical regression analysis – institutional ownership and types of CVD

whereby companies that have poor (good) EQ will disclose less (more) expansive information because stakeholders will treat such information as less (more) credible.

In addition, this study uses IO and MO as moderating variables to measure the impact of OS on the relationship between the CVD and the EQ. Particularly, IO has a significant impact as a moderating variable on the relationship between EQ and CVD. It was also found that the MO significantly affected the relationship between EQ and CVD. Hence, it was clear through this work that the interaction term might affect the relationship between two variables. This result asserts that ownership concentration level plays a main role to influence firm processes and procedures such as disclosure.

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