

Has The Board Been Effective Enough to Look After The Earnings Manipulation Exercise?

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ABSTRACT

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This study generally aims to see how effectively the board monitors the earnings manipulation activity. Thus, this study examines the relationship between board characteristics (board independence, meeting, size, and CEO duality) on earnings manipulation activity. Earnings manipulation is measured by using the Beneish profit model. This study obtained data from 372 public listed companies in Malaysia from 2010 to 2013. The result of this study finds that board independence, board meeting, and board size have negative and significant relationships with earnings manipulation. The results imply that more independent directors, more frequent board meeting, and greater board size could reduce the tendency of earnings manipulation.

JEL Classification: D81, G32

Keywords: Board monitoring, Board effectiveness, Earnings manipulation

INTRODUCTION

Earnings are extensively played as key performance measures, which help financial analysts to enhance their ability to forecast future earnings as well as to form their value estimation (Kazemian and Mohd-Sanusi, 2015). It is often overlooked by financial statement users to measure a company's financial health and to determine a firm's value. However, due to the

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nature of earnings which could be ill-defined, firms have the flexibility to choose accounting techniques in order to create a congruence between their firm's ability and the current economic situation (Bepari, Rahman, & Mollik, 2013). This flexibility has allowed the firm to change accounting transactions to meet and affect the level of income at particular times with the objective of securing gains for the management and stakeholders. This action is the essence of earnings management, which is the ability to "manipulate" the choices available and to make the right choices that can achieve a desired level of income (Goel, 2014).

The quality of financial information is always questionable when earnings are often manipulated by firms. Radzi, Islam, and Ibrahim (2011) posited that earnings figure is subject to manipulation and thus decreases its reliability and usefulness in the valuation process. According to Akers, Giacomino, and Bellovary (2007), earnings quality could be defined as the ability of reported earnings to reflect the company's true earnings, as well as the usefulness of reported earnings to predict future earnings. Higher quality of earnings provides more information about the features of the firm's financial performance that are relevant to a specific decision made by a specific decision maker (Dechow, Ge, & Schrand, 2010). Thus, earnings quality would portray stability, persistence, and lack of variability of reported earnings (Akers *et al.*, 2007). Besides, earnings quality also depends on the clarity and accuracy of the reported earnings.

Earnings manipulation is a range of earnings fraud and earnings management. Earnings fraud is clearly verified to violate GAAP, and earnings management is permitted by GAAP with a specific requirement. Even in the absence of fraudulent reporting, firms can manipulate reported earnings because GAAP allows alternative representations of accounting events (Parka & Shin, 2004). Beneish (2001) explained that earnings manipulation is the process of taking deliberate steps within the constraint of generally accepted accounting principles (GAAP) to bring out the desired level of reported earnings. Consequently, when a firm manipulates its earnings to match a pre-determined target, which does not portray its actual financial information, this actually affects its long-run performance because the decision made is inaccurate and it is harmful to the firm's performance in the future.

Earnings could be manipulated by several means. According to Sun and Rath (2010), the most common method of earnings manipulation among managers in 1970s and early 1980s is through the exercise of discretionary choice of accounting method or policies since managers are free to use any specific accounting policies to reflect its earnings such as inventory valuation, depreciation methods or treatment of bad debt provision. However, these exercises lead to earnings manipulation. This phenomenon is consistent with the positive accounting theory, which suggests that the selection of accounting policies among managers may lead to the maximization of their personal wealth (Sun & Rath, 2010).

Despite the accounting policy sturdiness revolution, the issue of earnings manipulation is never silent and even more techniques have been applied to manipulate the earnings. Such techniques include income-smoothing, cookie jar reserve, and big bath. Even though earnings manipulation techniques are permitted by the Generally Accepted Accounting Principle (GAAP) with a specific requirement, the selection and application process provides opportunity for earnings manipulation.

On the other hand, the collapse of some large companies resulting partially from accounting

manipulation has created an argument in terms of the effectiveness of different monitoring devices toward investor protection and control of opportunistic behaviour (Ebrahim, 2007). These monitoring devices are related to the corporate governance mechanism. Corporate governance is a prominent mechanism in monitoring business activities. It is not merely about accountability because if properly directed and managed, the best practices of corporate governance should contribute to business propensity and ultimately enhance shareholder value through the application of good practices of business, effective and efficient use of resources, safeguarding assets, and the protection of rights of all stakeholders (Abidin & Hashim, 2010). A weak governance structure may provide an opportunity for managers to engage in unethical behaviour that results in a lower quality of reported earnings, which is a strong indication of a serious violation in business ethics (Gonzalez & Garcia-Meca, 2014). Therefore, effective corporate governance plays a key role in mitigating earnings manipulation and directly enhances the investors' confidence and attracts global capital. This is consistent with the claim made by Gompers, Ishii, and Metrick (2003), which stated that corporate governance is able to enhance the efficiency of contracts and at the same time reduce agency problems.

Under Corporate Governance mechanisms, board of directors is considered the central point in providing effective monitoring over a company's financial reporting system to the stakeholders (Mansor, Che-Ahmad, Ahmad-Zaluki, & Osman, 2013). It remains a potential monitoring mechanism designed to mitigate the inherent agency problem and earnings manipulation. Therefore, this monitoring mechanism depends on the factors that are known as board dynamics consisting of board independence, board meeting, board size, and board duality. An active board dynamic can result in a higher earnings manipulation and lower earnings manipulation. The effectiveness of discharging the roles and responsibilities of the board of director would constitute an effective board of directors.

The relationship between boards of directors and earnings manipulation has been discussed by many researchers. Epps and Ismail (2009) stated that a board will constrain opportunistic earnings manipulation activities. Moreover, a board of directors is considered the central point that is responsible for ensuring the transparency of the company's financial statement and hence useful to the stakeholders (Mansor *et al.*, 2013). Thus, this study aims to investigate the relationship between board dynamics and earnings manipulation by using the Beneish Profit model in the Malaysian context.

This paper consists of five related sections. Following this introduction, next section discusses the review of literature as well as development of hypothesis. While further section highlights the methodology matters including sampling and other research specifications, the next section discusses the research findings and results. Finally the last section summarise the entire paper.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Board is the highest governing body in the company, which is responsible for all aspects of the company's activities. Board consists of executive and non-executive directors elected by shareholders in the annual meeting. The executive directors refer to the full time employees of

the company who are responsible for managing and overseeing the day to day running of the company while the non-executive directors typically do not engage in day to day management activities, but are involved in policy making and planning exercise (Abdul Rahman & Salim, 2010). In other words, executive directors refer to dependent directors while non-executive directors refer to independent directors.

The Portuguese Securities Market Supervisory Authority has adopted the recommendation that board members must be of a plural nature consisting of a sufficient number of non-executive directors (independent) and executive directors (dependent) to secure effective corporate governance practices. However, the decision on how adequate independent and dependent directors are in ensuring effective monitoring activity is still questionable among many scholars.

According to Fama and Jensen (1983), independent directors are expected to reduce possible collusion with top management and more generally to mitigate the agency problem. It is because, independent directors have the ability to withstand pressure from the firm to manipulate earnings and are better able to monitor the earnings process (Alves, 2011). This is consistent with the agency theory, which suggests that outside members (independent directors) are able to give an effective monitoring function. In addition, Shah, Nousheen, and Tahir (2009) documented that independent directors are dedicated to monitoring the management's performance and behaviour. Moreover, independent directors have the potential to detect earnings manipulation and to monitor the corporate financial accounting process (Peasnell, Pope, & Young, 2005). In contrast, Wang (2007) found that independent directors have not performed an efficient role in China. This is consistent with the study by Sarkar, Sarkar, and Sen (2006), who also found that independent directors do not reduce absolute discretionary accruals.

Most of the prior studies have documented a negative relationship between the presence of outside directors and the occurrence of fraudulent financial statements or earnings manipulation. According to Marra, Mazzola, and Prencipe (2011), earnings manipulation is reduced when there is more independent directors. It is supported by Bartov and Mohanram (2004) and Sarkar *et al.* (2006), who conclude that the less independent the board is, the higher the possibility of earnings manipulation.

In addition, the study by Klein in 2002 on the effectiveness of the audit committee and the board of director characteristics towards earnings manipulation with the sample of 692 firms for one-year observation from 1992 until 1993 in United States, also found that there is a negative relationship between board independence and abnormal accrual. This result is consistent with Alves (2011) and Alzoubi and Selamat (2012) who documented board independence to be negatively related to earnings manipulation.

However, Parka and Shin (2004) and Soliman and Ragab (2013) documented that board independence is positively related to earnings manipulation in Canada and Egypt due to poor outside director governance and dominance of family-firms. Despite these mixed findings served by prior researchers, board independence is still vital as it offers the best corporate governance monitoring tool and therefore the independence of the board is believed to mitigate the practice of earnings manipulation. Thus, the following hypothesis is proposed:

H1: There is a significant and negative relationship between board independence and earnings manipulation

Another board monitoring attribute relates to the number of board meetings held since an active board is assumed as an effective characteristic in monitoring management activities because they spend more time and energy on the company affairs. Besides that, it is generally believed that a more active board is better for shareholder interest (Kazemian and Mohd-Sanusi, 2015)

According to Lipton and Lorsch (1992), more board meetings will improve the efficiency of the board. Meeting is the key dimension of board attributes and an indicator of the board's effort in dealing with the company's affairs, thus showing its enthusiasm to perform its duties, which are consistent with the interests of shareholders. Vafeas (1999) found that the more frequent the board meeting, the lower the degree of earnings manipulation and the more transparent the corporate financial information. Xie, Davidson, and DaDalt (2003) suggested that board meeting is an important factor to restrict earnings manipulation activities of managers. Critical problems can be addressed timely when meetings are frequently held by the directors Mangena and Taurigana (2008). In addition, Gulzar and Wang (2011) found that the more frequent meetings are conducted, the greater the monitoring, and the lesser the earnings manipulation activity. Abu Siam, Laili, and Khairi (2014) also suggested that the degree of board interaction and activities has an influence on earnings manipulation.

However, too frequent board meetings could also lead to poor management. As affirmed by Lorca, Sanchez-Ballesta, and Garcia-Meca (2011), a time-consuming board meeting will make directors exhausted, which in turn will prevent them from giving a thoughtful idea, and thus, no matter how frequent the meetings, earnings management will not be impressed. Metawee (2013) documented that board meetings have a positive relationship with earnings manipulation, which shows that a high frequency of board meeting is unable to mitigate earnings manipulation activities.

Although prior researchers have found mixed findings on board meeting towards earnings manipulation, active boards, which imply higher frequency of meetings, seem to better highlight and discover any firms' problems. Therefore, this study proposes the following hypothesis:

H2: There is a significant and negative relationship between board meeting and earnings manipulation

Board size or numbers of board members is another important factor to contribute to an effective monitoring function. Most of the companies have different sizes of boards depending on their business requirement. Bradbury, Mak, and Tan (2006) documented that a large board size reduces the level of earnings manipulation. Ahmed, Hossain, and Adams (2006) also posited that board size is negatively related to earnings manipulation because a large board size reduces the information content of incomes and intensifies the earnings manipulation for New Zealand firms. Yu (2008) found that small boards tend to fail in detecting earnings manipulation. Additionally, a larger board would obscure the CEO's incentive to influence or take advantage that would harm the shareholders' interest. Soliman and Ragab (2013) who studied the association of board of director's characteristics and earnings manipulation in Egypt, found a negative relation between board size and earnings manipulation. According to Abu Siam *et al.* (2014), larger boards are associated with lower levels of discretionary accruals. Typically, larger boards increase the board monitoring capacity because they have more expertise and skill diversity.

On the contrary, Jensen (1993) argued that smaller boards are more effective in monitoring CEO's activities because it reduces the possibility of free riding and increases the accountability of each director. Similarly, Alonso, Palenzuela, and Iturriaga (2000) in their study provided the evidence that indicates that a larger board exhibits poorer coordination and communication among directors and thus results in the occurrence of earnings manipulation. This shows that large boards provide less effective coordination, communication and decision making, and are more likely to be controlled by the manager (Alves, 2011).

The previous study of board size on earnings manipulation has given mixed results. It is also generally convinced that there has not yet been any agreement about the optimal size of a board structure (Kouki, Elkhaldi, & Souid, 2011). However, larger board sizes are more likely to have more expertise and diversity that can increase board monitoring efficiency. Hence, the proposed hypothesis is developed:

H3: There is a significant and negative relationship between board size and earnings manipulation

Board duality refers to the situation when the CEO also holds the position of the chairman of the board. Beasley (1996) pointed out that when the chairman is controlled by the CEO, it would lead to power concentration and conflict of interests, thus undermining the board's monitoring function. With regards to this problem, it can be generalized that the weaknesses of board duality will contribute to the essence of earnings manipulation activities. Ho and Shun Wong (2001) and Eng and Mak (2003) also found a negative relationship between board duality and earnings manipulation because firms in which the CEO is also the chairman showed over-statement of fraud.

CEO is a full-time organizational post responsible for a corporation's administrative operations while the chairman is responsible for supervision and assessment of executives including the CEO (Weir & Laing, 2001). Moreover, Joubert and Fakhfakh (2011) also supported the fact that a dual leadership structure would reduce board independence and impair a CEO's monitoring. In addition, Soliman and Ragab (2013) claimed that the board may not be effective and independent when the chairman is also the CEO because the board would face difficulties in carrying out its monitoring function.

However, Anderson, Mansi, and Reeb (2004) postulated that the separation between CEO and chairman leads to a positive influence of the information content of accounting earnings. This positive relationship is also supported by Hashim and Devi (2008) in their study in the Malaysian context which found that the separation of role between chairman and CEO, as recommended by the MCCG 2000, does not reduce the incidence of earnings manipulation. A same person serving for both posts will offer a better understanding and knowledge of a firm's operation and environment (Joubert & Fakhfakh, 2011).

The debate of board duality is about the balance of power towards a powerful board of directors. Hence, the proposed hypothesis is developed:

H4: There is a significant and positive relationship between board duality and earnings manipulation

RESEARCH METHODOLOGY

The population of this study is 922 public listed companies taken from Bursa Malaysia Board from year 2010 to 2013. From this population, a sample was drawn by excluding all the finance and bank institutional companies due to the differences of the unique characteristics and compliance and regulatory environment. The sample selection of this study consists of nine industries chosen by a random sampling approach. The sample firms encompass construction and material (93 companies), electronic and electrical equipment (32 companies), general industrials (26 companies), industrial engineering (52 companies), household goods and home construction (30 companies), industrial metal and mining (26 companies), industrial transportation (24 companies), software and computer services (50 companies), and consumer product (39 companies) sectors. 59 companies from the total population had to be excluded due to incomplete data retrieved from Data Stream as at 1st March 2014. The final sample therefore consists of 372 companies for four consecutive years from 2010 to 2013, with 1488 firm-year observations.

This study uses the Beneish model to detect earnings manipulation because this model permits reliable and conclusive inferences across many variables. The variables of this model are the combination of accruals and financial ratios. The probability of manipulation index is denoted by Mscore. If the Mscore is greater than -2.22, it indicates that the sample has a high probability of earnings manipulation.

$$\text{Manipulation index (Mscore)} = -4.84 + 0.92 \text{ DSRI} + 0.528 \text{ GMI} + 0.404 \text{ AQI} + 0.892 \text{ SGI} + 0.115 \text{ DEPI} - 0.172 \text{ SGAI} + 4.679 \text{ TATA} - 0.327 \text{ LVGI}$$

where,

DSRI = Days' sales in receivable index; GMI = Gross margin index; AQI = Asset quality index; SGI = Sales growth index; DEPI = Depreciation index; SGAI = Sales and general and administrative expenses index; TATA = Total accruals to total assets; LVGI = Leverage index.

Besides the independent variables, leverage, growth, profitability (ROI), and sample companies' size (Market Capital) are controlled in the final research model.

Measurement of Independent Variables:

Days Sales in Receivables Index (DSRI) = $(\text{Receivables}_t / \text{Sales}_t) / (\text{Receivables}_{t-1} / \text{Sales}_{t-1})$; Gross Margin Index (GMI) = $[(\text{Sales}_{t-1} - \text{cost of Goods Sold}_{t-1}) / \text{Sales}_{t-1}] / [(\text{Sales}_t - \text{cost of Goods Sold}_t) / \text{Sales}_t]$; Asset Quality Index (AQI) = $[[1 - (\text{current assets}_t + \text{Net fixed assets}_t) / \text{Total assets}_t]] / [1 - (\text{current assets}_{t-1} + \text{Net fixed assets}_{t-1}) / \text{Total assets}_{t-1}]$; Sales Growth Index (SGI) = $\text{Sales}_t / \text{Sales}_{t-1}$; Depreciation Index (DEPI) = $[(\text{Depreciation}_{t-1} / (\text{Depreciation}_t + \text{PPE}_{t-1})) / ((\text{Depreciation}_t / \text{Depreciation}_t + \text{PPE}_t))]$; Sales, General and Administrative Expenses Index (SGAI) = $(\text{SG \& A Expenses}_t / \text{Sales}_t) / (\text{SG \& A Expenses}_{t-1} / \text{Sales}_{t-1})$; Total Accruals to Total Assets (TATA) = $(\text{changes in working capital} - \text{changes in cash} - \text{Depreciation}) / \text{Total assets}_t$; Leverage Index (LVI) = $[(\text{Long term Debt}_t - \text{Current Liabilities}_t) / \text{Total assets}_t] / [(\text{Long term Debt}_{t-1} - \text{Current Liabilities}_{t-1}) / \text{Total assets}_{t-1}]$

Measurement of Hypothesis & Control Variables:

Board Independence (BIND) = Measured by percentage of total number of board independence to total number of board; Board Meeting (BMEET) = Measured by total number of meeting held during a year; Board Size (BSIZE) = Measured by total number of board members; Board Duality (BDUAL) = Value of 1 if board duality and 0 if non-board duality; Firm size (SIZE) = Log of market capitalization; Industry (IND) = Dummy variable, 1 if public listed companies that fall under either one of the industry, Leverage (LEV) = Measured by total debt over total asset, Growth (GROW) = Measured by $Sales_t - Sales_{t-1} / Sales_{t-1}$, Return on Income (ROI) = Measured by net income/investment; Market Capital (MCAP) = Measured by no. of shares/outstanding shares and ε = error term.

Therefore, the following model is used to test the hypotheses.

$$EM = \beta_0 + \beta_1 BIND + \beta_2 BMEET + \beta_3 BSIZE + \beta_4 BDUAL + \beta_5 SIZE + \beta_6 IND + \beta_7 LEV + \beta_8 GROW + \beta_9 ROI + \beta_{10} MCAP + \varepsilon$$

where,

EM = Earnings Manipulation; β_0 = Intercept coefficient; BIND = Board Independence; BMEET = Board Meeting; BSIZE = Board Size; BDUAL = Board Duality; SIZE = Firm Size; IND = Industry; LEV = Leverage; GROW = Growth; ROI = Return on Income; MCAP = Market Capital (MCAP); ε = Error Term.

FINDINGS AND ANALYSIS

Tables 1 and 2 provide the results of the descriptive statistics analysis for independent, dependent, and control variables. These tables present the minimum and maximum values, mean, and standard deviation of the variables in this study.

Table 1 Descriptive Statistics of Sample (N= 1488)

	Minimum	Maximum	Mean	Standard Deviation
Dependent Variable				
Mscore	-3.2066	2.8758	-0.0020	0.99160
Independent Variables				
BIND	0.0000	86.0000	42.9503	13.5779
BMEET	1.0000	18.000	5.0000	1.4860
BSIZE	4.0000	15.0000	7.3508	1.7803
Control Variables				
LEV	-0.0254	1.07441	0.6811	0.6321
GROW	-0.1555	2.2534	1.1988	0.1322
ROI	0.2241	2.877	1.5241	0.1457
MCAP	-2.1171	3.2066	0.0030	0.9879

Note: The sample consists of 1488 firm-year observations for the period 2010-2013 corresponding to 372 public listed firms in Malaysia. Mscore is the manipulation index calculated by using the Beneish profit model proposed by (Goel, 2014) and (Aren, 2006). BIND is the percentage of board independence obtained from the percentage of independent non-executive directors to the total number of board members. BMEET is the board meeting represented by the number of board meetings held per year. BSIZE is the board size represented by the total number of board members. LEV is the total debt over total asset. GROW is sales growth over previous year sales. ROI is the return on income. MCAP is the market capitalization obtained from the natural logarithm of market capitalization.

As illustrated in Table 1, the range of Mscore is between -3.2066 and 2.8758, while the mean and standard deviation is -0.0020 and 0.99160, respectively. It is clearly indicated that the result of the mean for M score (-0.0020) is greater than the critical value of the Manipulation Index (-2.22). Thus, it shows the likelihood of a sample firm being a manipulator.

BIND is represented by the percentage of independent non-executive directors to total number of board members. As shown in Table 1, the minimum number of independent non-executive director is 0% while the maximum number is 86%. Meanwhile, the number of board meeting is represented by BMEET. The minimum number of meetings held in a year is one and the maximum number is eighteen. In average, the number of meetings held by sample firms in a year is five. It implies that most of the firms comply with the minimum requirement of board meeting number as requested by the MCCG 2012. Similarly, BSIZE or board size is derived from the total number of board members in a firm. The descriptive analysis reveals that the minimum number of board members in a sample firm is four and the maximum number is fifteen. MCAP or market capitalization is represented as a control variable in this study and it is measured by using the natural logarithm of market capitalization. The results also indicate that the minimum value is -2.1171 and the maximum value is 3.2066. Meanwhile, the mean and standard deviation is reported as 0.0030 and 0.9879, respectively.

Tables 2 and 3 represent the descriptive statistical analysis for the categorical data. The result exhibits the frequency analysis of the pool data in accordance to the duality role and industries.

Table 2 Frequency Analysis by Duality Role

	Frequency	Percent
DUAL	322	21.60
NON-DUAL	1166	78.40
TOTAL	1488	100.00

Note: DUAL is an indicator of variables represented by dual roles of directorship (chairman and CEO); taking value 1 for duality and 0 for non-duality.

Table 2 shows the frequency analysis of the duality role practiced by 1488 firm-year observations. As exhibited in Table 2, the result shows that the number of firms, which practice dual role, is 21.60% of 1488 firm-year observations, while the remaining 78.40% is otherwise. As explained earlier, duality role represents a person holding the position of both chairman and CEO at the same time. Therefore, it is proven that most of the public listed companies in Malaysia do not practice dual role positions, which is prohibited in MCCG to ensure a good balance of power and position.

Table 3 presents the frequency analysis of nine industries obtained from the DataStream Thomson Reuters, which consists of 1488 firm-year observations. Table 3 shows that the highest frequency of the industry is denoted by Construction and Material Industry (25%) followed by Industrial Engineering Industry (14%). The remaining industries are Software and Computer services Industry (13.4%), Consumer Product Industry (10.49%), Electronic and Electrical Equipment Industry (8.60%), Household Goods and Home Construction Industry (8.1%), General Industrial Industry (7%), Industrial Metal and Mining Engineering (7%) and Industrial Transportation Industry (6.5%).

Table 3 Frequency Analysis by Industry

	Frequency	Percent
CONS	372	25.00
ELEC	128	8.60
GENIND	104	7.00
ENGINE	208	14.00
HSEHOLD	120	8.10
METMIN	104	7.00
TRANS	96	6.50
SOFT	200	13.40
CONSUME	156	10.49
TOTAL	1488	100.00

Note: CONS delegates the values of 1 for the firms under construction and metal industry; 0 otherwise. ELEC delegates the values of 1 for the firms under electronic and electrical equipment industry; 0 otherwise. GENIND delegates the values of 1 for the firms under general industrial industry; 0 otherwise. ENGINE delegates the values of 1 for the firms under industrial engineering industry. HSEHOLD delegates the values of 1 for the firms under household goods and home construction industry; 0 otherwise. METMIN delegates the values of 1 for the firms under industrial metal and mining; 0 otherwise. TRANS delegates the values of 1 for the firms under industrial transportation industry; 0 otherwise. SOFT delegates the values of 1 for the firms under software and computer services industry; 0 otherwise. CONSUME delegates the values of 1 for the firms under consumer product industry; 0 otherwise.

Table 4 Panel A: Summary Results of the Normality Test

	Skewness	Kurtosis
Mscore	17.854	37.775
BIND	0.243	1.094
BMEET	2.404	12.353
BSIZE	0.623	0.317
LEV	1.231	1.012
GROW	1.023	0.974
ROI	0.963	1.021
MCAP	0.744	0.924

Note: Mscore is the manipulation index calculated by using the Beneish profit model. BIND is the percentage of board independence obtained from the percentage of independent non-executive directors to the total number of board members. BMEET is the board meeting represented by number of board meetings held per year. BSIZE is the board size represented by total number of board members. LEV is the total debt over total asset. GROW is sales growth over previous year sales. ROI is the return on income. MCAP is the market capitalization obtained from the natural logarithm of market capitalization.

Table 4, Panel A represents the summary for the result of the normality test, which was carried out for the first time in this study. The results exhibit the existence of abnormal distribution for the variables of Mscore (skewness = 17.854 and kurtosis = 37.775)¹ and BMEET (skewness = 2.404 and kurtosis = 12.353).

From Table 4, Panel A, only Mscore and BMEET need to be normalised while other variables' skewness and kurtosis are within the range and below the score of two. Results in Table 4, Panel B illustrate the summary of the normality test after the Van der Waerden test was carried out. This study used the Van der Waerden normalization technique in treating any

¹ The critical value for skewness and kurtosis is +/- 1.96

abnormal data. The result in Table 4, Panel B indicates that the data is well distributed due to the normal value of skewness and kurtosis (+- 1.96). As a result, the variable values obtained from the Van der Waerden test will be used for further analysis on correlation and multiple regression tests.

Table 4: Panel B: Summary Results of the Van der Waerden Normality Test

	Skewness	Kurtosis
Mscore	-0.020	-0.091
BIND	0.243	1.094
BMEET	0.182	0.353
BSIZE	0.623	0.317
LEV	1.231	1.012
GROW	1.023	0.974
ROI	0.963	1.021
MCAP	0.060	-0.221

Note: Mscore is the manipulation index calculated by using Beneish profit model. BIND is the percentage of board independence obtained from the percentage of independent non-executive directors to the total number of board members. BMEET is the board meeting represented by number of board meetings held per year. BSIZE is the board size represented by total number of board members. LEV is the total debt over total asset. GROW is sales growth over previous year sales. ROI is the return on income. MCAP is the market capitalization obtained from the natural logarithm of market capitalization.

Table 5 shows that the highest correlation among the variable pairs is between the percentage of board independence (BIND) and board meeting (BMEET) with the value of 0.210. Therefore, it is confirmed that there is no multicollinearity among the independent variables examined since the multicollinearity problem is only suspected if the correlation between independent variable value is greater than 0.80.

As illustrated in Table 5, board independence (BIND), board meeting (BMEET) board size (BSIZE), and board duality (BDUAL) have significant negative relationships to the manipulation index (Mscore). In addition, board independence (BIND) and board meeting (BMEET) exhibit significant relationships at 5% and 1%, respectively. According to Peasnell *et al.* (2005), the presence of independent non-executive directors in the board has the potential to detect earnings manipulation. Number of yearly board meeting held would also help to mitigate earnings manipulation due to aggressive discussions on the issues in the management as the degree of board interaction and activities has an influence on earnings manipulation that would improve the effectiveness of the board. These results are supported by the Agency Theory (Jensen & Meckling, 1976) that posits a higher agency cost incurred by the board could help to monitor the firms' activities. The monitoring is reflected by a higher number of board meetings, higher proportion of board independence, and bigger board size while duality roles explain the focus ability. Board members who also serve as the chairman imply a higher concentration, and are more well versed in the firms' routines thus promoting a more stringent monitoring.

In terms of control variables, market capitalization (MARCAP) indicates a significant relationship at 1% to the board size (BSIZE), a positive relationship to board meeting (BMEET), and negative relationships to manipulation index (Mscore), board independent (BIND) and board duality (BDUAL). Leverage (LEV) is significant and negative to the manipulation index

Table 5 Correlation Matrix (Pearson Correlation)

	MSCORE	BIND	BMEET	BSIZE	BDUAL	LEV	GROW	ROI	MCAP	CONS	ELEC	GENIND	ENGINE	HSEHOLD	METMIN	TRANS	SOFT
BIND																	
BMEET	-.061*																
BSIZE	-.093**	.211**															
BDUAL	-.049	-.274**	-.023														
LEV	-.043	.014	-.047	-.028													
GROW	-.153**	-.041	-.036	.024	.017												
ROI	.051	.019	.024	.017	.023	.019											
MCAP	-.015	.042	.031	.018	.031	.024	.017										
CONS	-.012	-.002	.038	.147**	-.023	-.013	.022	0.18									
ELEC	-.012	.069**	.084**	-.044	-.043	-.031	.011	.025	.079**								
GENIND	.046	-.064**	-.073**	.039	.014	-.021	.012	.014	-.093**	-.176**							
ENGINE	-.051*	-.032	.047	.024	.021	-.013	.026	.024	.055*	-.159**	-.085**						
HSEHOLD	-.133**	-.006	-.015	.032	.051*	-.024	-.017	-.016	-.042	-.232**	-.121**	-.117**					
METMIN	.073**	-.052	.008	-.015	.112**	-.032	-.026	.021	-.123**	-.173**	-.094**	-.085**	-.121**				
TRANS	.021	-.054*	-.068*	.089**	.004	-.023	.024	.027	.065*	-.159**	-.086**	-.077**	-.113**	-.084**			
SOFT	.0265	.002	.084**	.016	.022	-.031	.019	.018	.192**	-.154**	-.082**	-.074**	-.108**	-.079**	-.074**		
CONSUME	.038	.093**	-.032	-.083**	-.041	-.028	-.021	.021	-.191**	-.226**	-.123**	-.110**	-.156**	-.119**	-.110**	-.105**	
	.027	-.019	-.059*	-.017	-.100**	-.021	-.0127	.021	.098**	-.198**	-.105**	-.095**	-.138**	-.102**	-.094**	-.091**	-.135**

** Correlation is significant at the level 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

Note: Mscore is the manipulation index calculated by using the Beneish profit model. BIND is the percentage of board independence obtained from the percentage of independent non-executive directors to the total number of board members. BMEET is the board meeting represented by number of board meetings held per year. BSIZE is the board size represented by total number of board members. LEV is the total debt over total asset. GROW is sales growth over previous year sales. ROI is the return on income. MCAP is the market capitalization obtained from the natural logarithm of market capitalization. CONS delegates the values of 1 for the firms under construction and metal industry; 0 otherwise. ELEC delegates the values of 1 for the firms under electronic and electrical equipment industry; 0 otherwise. GENIND delegates the values of 1 for the firms under general industrial industry; 0 otherwise. ENGINE delegates the values of 1 for the firms under engineering industry. HSEHOLD delegates the values of 1 for the firms under household goods and home construction industry; 0 otherwise. METMIN delegates the values of 1 for the firms under industrial metal and mining; 0 otherwise. TRANS delegates the values of 1 for the firms under industrial transportation industry; 0 otherwise. SOFT delegates the values of 1 for the firms under software and computer services industry; 0 otherwise. CONSUME delegates the values of 1 for the firms under consumer product industry; 0 otherwise.

implying that the higher the leverage, the lower the manipulation practices engaged by the sample firms. This could be due to debt monitoring by debt holders over the earnings quality of the firms. General industrial industry (GEIND) and industrial engineering industry (ENGIN) have significantly negative relationships with the manipulation index (Mscore) at 5% and 1% while household goods and home construction industry (HSEHOLD) show a significantly positive relationship at 1% which means that this industry has a potential to execute earnings manipulation activities.

Additionally, the correlation matrix also disclosed that construction and material industry (CONS) and software and computer services industry (SOFT) exhibit a good proportion of independent non-executive directors against the number of board members (BIND) because these variables indicate a positively significant relationship at 1%. Construction and material industry (CONS) and industrial transportation industry (TRANS) show a significantly positive relationship to board meeting (BMEET) at 1%, while industrial metal and mining industry (METMIN), consumer product industry (CONSUME) and electrical and electronic industry (ELEC) show a negatively significant relationship to board meeting (BMEET) at 5%, 5%, and 1%, respectively. Table 6 also illustrates that the industrial metal and mining industry (METMIN) have a significantly positive relationship to board size (BSIZE) at 1%, while the software and computer services industry show a significantly negative relationship to board size (BSIZE) at 1%. This result explains that the industrial metal and mining industry (METMIN) provides an adequate number of board members compared to the software and computer services industry (SOFT). In addition, the industrial engineering industry (ENGIN) and household goods and home construction industry (HSEHOLD) have a significantly positive relationship to board duality (BDUAL) at 5% and 1%, which means these industries practice board duality in their board structure. On the contrary, the consumer product industry (CONSUME) shows a negatively significant relationship at 1%.

The result of the multiple regression analysis is shown in Table 6. The estimation model for this analysis is stated below:

$$\text{Manipulation index (Mscore)} = - 4.84 + 0.92 \text{ DSRI} + 0.528 \text{ GMI} + 0.404 + 0.892 \text{ SGI} + 0.115 \text{ DEPI} - 0.172 \text{ SGAI} + 4.679 \text{ TATA} - 0.327 \text{ LVGI}$$

where,

DSRI = Days' sales in receivable index; GMI= Gross margin index; AQI = Asset quality index; SGI= Sales growth index; DEPI= Depreciation index; SGAI= Sales and general and administrative expenses index; TATA= Total accruals to total assets; LVGI= Leverage index

As illustrated in Table 6, the result shows that the value of the adjusted R² is 7.3%, which indicates the earnings manipulation practiced by sample firms can only be explained by 0.073% out of the overall model. This should not be an issue since the R² results in studies within this area normally lie within this range according to the Malaysian setting. Consistent with the first hypothesis, which stated that there is a significant negative relationship between board independence and earnings manipulation, the result in Table 6 indicates that there is a negative and significant relationship (coefficient = -4.685, and p < 0.01) between board independence

(BIND) and the manipulation index (Mscore), which enables this study to support the first hypothesis. This result implies that a greater board independency with a certain degree of freedom from any internal or external pressure is crucial to look after the earnings' quality.

Table 6 Multiple Regression results.

$$EM = \beta_0 + \beta_1 \text{BIND} + \beta_2 \text{BMEET} + \beta_3 \text{BSIZE} + \beta_4 \text{BDUAL} + \beta_5 \text{SIZE} + \beta_6 \text{IND} + \beta_7 \text{LEV} + \beta_8 \text{GROW} + \beta_9 \text{ROI} + \beta_{10} \text{MCAP} + \varepsilon$$

Model	Coefficient	t-stats
(Constant)	414.912	5.467***
BIND	-4.687	-7.677***
BMEET	-6.729	-0.791
BSIZE	-12.931	-2.811***
BDUAL	-13.421	-0.701
LEV	-21.021	-1.677*
GROW	-7.254	0.231
ROI	-6.455	-0.784
MCAP	-20.901	-1.651*
CONS	-13.739	-0.312
ELEC	-30.013	-0.972
GENIND	-12.581	-0.374
ENGINE	-15.473	-0.597
HSEHOLD	-28.043	-0.877
METMIN	7.811	0.237
TRANS	10.042	0.291
SOFT	-10.709	-0.401
CONSUME	131.076	4.582***
Adj. R – Square	7.3%	
N	1488	

Note: Mscore is the manipulation index calculated by using the Beneish profit model. BIND is the percentage of board independence obtained from the percentage of independent non-executive directors to the total number of board members. BMEET is the board meeting represented by number of board meetings held per year. BSIZE is the board size represented by total number of board members. LEV is the total debt over total asset. GROW is sales growth over previous year sales. ROI is the return on income. MCAP is the market capitalization obtained from the natural logarithm of market capitalization. CONS delegates the values of 1 for the firms under construction and metal industry; 0 otherwise. ELEC delegates the values of 1 for the firms under electronic and electrical equipment industry; 0 otherwise. GENIND delegates the values of 1 for the firms under general industrial industry; 0 otherwise. ENGINE delegates the values of 1 for the firms under industrial engineering industry. HSEHOLD delegates the values of 1 for the firms under household goods and home construction industry; 0 otherwise. METMIN delegates the values of 1 for the firms under industrial metal and mining; 0 otherwise. TRANS delegates the values of 1 for the firms under industrial transportation industry; 0 otherwise. SOFT delegates the values of 1 for the firms under software and computer services industry; 0 otherwise. CONSUME delegates the values of 1 for the firms under consumer product industry; 0 otherwise.

However, the result in Table 6 found that board meeting (BMEET) has no significant relationship (coefficient = -6.731 and $p > 0.1$) with the manipulation index (Mscore). Thus, H_2 is rejected.

Unlike Alonso *et al.* (2000), this study found that board size (BSIZE) has a negative and significant relationship with earnings manipulation (Mscore). The result in Table 6 indicates

that the regression coefficient on board size is -12.929; significant $p < 0.01$, thus H3 is supported. This result is consistent with the study of Soliman and Ragab (2013) and Ahmed *et al.* (2006). Larger board size would be able to serve as an efficient monitoring tool for earnings manipulation. The next board variable regression results in Table 6 show that board duality (BDUAL) roles are not significant (coefficient = -13.425 and $p > 0.1$) to earnings manipulation (Mscore). This result therefore rejects the fourth hypothesis.

Table 6 also shows the results of the control variables. Leverage (LEV) shows a negative and significant link to earnings manipulation implying that a huge reliance on debt enables better earnings quality monitoring. Debtholder serves as a controlling mechanism in leveraging earning manipulation. In addition, Market Capitalization (MARCAP) also indicates that it has a significantly negative relationship at 90% level of confidence to earnings manipulation (Mscore). For industries dummy variables, electronic and electrical equipment industry (ELEC), general industrial industry (GEIND), industrial engineering industry (ENGINE), household goods and home construction industry (HSEHOLD), and software and computer services industry (SOFT) show a negative and non-significant relationship to earnings manipulation (Mscore). However, the consumer product industry (CONSUME) indicated a positive and significant relationship at 99% level of confidence to earnings manipulation (Mscore). The remaining industries indicate non-significant relationships to earnings manipulation. Overall, the findings of this study imply that certain industries' reported earnings quality is significant and in this study, it is shown by the consumer product industry.

CONCLUSION

The essence of the earnings manipulation is derived from the flexibility that exists in management pertaining to the disclosure of reported earnings. This flexibility allows the management to affect the level of income in order to provide benefits to the management and the stakeholders. It is believed that the corporate governance mechanism is a powerful component in monitoring earnings manipulation activities.

Boards of directors are one of the corporate governance mechanisms designed to mitigate earnings manipulation and its characteristic plays a key determinant in detecting the tendency of earnings manipulation. To reduce earnings manipulation, it is believed that board characteristic or board dynamic should be improved and strengthened. Hence, this study examined the relationship of board dynamic characteristic to earnings manipulation by testing the effect of board independence, meeting, and size. Earnings manipulation in this study engaged a probabilistic model — the Beneish M Score to uncover companies that are likely to manipulate their reported earnings. Companies with a higher M Score are more likely to be manipulators.

Based on 922 Bursa Malaysia public listed companies from 2010 to 2013 across nine chosen industries, has led to the final sample of 372 companies with 1488 firm-year observations. The result of this study found that board independence and board size have negative and significant relationships towards earnings manipulation.

This study enhances the transparency and reduces the tendency of earnings manipulation by providing the importance of board independence and size that each company should exercise.

In addition, this study provided evidence that companies with higher leverage have a lower earnings manipulation. Across a number of different industries, the consumer product industry showed a significant relationship to earnings manipulation.

For future studies, further scrutinization of board characteristics could contribute more to this research area. Board confidence and compensation as examined by Chia-Feng (Jeffrey) Yu (2014)² could be replicated in different settings for more robust findings and generalization. This is due to the common blame of board overconfidence that leads to earnings manipulation and excessive risk tolerance.

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²Chia-Feng (Jeffrey) Yu (2014) studied the co-existence of CEO overconfidence and earnings manipulation observed based on agency model with an external capital market

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