FACTORS OF FRAUD OCCURRENCE AND CORPORATE GOVERNANCE STRUCTURES: EVIDENCE FROM EMERGING MARKET MALAYSIA

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Abstract

The main objective of this research is to examine the possible factors of the corporate environment which may contribute to the occurrence of fraud by investigating whether there are any differences in corporate governance, earnings management activities and compensation structures between scandal and non-scandal firms. The sample of this study consists of 57 scandal firms matched with non-scandal firms in the Malaysian financial environment. The scandal firms are the Malaysian publicly listed companies which have been reported to be involved in fraud over the period 1995 to 2008. Non-parametric tests such as Paired t-test and the Wilcoxon signed-rank test are conducted to investigate the differences in characteristics of the two sub-groups (scandal firms vs. non-scandal firms). The results show that the independent directors of scandal firms were holding fewer directorships. In addition, there is evidence to show that scandal firms are reporting lower earnings and therefore paying lower dividends. However, no significant differences are found in the compensation structures of the executive directors in both sets of our sample. The results of the logistic regression reveal that factors such as the nature of dividend payments; the effectiveness of independent committees and the influence of powerful/dominant positions in a company may have been contributing to fraud.

Keywords: Fraud, Malaysia, Corporate Governance, Earnings Management, Compensation

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1. Introduction

The acts of fraud of executives in companies have resulted in the collapse of many high profile companies. Examples of companies which had become victims to fraud include Enron (U.S.A.), WorldCom (U.S.A.), Cendant (U.S.A.), Adelphia (U.S.A.), Parmalat (Italy), Royal Ahold (Netherlands), Vivendi (France) and SK Global (Korea). The fall of these high profile companies illustrates the fact that fraud occurrence in companies is an international phenomena (Albrecht et al., 2008). These companies which have been convicted of fraudulent activities would also have to face legal actions from regulatory authorities. The directors of these companies were punished through heavy penalty charges and subsequently companies are also delisted from the exchange or are being subjected to bankruptcy (Beasley et al., 1999). In addition to the offending directors and auditors being charged in court, unfortunate employees have been traumatised with unemployment when the companies closed down (Beasley et al., 1999; Rezaee, 2005; Wright, 2007). Furthermore, the convictions ruined the reputation of the companies involved; often the amount of compensation damage or losses is huge and irreparable.[1] Rezaee (2005) and Jia, Ding, Li and Wu (2009) point out that frauds in financial reporting have eroded public confidence in the reliability of the

[1] Rezaee (2005) revealed that the Enron fiasco caused losses amounting to USD70 billion to the company's total market capitalization. Wright (2007) mentioned the estimated losses of Enron (USD1.5 billion), WorldCom (USD3.8 billion) and Barings £827 million (USD1.4 billion) all of which reflect the heavy toll such crimes bear on the business environment. Therefore, it was not surprising when the recent global fraud report for year 2010 by The Association of Certified Fraud Examiners (ACFE) estimated that the value of fraud incurred across the world within 2008 to 2009 is estimated to be about USD2.9 trillion.

financial statements of the affected companies and reduced the overall integrity of capital market.

According to The Committee of Sponsoring Organizations of the Treadway Commission (COSO) report in 1999, the losses of the U.S. companies that were involved in financial statement fraud for the period 1987 to 1997 were attributed to weak boards of directors. The report stated that most of the fraudulent acts committed in during that period were associated with the senior management, with the majority of the cases involving CEOs and CFOs of the firms. It also highlighted the phenomena of a high percentage of directors and/or topmanagement personnel possessing a substantial share ownership in these companies (Beasly et al., 1999). Ramaswamy (2005) also confirms the link between weak corporate governance and the likelihood of fraud occurrence when the author notes that firms involved in major fraud such as Adelphia, Royal Ahold, Enron and Worldcom had a poor corporate governance rating prior to their collapse. Poor corporate governance indicates weaknesses in the monitoring and controlling systems employed by the company. When a company's corporate governance is weak or lacks effective control mechanisms, there is a tendency for its management to commit financial transgressions. Prior studies have found that board structure characteristics have a correlation to the likelihood of fraud occurrence. Among these characteristics are large board size, small percentage of outside or external directors and busy directors.[2] Besides board structure, the CEO leadership structure can also be a contributing factor to a company's vulnerability to malpractices or misconduct. To ensure effective leadership, it is expected that the CEO's functions be independent of the position of the chairman of its board and that the CEO has not been serving too long in the company. The early studies revealed that CEO leadership issues in relation to duality function and tenure of service of the CEO are factors that may contribute to the likelihood of companies being involved in fraud.[3] In addition, management owning substantial shares in company is said to be another factor which could be linked to fraud occurrence. Ownership of a large percentage of a company's shares provides a company's management great voting power which in turn creates opportunities for management to commit fraud. The COSO report of 1999 revealed that on average, the CEOs/Presidents, the directors and senior officers held nearly 50% from share ownership in the U.S. firms that were involved in fraud (Beasley et al., 1999). This suggests the idea of rewarding share ownership to top managers is not an effective mechanism in solving agency problems in the companies.

Other than weak corporate governance, activities of earnings management are seen as another factor linked to fraud occurrence. Wilfully engaging in earnings management has been found to be the most common method used in fraudulent financial reporting (Rezaee, 2005). Rezaee (2005) and Lou and Wang (2009) have also established that among the motives influencing companies to manipulate their earnings are the perceived need to achieve targeted profits, to create an impression of financial stability, to satisfy analysts' forecast, to attempt to conform to earnings trend and to allocate performance-based compensation for top management. Another possible causative factor of fraud occurrence in companies is the make-up of the top managements' compensation structure. According to Albrecht et al. (2008), inappropriate executive/management compensation or incentives can be one of the reasons which cause large-scale fraudulent acts. These potential benefits motivated the beneficiaries of the top management to focus on increasing the relevant share prices of the company instead of effectively managing the companies (Cheng and Warfield, 2005; Crutchley, Jensen and Marshall, 2007; Albrecht et al., 2008).

Malaysians have also been surprised by the many organisational fraud cases over the last four decades.[4] The recent scandal of Transmile Group Berhad revealed accounting irregularities in financial statements with overstated revenue amounting to RM622 million for the financial years 2004, 2005 and 2006. Due to the fraudulent acts in financial reporting, Transmile Group Berhad encountered a significant fall in its share price from a previous price of RM14.40 to a mere 35.5 cents on 28th September 2010. Consequently, the company owed more than RM500 million to its creditors (Jayaseelan, 2010). According to Lou and Wang (2009), directors or the top management can be strongly persuaded into fraudulently enhancing a firm's performance through manipulation of a firm's earnings. In return, they will earn their performance-based incentives as a reward for supposed good performance. Therefore, these assertions support the position that weak corporate governance practices, aggressive earnings management activities and compensation structures are the possible factors that contribute to the fraud occurrence in Malaysia.

[2] See Beasly (1996), Uzun, Szewczyk and Varma (2004), Farber (2005), Helland and Sykuta (2005), Persons (2006), Schnake and Williams (2008).

[3] For further reading see Hermalin and Weisbach (1991), Beasley et al. (1999), Farber (2005) and Persons (2006).

[4] For instance, the Sime Darby Berhad fraud case in 1973 resulted in the executive chairman and the director of Sime Darby Berhad being charged for embezzling RM3.1 million company's money. Later in 1983, the Bumiputra Malaysia Finance (BMF) fraud case caused the company to incur huge losses amounting to RM2.5 billion. BMF was a subsidiary of Bank Bumiputra Malaysia Berhad (BBMB). The BMF scandal was the result of the application of improper loan processes involving a Hong Kong company. It was found that the fraudsters were among the members of the top management who were charged and sentenced to jail. In 1996, a giant steel company, Perwaja Steel became insolvent with debts amounting to RM8 billion. Further investigation exposed the criminal act committed by the managing director of the firm. The managing director was charged with misappropriation of RM76.4 million for fictitious cost.

Empirical research on the issue of corporate governance and firm value have so far either produced little coverage on fraud assessment or have entirely neglected fraud risks (see HKICPA, 2010). Recent studies have further indicated that lack of fraud assessment seems to be greatest in the Asia-Pacific region where it is reported that more than 25 per cent of existing businesses have never conducted a fraud risk assessment (Law, 2011; HKICPA, 2010). Given this fact, Law (2011) argues that it is critical for heads of compliance and chief financial officers of organizations in the region to better understand corporate governance structures if they are to manage risks related to fraud so that they can put in place controls to prevent corporate failures.

This paper intends to contribute to the existing literature in two ways. Firstly, there is some prior literature on fraud being conducted within commercial entities in developed countries.[5] Unfortunately, less research had been initiated in emerging countries such as Malaysia and this study aims to fill the aforementioned gap to existing literature. Secondly, in 2001, Malaysia has implemented the disclosure based regime (DBR) whereby the Securities Commission (SC) would regulate the disclosure of material information while the onus of assessing the merits of any securities rests with the investors.[6] The reason for this significant shift in responsibility is to uplift the assessment duty of SC to focus more in regulating the high standard of disclosure, due diligence and corporate governance practise by publicly listed companies. Under this new regime, directors and top company officers are expected to practise a great level of due diligence in ensuring that the information disclosed are accurate and timely, consequently promoting good corporate governance practises. It is now clear that companies' organizational leadership are held accountable for any false, misleading statements and omissions of material information given to the public. Consequently, this seems to be the fact behind a higher proportion of publicly listed companies reported to be involved in fraud after 2001 (46 out of 57 samples). This revelation formed the basis for the objectives of the present study to examine the factors which may contribute to the existence of a conducive or encouraging environment for Malaysian companies to attempt fraud. In view of all these instances of potential management malpractice, it is worthwhile to examine the differences in corporate governance practices, existences of earnings management activities and management compensation structures between Malaysian scandal firms and non-scandal firms.

2. Literature Review

2.1 The Theory of Fraud

The theory of fraud with reference to white-collar crime was originally developed by Edwin Sutherland in 1949 (Albrecht and Dolan, 2007). Accordingly, persons who committed white-collar crimes are often the trusted persons who held accountable positions in an organisation. These offenders often perceive themselves as good people and not criminals. In 1953, Donald Cressy further extended the initial discovery by Sutherland through his research on the circumstances which lead fraudsters to violate ethical standards to commit fraud. Cressy's research findings established three elements that cause fraud acts, namely, perceived pressure, perceived opportunity, and rationalization. These three elements have also been highlighted in the Statement on Auditing Standards (SAS) No. 99, Consideration of Fraud in a Financial Statement Audits (Hogan, Rezaee, Riley and Velury, 2008).

Perceived pressure refers to element that causes someone to commit a fraudulent act. According to Albrecht et al. (2007), top management will be under huge pressure to ensure earnings show a continual upward trend or to meet expectation by market analysts, thus reflecting the company's positive performance. The perceived pressure may also be due to the fragile economic conditions which force managers and employees to face tougher challenges of fear and uncertainty stemming from personal, financial and workplace pressures. In committing a fraudulent act, there must exist some opportunity for someone to proceed with the action without being detected. The opportunity to commit fraud usually emerges from weaknesses in corporate governance mechanisms such as ineffective or a weak board of directors. In particular, a lack of independent directors, omissions of the audit committee, CEO duality control, an insufficient number of audit committee meetings, poor internal controls, insufficient training, poorly articulated procedures and weak ethical culture in the organisation all encourage fraud commission (Farber, 2005; Dorminey, Fleming, Kranacher and Riley, 2010). The third element identified in the fraud triangle is rationalization. It is the ability to explain, defend or make excuses to defend the criminal behaviour or the fraudulent action(s) (Albrecht et al., 2007). When one has a well-developed ability to rationalise, it will increase the possibility of the person to commit fraud and usually people who are dishonest have the tendency to rationalise more than an honest person. One will attempt to convince oneself of some justification and indulge in seemingly rational means

[5] See for example, research done in the United States of America (U.S.A.) - Erickson, Hanlon and Maydew (2004), Farber (2005), Uzun et al. (2004), Erickson, Hanlon and Maydew (2006), Persons (2006), Crutchley et al. (2007), Perols and Lougee (2010) and United Kingdom (U.K.) – Hemraj (2004), Hsu and Wu (2010), etc.

[6] Prior to this, the Malaysia securities market is regulated on a merit-based system (MBR). It is a system whereby regulation and review of securities rest with the authorities.

of moral acceptance for his wrongdoing (Dorminey et al., 2010).

2.2 Fraud and Corporate Governance Literature

For the purpose of this study, the literature will be discussed along three possible areas which are considered to have links with fraud elements. These areas are the company's weak corporate governance practices (perceived opportunity); earnings management activities (perceived pressure) of the firm; its compensation structure (perceived pressure). Corporate governance in an organization is important because it ensures accountability, supports better decision making process and encourages independence and objectivity in business activities. Rezaee (2005) asserts that weak corporate governance (perceived opportunity) is one of the factors that caused the fraud events in Enron, WorldCom and other scandal firms.[7] There are three corporate governance features which are strongly related to fraud, namely board structure, leadership structure and ownership structure.[8]

A board of directors is responsible for a company's governance and it plays a critical role in ensuring compliance by offering proper direction and guidance to the company (Rezaee, 2005; Kyereboah-Coleman and Biekpe, 2007). A poorly structured board may encourage opportunities for fraud occurrence. The following literature focuses on the components of board structure such as board of director size, percentage of outside directors in board/committees and also the number of directorships held by the directors in determining the effectiveness and level of independence of a firm's board of directors in relation to fraud occurrence. Jensen (1993) posited that a smaller board is more functional and amenable CEO to control. In contrast, Helland and Sykuta (2005) found that larger boards can be effective monitors. In the U.K, Hsu and Wu (2010) found that failed companies have fewer directors on the board than the non-failed firms but the study was unable to establish a link between board size and fraud occurrence. Beside the board size, many studies examine the percentage of independent directors in a company's board. It is crucial to have independent directors in the board because they would monitor management in order to solve agency problems and institute decision control over top management to prevent any involvement in financial statement fraud (Beasley, 1996). In an early research in the US, Beasley (1996) compares 75 US fraud firms with 75 non-fraud firms and found that boards in non-fraud firms have a significantly higher percentage of independent directors compared to fraud firms.[9] A Malaysian study conducted by Mohd et al. (2005) found that even though many independent directors sat on a board, they failed to prevent the CEO/Chairman from manipulating company earnings. In Australia, Davidson, Goodwin-Steward and Kent (2005) revealed a significant negative association between boards with a majority of non-executive directors and earnings management. Similar results were also found in the US by a recent study undertaken by Ahmed et al. (2008). Hsu and Wang (2010) reveal a negative link between failed companies in the UK and the percentage of non-executive directors on their boards. Another aspect related to outside directors is the optimal number of external directorship appointments. Beasley's (1996) study indicated that the fewer the number of appointments of director positions held by independent directors in other firms, the less likely the occurrence of financial statement fraud. Schnake and Williams (2008) lent further support to the reported negative relationship across several firms between governance and the holding of multiple directorships. Holding multiple directorships resulted in disruptions in work and attentiveness when servicing larger boards ultimately leading to a probability of fraud occurring in the U.S companies. However, Ferris, Jagannathan and Pritchard (2003) in their research found no link between multiple directorships and the likelihood of securities fraud litigation in the country. In Malaysia, there is limitation on number of directorship imposed by the Bursa Malaysia Listing Requirement. A director of a Malaysian publicly listed company cannot hold more than 25 directorships in companies.[10] Nevertheless, a Malaysian study conducted by Saleh et al. (2005) found that multiple directorships are negatively associated to earnings in firms with negative unmanaged earnings.[11]

Assigning separate board functions to different committees implies a clean separation of tasks and functions in controlling boards (Laux and Laux, 2009). Uzun et al. (2004) found that the existence of

[7] The researcher explained that among the weak corporate governance practices that contributed to these debacles are (1) a lack of vigilant oversight functions (e.g. by the board of directors and/or the audit committee), (2) arrogant and greedy management, (3) improper business conduct by top executives, (4) ineffective audit functions, (5) lax regulations, (6) inadequate and less transparent financial disclosures, and (7) inattentive shareholders (p. 288).

[8] See for example, Beasley (1996), Beasley et al. (1999), Uzun et al. (2004), Farber (2005), Helland and Sykuta (2005), Persons (2006), Efendi, Srivastava and Swanson (2007).

[9] The result is consistent with other US studies conducted by Uzun et al. (2004), Farber (2005), Helland and Sykuta (2005) and Persons (2006), etc.

[10] Limitation of 25 directorship inclusive of 10 in publicy listed companies and 15 in other non-listed companies , available at http://www.bursamalaysia.com/website/bm/regulation/rules/listing_requirements/downloads/bm_mainchapter15.pdf for main market and http://www.bursamalaysia.com/website/bm/regulation/rules/listing_requirements/downloads/bm_acechapter15.pdf for ACE market.

[11] According to Saleh et al. (2005), unmanaged earnings are earnings minus discretionary accruals.

independent directors in audit committees and compensation committees are significantly related to fraud occurrence. Davidson et al. (2005) showed that in Australia, there is a significant association between audit committees with earnings management. But, a study carried out by Yammeesri and Herath (2010) on 245 non-financial firms listed on the Stock Exchange of Thailand failed to establish any connection between a percentage of independent directors on the three board committees and firm value. In Malaysia, the MCCG (2007) has highlighted the duties and provides useful reference for how audit, remuneration and nomination committees should operate in Malaysian publicly listed companies. Therefore, our first main hypothesis in this research is:

H1: There are significant differences in board structure between scandal firms and non-scandal firms.

There are debates on whether the company's leadership structure should be either a combination or enforcing a separation between the roles of a CEO and chairman of the board (Epps and Ismail, 2009). Agency theory asserts that the CEO indulging in dual functions is bad for a company's performance as it can compromise his/her monitoring and control duties. On the other hand, stewardship theory argues that CEO duality enhances a firm's performance because there is the leadership unity of command. In the US, Farber (2005) examined 87 fraud firms by matching them to non-fraud firms and found fraud firms have a higher percentage of CEOs who are also board chairperson. Persons (2006) revealed that existence of CEO duality leads to a higher possibility of companies experiencing fraud. Efendi et al. (2007) posited that the likelihood of firms having misstated financial statements was greater when the CEO was also the chairman of the company's board. Ahmed et al. (2008) found a positive correlation between CEO duality and managing earnings among the US companies, a finding which was consistent with the study conducted in Thailand by Yammeesri and Herath (2010). In contrast, Uzun et al. (2004) showed no evidence that US fraud companies are more likely to have CEOs with duality functions. Similar results were found by Davidson et al. (2005) which indicated that there is no relationship between separation of CEO duality functions and earnings management. In the UK, Hsu and Wu (2010) found that leadership duality is not linked with corporate failure incidents.

Another measure to the underlying agency problem is the duration tenure of directors. Hermalin and Weisbach's (1991) findings suggest that the CEO who holds the job for a long time will become entrenched in his ways and this may provide the impetus to commit fraudulent acts. Other US studies such as Beasley (1996) and Uzun et al. (2004) however, found that number of years a CEO is on the board is not a significant factor to contribute to the possibility of fraud occurrence. In contrast, Persons (2006) found the longer the CEO's tenure on the board, the lesser the likelihood of fraud. An exception was in Hsu and Wu (2010) whose results indicated that CEOs in corporate failures in the UK had shorter tenures. The second main hypothesis of this research is:

H2: There are significant differences in leadership structure between scandal firms and non-scandal firms.

It is said that awarding share ownership can align a manager's interest with those of the shareholders (Jensen and Meckling, 1976). This is because when managers own a company's stocks it may motivate them to act to enhance the firm's value (Hermalin and Weisbach, 1991). When they are thus motivated to improve their own position and the firm's, there is less likelihood to manipulate earnings or commit fraud (Ahmed et al., 2008). However, much prior literature revealed conflicting results to that of Ahmed et al. (2008).[12] Therefore, the third main hypothesis is:

H3: There are significant differences in management ownership between scandal firms and non-scandal firms.

2.3 Earnings Management in Corporate Accounting

There are many reasons why management may manipulate a firm's earnings. Some of the reasons include, to report higher earnings; to avoid reporting pre-tax losses; to meet or exceed analysts' forecast of the firm's earnings growth; to engineer a significant increase in the price of the firm's stock; to engineer an artificial demand for new issuance shares; to meet with minimum listing requirement by the local exchange to avoid being delisted; and to hide misappropriation of assets and to camouflage the firm's performance deficiencies.[13] Kalbers (2009) elaborates that some of the forms of earnings management may be considered fraudulent.

Crutchley et al. (2007) have used discretionary current accruals (DCA) and absolute DCA as proxies to detect the earnings management activities in scandal companies. The study found that, on average, the scandal firms recorded a significantly higher DCA in the year before the fraud was committed (and also in the third year) compared to that of the matched

[12] For example, Hermalin and Weisbach's (1991) findings suggest there is an optimal limit to managerial ownership in a firm. Beasley's (1996) findings show with large managerial ownership, it provides the clout to indulge in fraudulent activities. Persons (2006) also conducted in the U.S.A. revealed that equity ownership by outside directors and outside blockholders did not reduce the likelihood of non-financial reporting fraud. Sen (2007) found that an increase in the proportion of ownership of a firm may not necessarily minimize the propensity to commit fraud. Similar results were reported by Hsu and Wu (2010) who found the managerial stockholding as a control variable was not showing significant variance between failed and non-failed firms in the UK.

[13] See for example, Beasly et al. (1999), Cox and Weirich (2002), Jensen (2005), Crutchley et al. (2007), Albrecht et al. (2008), etc.

non-scandal firms. Erickson et al. (2004) analysed a sample of firms in the U.S.A. on whether firms which practiced fraudulent earnings overstatement had paid income tax on the overstated earnings which were in fact non-existent earnings. The findings of their study revealed that firms tend to over-pay their firms' taxes by inflating their accounting earnings. According to Crutchley et al. (2007), deferred tax expense can suggest the existence of earnings management. This is because provision for deferred tax can imply an over-aggressive style of management in tax planning strategies to falsely report higher or lower earnings than the true earnings of a firm. Md Noor et al. (2007) examined financial statements prepared for the years 2001 to 2003 by firms of Bursa Malaysia. Their findings suggested that firms used deferred tax expense to avoid reporting a loss. Ettredge et al. (2008) found a strong link and a positive relationship between deferred tax expense and the likelihood of fraud occurrence. Generally, companies which are prone to fraud incidents are the ones that report to the market a more rapid and greater rate of business expansion than is actually the case.[14] Crutchley et al. (2007) suggests that when a firm is paying dividends to its shareholders, the action provides a strong indication that the firm is having cash in hand to cater for the payment which in turn suggests an absence of any earnings management. Therefore, dividend payment can be used as a measurement to detect earnings management activities in a firm. This study proposes the fourth main hypothesis as follows:

H4: There are significant differences in earnings management activities between scandal firms and non-scandal firms.

2.4 Compensation Structure

The compensation structure of top management can also act as an incentive for the management to commit fraudulent activities. Gao and Shrieves (2002) report that the compensation structure (which includes bonuses and stock options) and its intensity are associated with the earnings management. An earlier study carried out by Baker, Collins and Reitenga (2003), which examines details of pay packages of CEOs of 350 wall street firms, provide a strong evidence suggesting that discretionary current accruals (DCA) is influenced by the share options. Cheng and Warfield (2005) observe that managers with large stock-based compensation are motivated to be involved in managing the firm's earnings which enables them to then sell their shares at higher price. Denis, Hanouna and Sarin (2006) found CEOs in fraud firms sample receive more share options compared with those in non-fraud firms. Similar results are reported by Efendi et al. (2007) who reveal that the possibility for misstated financial statements is higher when the CEO has a substantial amount of share options.15 Thus, our fifth main testable hypothesis is:

H5: There are significant differences in compensation structure between scandal firms and non-scandal firms

3. Data Analysis and Research Methodology

3.1 Selection of the Sample Firms and Data Collection

The sample of fraud firms was selected from the Securities Commission of Malaysia (SC) website and also Bursa Malaysia database. The SC database listed about 60 publicly listed companies being charged (insider trading, market manipulation and false or misleading of submission statements) and investigated during the years 1996 to 2010. However, only 31 companies were selected for examination.[16] The Bursa Malaysia database listed 38 companies which had been reprimanded and fined by the Bursa Malaysia for breach of paragraph 16.11(b) 17 of Listing Requirement for the years 2007 to 2010.18 Out of 38, only 26 companies were used for further considerations.[19] Therefore, the final sample of this

[14] See for example, Bell and Carcello (2000), Albrecht et al. (2007), Crutchley et al. (2007), Hogan et al. (2008), Lou and Wang (2009), Perols and Lougee (2010).

[15] There are also studies conducted in the U.S.A. that showed different results from the above. Dechow, Sloan and Sweeney (1996) did not find any evidence to support the notion that managers manipulating firms' earnings are awarded with high earnings-based bonus. Erickson et al. (2006) examined the U.S.A. companies that had been alleged by the SEC to be involved in accounting fraud with the purpose to investigate whether there is a link between executive equity-based incentives and the occurrence of firm's accounting irregularities in the firms. The study found no significant evidence to support their contention. Similarly with Laux and Laux (2009) propose that the increase in CEO equity incentives does not necessarily lead to a higher level of earnings management.

[16] From the population of 60 companies, we have excluded 2 financial institutions, 14 companies which had incomplete information on the fraud incidents and 13 companies with inadequate other relevant data from its sample selection, which resulted in 31 companies being included as sample.

[17] In this study, companies are deemed to be committing fraud with intent if the directors were found in breach of paragraph 16.11(b) of Listing Requirement which states that directors permitting knowingly or where they had reasonable means of obtaining such knowledge that the company is committing the breach.

[18] This study had categorised the scandal firms into (1) financial statement fraud, (2) securities fraud, (3) breach of trust, and (4) other offences. For companies which had breached the SC and Bursa Malaysia regulations regarding the accuracy and timely submission of financial statements are identified as those committing financial statement fraud. Companies which violate any of the SC regulations which were associated with matters such as offences of insider trading and market manipulations are categorised as securities fraud. The offences involving the misuse of company funds for personal benefits were considered as breach of trust. Meanwhile, any of the companies' offences other than the first three categories were categorised under other offences.

[19] Out of these 38 companies, 12 companies are reported by both SC and Bursa Malaysia for the same fraud incident. Therefore, only 26 companies are used.

study consists of 57 fraud firms which will be known as 'scandal firms'.

Table 1. Scandal firms according to the year of fraud incidents and type of offences

Fraud	Type of offences				Total
year	Financial statement fraud	Breach of trust	Securities fraud	Other offences	
1995	-	-	1	-	1
1996	3	-	1	-	4
1997	1	-	1	-	2
1998	2	-	-	-	2
1999	1	1	-	-	2
2001	-	-	1	-	1
2003	1	-	-	-	1
2004	6	1	-	1	8
2005	5	-	-	-	5
2006	5	-	2	2	9
2007	11	2	1	-	14
2008	7	-	-	1	8
Total	42	4	7	4	57

Table 2. The details of financial statement fraud, securities fraud, breach of trust and other offences committed by the 57 scandal firms

Type of offence	Total companies involved	Total directors being charged	Total amount involved (RM)	Total fines to the directors (RM)
Panel A : Financial statement fraud				
Non-compliance of approved accounting standard	2	4	NA	160,000
Submission of financial statements which contain misleading information and/or delay in its submission to the SC and Bursa Malaysia	40	125	NA	Abt 11.5 mil.
Panel B : Securities fraud				
Breach of SC regulations of share transactions (buy and sell) in the market	2	10	20 mil.	NA
Insider trading	1	1	NA	NA
Utilisation of proceeds from share or bond issued for purpose other than approved by SC	4	7	Abt 149 mil.	NA
Panel C : Breach of trust				
Misused company's fund for personal benefit	4	6	Abt 222.5mil.	NA
Panel D : Others				
Disposed assets without shareholders' approval	1	7	20 mil.	NA
Delayed announcement to publicly on default payment of credit facilities	1	6	Abt 273 mil. (USD91mil.)	NA
Provided financial assistance to non-permitted persons or companies	2	11	Abt 35 mil.	NA
Panel E : Total				
9 type of offences	57		Abt 719.5 mil.	Abt 11.66mil.

Note: NA refers not available, mil. denotes million

Table 1 consists of the details of the companies according to the fraud years and types of offences. It shows that 42 companies committed financial statement fraud, followed by 7 companies involved in securities fraud and 4 companies were associated with breach of trust incidents and other offences, respectively. Most of the scandal firms had been involved in financial statements fraud as it implied that financial reporting is among the preferred tools used to intentionally misrepresent their firms' conditions to the stakeholders. Moreover, the highest number of reported offences committed by the

scandal firms were recorded in year 2007 with 14 cases compared to other fraud years. This suggests that there is a spike in intentional breaches of regulations during a period of economic downturn. The details of the type of offence, the amount involved and the total fines are summarised in Table 2. Each of the scandal firms were matched with a firm of similar nature in business and size (selecting those with similar total assets and supported with the closest book-to-market ratio and market capitalisation as at the year before the reported fraud year) that was not reported for any fraud before. These matched firms are termed 'non-scandal firms' in this study.

Of the sample of 57 scandal firms, the highest number of scandal firms was recorded by the industrial products sector with 18 firms (31.58%) followed by the trading and services sector with 13 firms (22.81%). The 9 firms from the technology sector experienced the third highest number (15.79%) of fraud cases (This information can be provided upon request).

Table 3(a). Summary of measurement of firms' characteristics

Proxies	Details
Panel A : Matching measurements	
Total assets	In thousands of Ringgit Malaysia (RM)
Book-to-market ratio	Book value of common stock divided by market value of common stock
Total market capitalization	Market value of firm's outstanding common stock. In thousands of Ringgit Malaysia (RM)
Age	Years from incorporation
Panel B:Initial Comparisons	
Total sales	In thousands of Ringgit Malaysia (RM)
Operating income before tax	Earnings before interest, taxes, depreciation and amortization (EBITDA). In thousands of Ringgit Malaysia (RM)
Net income	In thousands of Ringgit Malaysia (RM)
Panel C: Profitability ratios	
Operating ROA ratio	EBITDA divided by total assets
ROA ratio	Net income divided by total assets
Panel D: Debt ratios	
Debt to assets ratio	Percentage of total debt divided by total assets
Panel E: Market test ratios	
Operating income to price ratio	EBITDA divided by total market capitalization
Earnings to price ratio	Net income divided by total market capitalization

Table 3(b). Summary of measurement of corporate governance variables

Proxies	Details
Panel A: Board structure	
Board size	Number of directors
Board independence	Percentage of independent directors in the board
Audit committee independence	Percentage of independent directors in the audit committee
Remuneration committee independence	Percentage of independent directors in the remuneration committee
Nominating committee independence	Percentage of independent directors in the nominating committee
Additional directorship	Number of additional director position held by independent directors in other publicly listed companies
Panel B: Leadership structure	
Duality	Equals to 1 if the chairman and CEO is the same person, 0 if there is a separate functions
CEO tenure	Number of years the CEO held the position
Panel C: Ownership structure	
Management ownership	The percentage of common stock owned by executive directors

3.2 Firm characteristics and corporate governance variables

Most of the proxies adopted as measurement variables in the current study are selected on a similar basis to those used by Crutchley et al. (2007). However, some modifications and omissions on selected proxies were necessary because of the unavailability of data and due to the incompatibility with the Malaysian environment. There are 12 variables being used to compare the firms' characteristics between scandal firms and their matched non-scandal firms. The details of the measurements are elaborated in Table 3(a). To examine whether there are significant differences in corporate governance practices between scandal firms and non-scandal firms, this study used nine proxies to cover the corporate governance's three main features i.e. (1) board structure, (2) leadership structure, and (3) ownership structure. The details of the proxies for each of the above can be found in Table 3(b).

3.2.3 Earnings management and compensation structure variables

In order to measure the earnings management variables, this study used 13 proxies. The details of the proxies are recorded in Table 4. In the current endeavour it was not possible to distinguish the compensation structures of CEOs and the executive directors due to the aggregation of data reporting by Malaysian publicly listed companies in their annual reports. Furthermore, it was also not possible to measure the share options value received by executive directors due to the constraints in information. Therefore, the current study can only use total cash compensation to understand the compensation structure in both scandal firms and non-scandal firms. The details of the proxies are shown in Table 5.

3.3 Methodology

Adopting the approach of Crutchley et al. (2007), the respective mean and median for both firm types were established by using paired t-test and complemented with the Wilcoxon signed-rank test. The Wilcoxon signed-rank test is considered to be more appropriate for working on a small data pool or on data which are not normally distributed (Pallant, 2001). At a later stage, the factor analysis was applied to summarize the structure of numerous variables used in this study. By using factor analysis, further insights are provided into the underlying factors or fundamentals represented by the various variables used in expressing the possible factors that are related to the Malaysian fraud occurrence. According to Hair et al. (2006), "factor analysis provides the tools for analysing the structure of the interrelationships (correlation) among a large number of variables by defining sets of variables that are highly interrelated, known as factors. These groups of variables (factors), that are by definition highly inter-correlated, are assumed to represent dimensions within the data" (p.104). In the present study, KMO and Barlett's Test of Sphericity are used to evaluate the appropriateness of the variables (Hair et al., 2006).[20] Furthermore, the conceptual underpinnings of the variables and using their judgement is required to look into the appropriateness of the variables (Hair et al., 2006, p.110). In the second stage, we use the results of the factor analysis in performing logistic regression analysis.

4. Results and Discussion

4.1 Preliminary Results

Table 6 compares the firm's characteristics of scandal firms and their matched non-scandal firms. Panel A shows that the scandal firms have a slightly lower total market capitalization compared to non-scandal firms. Nevertheless, the average age in both sets of samples is similar i.e. 22 years. Panel B reveals that the scandal firms have a lower median in total sales and operating income before tax than those recorded by the non-scandal firms. The scandal firms also have less average net income compared to those earned by non-scandal firms. The results of Panel C show that the scandal firms have on average, a lower operating ROA ratio (ROA) significant at the 0.01 level. Likewise, the ROA is lower for scandal firms compared to non-scandal firms. Panel D of Table 6 indicates that scandal firms have significantly higher ratio debt ratio with 0.297 (mean) and 0.314 (median) compared to 0.218 (mean) and 0.172 (median) for the non-scandal firms. Panel E in Table 6 show that the scandal firms have a lower operating income to price ratio and earnings to price ratio compared to the matched non-scandal firms. As a whole, the results suggest that during the year before the fraud year, the scandal firms were facing financial problems i.e. experiencing losses, or were less profitable and had greater debt commitment compared to the non-scandal firms. Furthermore, the poor financial conditions of scandal firms may not possibly attract potential investors to invest in the firms. Hence, the above discussion suggests the scandal firms were in a weaker financial condition compared to their matched non-scandal firms during the year prior to the fraud incidents.

Table 7 compares the corporate governance of scandal and their matched non-scandal firms. Panel A reveals, except for additional directorship, there is no significant differences between the scandal firms and non-scandal firms in terms of (i) the number of directors in board, (ii) percentage of independent directors in board composition, (iii) percentage of

[20] According to Hair et al. (2006), a minimum overall KMO value of above 0.5 and a significant Barlett's Test of Sphericity before proceeding with the factor analysis.

independent directors in audit committee, (iv) percentage of independent directors in remuneration committee, and (v) percentage of independent directors in nominating committee. Overall, we can thus conclude, except for the additional directorship, there are no significant differences in the corporate governance of the scandal firms and non-scandal firms. Panel B of Table 7 show no significant differences in leadership structure between the scandal firms and non-scandal firms which implies that Malaysian firms practice identical styles of leadership in their respective organisations. This result rejects Hypothesis 2. As shown in Panel C of Table 7, the study shows no significant differences were found in mean (17.4% for scandal firms and 14.5% for non-scandal firms) and median (13.7% for scandal firms and 7.2% for non-scandal firms) in management ownership. This result thus rejects Hypothesis 3.

Table 4. Summary of measurement of earnings management variables

Proxies	Details
Panel A : Discretionary current accruals (DCA)[21]	
Discretionary current accruals (DCA)-1	The residuals between expected and actual accruals in the year before the fraud year
Absolute value of DCA-1	Absolute DCA in the year before fraud year
Absolute value of DCA-3	Absolute DCA in the third year before fraud year
Change in AbsDCA	Change between absolute DCA in the year and third year before fraud year
Panel B : Taxation	
Current tax paid	The ratio of total tax paid divided by earnings before tax in the year before fraud year
Deferred tax expense	The ratio of total deferred tax expense divided by earnings before tax in the year before fraud year
Panel C : Growth	
% Change in total assets	The percentage change of total assets in the year before fraud year minus total assets the third year before fraud year divided with total assets in the third year before fraud year
% Change in total sales	The percentage change of total sales in the year before fraud year minus total sales the third year before fraud year divided with total sales in the third year before fraud year
Panel C : Dividend	
Average payout ratio	Average dividends divided by average net income over a three year period
Payout ratio -1	Dividends divided by net income in the year before the fraud year
Payout ratio -2	Dividends divided by net income in the second year before the fraud year
Payout ratio-3	Dividends divided by net income in the third year before the fraud year
% Change in payout ratio	Percentage change of the total dividend in the year before fraud year minus dividend in third year before fraud year divided with dividend in the third year before fraud year

Table 5. Summary of measurement of compensation structure variables

Proxies	Details
Total cash compensation	Average total of salary, bonus and other cash compensation received by executive directors in the year before the fraud year
Total cash compensation per total assets ratio	The average total cash compensation received by executive directors divided by total assets in the year before the fraud year
Total cash compensation per total sales ratio	The average total cash compensation received by executive directors divided by total sales in the year before the fraud year

[21] See Teoh et al. (1998) and Yang et al. (2009)

Table 6. Firms' characteristics of 57 scandal firms and 57 non-scandal firms

					Paired difference (Scandal - Match)		
Firm characteristics		Scandal firms	Matched non-scandal firms				
	N	Mean	Median	Mean	Median	Mean	Median
Panel A: Matching							
Total assets ('000)	57	496,523	287,171	579,616	284,377	-83,093	2,794
Book-to-market ratio	49	1.29	1.13	1.20	0.89	0.08	0.24
Total market capitalization ('000)	51	249,632*	86,347*	449,290	126,394	-199,658*	-40,047*
Age	38	22.1	17.0	22.0	21.5	0.1	-4.5
Panel B:Initial comparison							
Total sales ('000)	56	178,501	109,836***	413,463	147,900	-234,961	-38,064***
Operating income before tax ('000)	55	19,982	14,453**	55,116	18,206	-35,134	-3,753**
Net income ('000)	57	649**	3,063***	19,064	7,048	-18,414**	-3,985***
Panel C :Profitability ratio							
Operating ROA ratio	55	0.038***	0.057***	0.094	0.087	-0.056***	-0.030***
ROA ratio	57	-0.013	0.017**	0.013	0.032	-0.026	-0.015**
Panel D :Debt ratio							
Debt to assets ratio	57	0.297**	0.314***	0.218	0.172	0.079**	0.142***
Panel E :Market test ratio							
Operating income to price ratio	49	-0.037**	0.094**	0.168	0.140	-0.205**	0.046**
Earnings to price ratio	51	-0.236**	0.013*	0.005	0.050	-0.241**	-0.037*

** Indicates statistical significance at the 0.10 level*
*** Indicates statistical significance at the 0.05 level*
**** Indicates statistical significance at the 0.01 level*

All variables are measured as at the year before the fraud incident experienced by the scandal firms. Book-to-market ratio is book value of common stock divided by market value of common stock, Total market capitalization is the market value of firm's outstanding common stock, Age is years from incorporation, Operating income before tax is earnings before interest, taxes, depreciation and amortization (EBITDA) and ROA is return on assets. Operating ROA ratio and ROA ratio are EBITDA and net income divided by total assets respectively, Debt to assets ratio is total debt divided by total assets and Operating income (Earnings) to price ratio is EBITDA (net income) divided by total market capitalization respectively. T-test used to test means and Wilcoxon signed-rank test used to test medians. In Scandal firms column, significance indicates mean or median is difference from its matched non-scandal firms sample and in Paired difference column indicates mean or median is difference from zero.

Panel A of Table 8 shows the results of the computation to measure the extent of earnings management activities in both groups of firms. First, the findings reveal the mean and median of DCA-1 for scandal firms (-0.04 and -0.02 respectively) was significantly lower than mean and median of non-scandal firms (0.01 and 0.00 respectively) which indicate that scandal firms tend to manage earnings by lowering earnings figures. Second, there were differences in the mean and median for the absolute value of DCA-1 for scandal firms (0.08 (mean) and 0.07 (median) for scandal and 0.05 (mean) and 0.04 (median) for matched non-scandal firms, respectively) and the absolute value of DCA-3 also found to have significant differences in mean and median (0.13 and 0.08 for scandal firms, 0.04 and 0.04 for non-scandal firms) at the 0.10 and 0.01 levels respectively. However in terms of change in absolute DCA, both sample groups showed similar results. These results provide support to the assertion that earnings management activities even existed in scandal firms from three years prior to the fraud year. Panel B of Table 8 shows no differences in means between current tax paid and deferred tax expense but a weak median difference at the 0.10 level for current tax paid was indicated. Panel C of Table 8 presents no evidence of significant differences of growth rate between both groups of sample firms. The results imply that scandal firms were not under greater pressure to meet the expectations of analysts and

investors on the firms' expansion compared to non-scandal firms.

Panel D of Table 8 presents the findings of a comparison between dividends distributed by scandal firms and their matched non-scandal firms. It was found that both mean and median were significantly different at the 0.01 level of significance for the period covering three years prior to the fraud year. The differences between the mean of scandal firms (0.13) and that of non-scandal firms (0.46) indicates that non-scandal firms are paying out dividends more than three times that paid out by scandal firms. Indeed, in average, the scandal firms had consistently paid lower dividends to its shareholders for the three years consecutively prior to the fraud year, which are significant at the 0.05 level respectively. However, there is no significant difference found in percentage change in payout ratio for both groups of firms. Even though one of the variables showed insignificant results for dividend, the remaining four variables showed significant results. Overall, there is evidence to suggest the scandal firms were more aggressive in managing the earnings compared to the non-scandal firms. As at the year prior to the fraud year, there is evidence to suggest the scandal firms were more likely to understate their income in the financial statements which in turn resulted in lower dividend payments to its shareholders. Therefore, aggressive earnings management activities and less dividend payment are the possible factors that link to the fraud occurrence among Malaysian publicly listed companies. Hence, we do not reject Hypothesis 4.

Table 9 shows no evidence of significant differences of all the proxies between both groups of sample firms. Even though the average amount of cash compensation received by an executive director in scandal firms (RM395,000) is much lower compared to that of non-scandal firms (RM477,000), unfortunately these result did not show significant differences. Therefore, there is not enough evidence to support the assertion that compensation structure can be one of the possible factors that are associated with fraud occurrence in Malaysian publicly listed companies. Thus, Hypothesis 5 is rejected.

The matched non-scandal firms selected from same industry with similar total assets, book-to-market ratio and total market capitalization. All variables are measured as at the year before the fraud incident experienced by the scandal firms. Board size is the number of directors, Additional directorship measures the average of additional director position held by independent directors in other publicly listed companies, Board (Audit committee, Remuneration committee and Nominating committee) independence defines as percentage of independent directors in the board (audit committee, remuneration committee and nominating committee respectively), Duality equals to 1 if the board chairman and CEO is the same person and 0 if there is a separate functions, CEO tenure defines number of years CEO held the position and Management ownership measures the percentage of common stock owned by the executive directors. T-test used to test means and Wilcoxon signed-rank test used to test medians. In Scandal firms column, significance indicates mean or median is difference from its matched non-scandal firms sample and in Paired difference column indicates mean or median is difference from zero.

The matched non-scandal firms selected from same industry with similar total assets, book-to-market ratio and total market capitalization. DCA-1 is measures in the year before fraud year, Absolute value for DCA-1(3) is measures in the (the third) year before fraud year, Change in Abs DCA is the change between absolute DCA in the year and third year before the fraud year, Current (Deferred) tax paid (expense) is ratio calculated from total tax paid (deferred tax) divided by earnings before tax in the year before fraud year, % Change in total assets (total sales) is the percentage change of total assets (total sales) in the year before fraud year minus total assets in the third year before fraud year divided with total assets (total sales) in the third year before fraud year, Average payout ratio is the average dividends divided by average net income over a three year period before fraud year, Payout ratio-1 (2 and 3) is dividends divided by net income in the year (second year and third year) before the fraud year respectively, and % Change in payout ratio is the percentage change of dividend in the year before fraud year minus dividend in third year before fraud year divided with dividend in the third year before fraud year and multiply with 100. T-test used to test means and Wilcoxon signed-rank test used to test medians. In Scandal firms column, significance indicates mean or median is difference from its matched non-scandal firms sample and in Paired difference column indicates mean or median is difference from zero.

The matched non-scandal firms selected from same industry with similar total assets, book-to-market ratio and total market capitalization. All variables are measured as at the year before the fraud incident experienced by the scandal firms. Total cash compensation is the average total salary, bonus and other cash compensation received by executive directors in a firm in the year before the fraud year, Total cash compensation per total assets (sales) ratio is total cash compensation divided by total assets (sales) in the year before the fraud year. T-test used to test means and Wilcoxon signed-rank test used to test medians. In Scandal firms column, significance indicates mean or median is difference from its matched non-scandal firms sample and in Paired difference column indicates mean or median is difference from zero.

Table 7. Comparison of corporate governance variables between 57 scandal firms and 57 non-scandal firms

Governance variable		Scandal firms		Matched non-scandal firms		Paired difference (Scandal - Match)	
	N	Mean	Median	Mean	Median	Mean	Median
Panel A: Board structure							
Board size	46	7.2	7.0	7.4	7.0	-0.3	0
Board independence (%)	46	42.3	42.9	40.5	40.0	1.8	2.9
Additional directorship	45	0.9**	0.7***	1.6	1.5	-0.7**	-0.8***
Audit committee independence (%)	46	69.3	66.7	70.6	66.7	-1.3	0
Remuneration committee independence (%)	30	63.4	66.7	64.6	66.7	-1.2	0
Nominating committee independence (%)	30	76.4	66.7	82.2	100.0	-5.8	-33.3
Panel B: Leadership structure							
Duality (%)	46	15.2		19.6		-4.3	
CEO tenure (years)	45	5.7	3.0	7.1	6.0	-1.4	-3.0
Panel C : Ownership structure							
Management ownership (%)	46	17.4	13.7	14.5	7.2	2.9	6.5

*** *Indicates statistical significance at the 0.01 level,*
** *Indicates statistical significance at the 0.05 level.*

Table 8. Comparison of earnings management variables between 57 scandal firms and 57 non-scandal firms

Earnings management variable		Scandal firms				Matched non-scandal firms		Paired difference (Scandal - Match)		
	N	Mean		Median		Mean	Median	Mean		Median
Panel A: Discretionary current accrual										
Discretionary current accruals (DCA)-1	43	-0.04	**	-0.02	*	0.01	0.00	-0.04	***	-0.02
Absolute value of DCA -1	42	0.08	**	0.07	**	0.05	0.04	0.03	**	0.03
Absolute value of DCA -3	28	0.13	*	0.08	***	0.04	0.04	0.09	*	0.05
Change in AbsDCA	26	-0.93		-0.95		-0.95	-0.96	0.02		0.01
Panel B: Taxation										
Current tax paid	54	0.09		0.03	*	0.08	0.20	0.01		-0.17
Deferred tax expense	53	0.22		0.01		0.23	0.05	-0.02		-0.04
Panel C: Growth and pressure										
% Change in total asset	43	21.6		1.18		32.9	13.56	-11.3		-12.38
% Change in total sales	43	50.8		7.98		37.9	18.95	12.9		-10.97
Panel D: Dividend										
Average payout ratio	34	0.13	***	0.00	***	0.46	0.37	-0.33	***	-0.37
Payout ratio -1	53	0.11	**	0.00	***	0.62	0.23	-0.51	**	-0.23
Payout ratio -2	44	0.16	**	0.00	***	0.44	0.27	-0.28	**	-0.27
Payout ratio -3	37	0.16	**	0.00	***	0.48	0.29	-0.32	**	-0.29
% Change in payout ratio	39	-7.85		0.00		15.92	0.00	-		0.00

**** Indicates statistical significance at the 0.01 level*
***Indicates statistical significance at the 0.05 level*
** Indicates statistical significance at the 0.10 level*

Table 9. Comparison of compensation structure variables between 57 scandal firms and 57 non-scandal firms

						Paired difference (Scandal - Match)	
Compensation structure variable		Scandal firms		Matched non-scandal firms			
	N	Mean	Median	Mean	Median	Mean	Median
Total cash compensation ('000)	46	395	265	477	304	-82	-50
Total cash compensation per total assets ratio	44	2.2	1.1	2.4	1.6	-0.2	-0.42
Total cash compensation per total sales ratio	44	5.5	2.9	3.8	2.9	1.7	0.08

**** Indicates statistical significance at the 0.01 level, **Indicates statistical significance at the 0.05 level*
** Indicates statistical significance at the 0.10 level*

4.4 Factor Analysis and Logistic Regression

In this section, we employ factor analysis to further summarize the large number of variables into a set of smaller groups or factors which are subsumed in the inter-correlated variables. We will then use logistic regression to empirically determine the factors that contribute to the fraud occurrence. The target sample of this study constitutes 57 Malaysian publicly listed companies which have experienced fraud incidents within over the period 1995 to 2008. Our proposed approach for the detection of potential fraud should assist relevant stakeholders such as shareholders, management, investors, policy makers, regulatory authorities and others to use these factors as a useful reference to predict the possibilities of future fraud occurrence among Malaysian companies.

Table 10. VARIMAX rotated component analysis factor matrix

Variables	Factor 1 Aggressiveness	Factor 2 Dividend payout	Factor 3 Independent governance committee	Factor 4 Influential power	Communality
Change in total sales	.827				.700
Change in total assets	.817				.735
Deferred tax	.660		-.410		.605
Absolute DCA-1	-.608	-.402			.721
Payout ratio -1		.979			.960
Average payout ratio		.962			.952
Remuneration committee independence			.845		.754
Nomination committee independence			.795		.734
Audit committee independence			.539		.327
Management ownership				. 828	.727
Additional directorship				-.812	.693
					Total
Eigenvalues	2.635	2.010	1.728	1.533	7.907
Percentage of trace	20.209	19.602	18.045	14.025	71.882

Note: factor loading less than .40 have not been displayed and variables have been sorted by loadings on each factor.

Overall Kaiser-Meyer-Olkin Measure of Accuracy (KMO) 0.526

Bartlett's Test of Sphericity : 0.000

Of the overall 25 variables, Table 10 shows 11 variables were loaded into four factors of which four variables are loaded in Factor 1 and two variables in Factor 2, three variables in Factors 3 and another two variables fall under Factor 4. Factor 1 represents the variables that reflect the aggressiveness of a firm which is experiencing significant changes in its total assets and total sales whereby these changes usually indicate that the company is undergoing a business

expansion phase. These conditions will create incentives for the management to use the company's accounting and reporting system to manage the earnings in meeting the expectations. Factor 2 is known as the dividend payout factor and includes two variables i.e. (1) average payout ratio, and (2) payout ratio-1. Dividend payout might be an indicator that the company may be involved in managing its earnings fraudulently. Factor 3 consists of three independent committees. The independent element in a firm's corporate governance is an important aspect to avoid the company's operation being dominated by top executives who are intent in pursuing their personal interests which might become a springboard for fraud. If the independent directors are not effective in executing their duties in representing the independent judgements of the committees and the board, it can be the possible factor that leads to the fraud occurrence. Factor 4 is known as the influential wielding power factor. This is because the variables loaded under this factor are management ownership and additional directorship. When directors owned a large percentage of a firm's shares and hold a greater number of directorship positions than held by the independent directors, it is obvious they have more influence over others and can be applied negatively to encourage top management to indulge in acts of fraud in their organisation.

Having undertaken the principal factor component analysis for information search earlier, we next use logistic regression model for further empirical investigation. In this set-up, we have a binary (or dichotomous) dependent variable. We can therefore state the predicted probability that $y_i=1$ as:

$$p_i = \left(\frac{P(\mathrm{y}_i = 1 \mid \mathrm{z})}{(1 - P(\mathrm{y}_i = 1 \mid \mathrm{z}))} \right) = \frac{\exp(\alpha_0 + \beta_1 z_i)}{1 + \exp(\alpha_0 + \beta_1 z_i)}$$

where p is probability and z_i represent explanatory variables X1, X2 etc. Following recent studies such as Law (2011), we can then estimate a logit equation where y_i is the response which is a linear function of some predictor of interest and other control variables as:

$$\begin{aligned} y(\textit{scandal occurance in organization}) = {} & \alpha_0 + \beta_1 \textit{Change in total sales} \\ & + \beta_2 \textit{Pay out policy} \\ & + \beta_3 \textit{Remuneration structure} \\ & + \beta_4 \textit{Management ownership} \end{aligned}$$

Table 11 presents the results of the logistic regression for three different models. Model 1 is derived based on the four factor scores obtained from factor analysis. Model 2 is derived using summated scale method and Model 3 is derived using the variable that has the highest loadings from each of the factor. The results of Model 1 show that there are two variables with significant results at 0.05 and 0.10 level respectively. Factor 3 i.e., independent governance committee is negatively related to fraud. This implies effective independent directors in audit, remuneration and nomination committees can help to avert the fraud occurrence in scandal firms. Factor 4, i.e., influential power is positively related to fraud. This implies influential position holds by a director e.g. through many directorships and managerial shares, will create higher chances for fraud to occur at the firm. Similar results are found in Model 2 but both Factor 3 and 4 are significant at 0.10 level. Factor 2 i.e., dividend payout is found to negatively related to fraud at 0.01 significant level. This implies lower dividend payout firm has the tendency to be involved in fraudulent activities. For Model 3, the findings show that payout ratio-1 and remuneration committee independence are significant at 0.05 and 0.10 level respectively and both has negative relationship with fraud.

Table 11. Results of logistic regression for 57 scandal firms and 57 non-scandal firms *(*** Indicates statistical significance at the 0.01 level, **Indicates statistical significance at the 0.05 level, * Indicates statistical significance at the 0.10 level)*

Dependent variable : Scandal firm (1) and non-scandal firm (0)						
	Model 1		Model 2		Model 3	
Independent variables	Coeff.	t-statistic	Coeff.	t-statistic	Coeff.	t-statistic
Factor 1 : Aggressiveness	0.054	0.329	-0.054	-0.517		
Change in total sales					-0.063	-0.430
Factor 2 :Dividend payout	-0.232	-1.405	-0.302	-2.818***		
Payout ratio -1					-0.321	-2.214**
Factor 3 : Independent governance committee	-0.438	-2.652**	-0.183	-1.683*		
Remuneration committee independence					-0.295	-1.995*
Factor 4 : Influential power	0.309	1.868*	0.184	1.702*		
Management ownership					0.178	1.233
N	28		85		46	
R Square	0.344		0.142		0.188	
F-statistic	3.151		3.359		2.431	

Model 1 is using the four factor scores obtained from the factor analysis, Model 2 is using summated scale method of the factor analysis and Model 3 is using the variable with highest loadings from each factor as its independent variables, respectively.

5. Summary and Conclusions

Company-related fraud is not a rare phenomenon in many countries including Malaysia. Among the effects were losses involving billions of ringgit worth of investors' funds, retrenchment of workers, directors being sued, and companies being declared bankrupt or being delisted. Even though Malaysian fraud cases are not as well-known as the Enron case, there is a need to determine the reasons these fraudulent activities persist in the Malaysian corporate sector. Therefore, the main objective of this study was to examine the possible factors in the corporate environment which may contribute to Malaysian fraud occurrence. To do this, this study examined the differences in corporate governance practices, earnings management activities and compensation structure between scandal firms and non-scandal firms. Additionally, this study manages to derive from an analysis of the variables used in the present study, a suitable categorization of factors that may contribute to fraud occurrence among the publicly listed companies in Malaysia.

From the results, this study finds, except for additional directorships, there is no significant difference in corporate governance practices between scandal firms and non-scandal firms. It was found that these directors hold a less number of board positions compared to those in non-scandal firms. Perhaps, a lack of knowledge, experience and skills among independent directors due to a limited number of directorship posts held by each director can lead to weak corporate governance in the firms concerned. This study also finds scandal firms were already in engaging earning management activities three years prior to the fraud incidents. Moreover, the negative results of DCA values as at the year before the fraud year suggests that scandal firms were managing earnings downward in the financial statements. These findings also showed dividend paid by scandal firms were much lower for the last three years before the fraud year. Thus, the presence of earnings management activities and low dividends payment are among the potential factors that lead to fraudulent incidents in Malaysia. As for the compensation structure of the firms concerned in this study, no evidence of significant differences was found between both groups of firms. Therefore, compensation structure does not contribute to fraud occurrence in Malaysia.

Through factor analysis, this study managed to identify four underlying factors that represent the overall concept of the variables used in this study. The factors are (1) aggressiveness in managing the company, (2) the dividend payment to its shareholders (3) the independent committees in company's governance, and (4) the influence of wielding a powerful and dominant position in a company. These conceptual factors can also be seen as possible causes contributing to fraud incidents in the Malaysian corporate environment. However, the logistic regression results have shown dividend payout, effectiveness of independent governance committees and influential power are the factors that may contribute to fraud occurrence in Malaysian publicly listed companies.

References

1. Ahmed, A.S., Duellman, S. and Abdel-Meguid, A. (2008). "Equity incentives, corporate governance, and earnings management", paper presented at the American Accounting Association 2009 Annual meeting, 1-5 August.
2. Albrecht, C., Albrecht, C.C. and Dolan, S. (2007). "Financial fraud: the how and why: understanding the conditions in which fraud occurs is the key to its detection and prevention", European Business Forum, Summer Issue 29, pp. 34-39.
3. Albrecht, W.S., Albrecht. C. and Albrecht, C.C. (2008). "Current trends in fraud and its detection", Information Security Journal: A Global Perspective, Vol. 17, pp. 2-12.
4. Association of Certified Fraud Examiners (ACFE) (2010), Report to the nation on occupational fraud and abuse. ACFE, Texas.
5. Baker, T., Collins, D. and Reitenga, A. (2003). "Stock option compensation and earnings management incentives", Journal of Accounting, Auditing and Finance, Vol. 18, pp. 557-582.
6. Beasley, M. S. (1996), "An empirical analysis of the relation between board of director composition and financial statement fraud", The Accounting Review, Vol. 71 No.4, pp. 443-465.
7. Beasley, M., Carcello, J. and Hermanson, D. (1999). "Fraudulent financial reporting: 1987–1997. An analysis of U.S. publicly companies. Research commissioned by the Committee of Sponsoring Organizations of the Treadway Commission (COSO)", available at: http://www.coso.org/documents/COSOFRAUDSTUDY2010_001.pdf (accessed 5 January 2011).
8. Bell, T. and Carcello, J. (2000). "A decision aid for assessing the likelihood of fraudulent financial reporting", Auditing: A Journal of Practice & Theory, Vol. 19 No.1, pp. 169-184.
9. Bursa Malaysia (2011). Listing requirements of Bursa Malaysia Securities Berhad, available at: http://www.bursamalaysia.com/website/bm/regulation/rules/listing_requirements/downloads/LR_MBSB.pdf (accessed 3 January 2011).
10. Cheng, Q. and Warfield, T. (2005). "Equity incentives and earnings management", The Accounting Review, Vol. 80, pp. 441-476.
11. Cox, R. and Weirich, T. (2002). "The stock market reaction to fraudulent financial reporting", Managerial Auditing Journal, Vol. 17 No.7, pp. 374-382.
12. Crutchley, C., Jensen, M. and Marshall, B. (2007). "Climate for scandal: corporate environments that

contribute to accounting fraud", The Financial Review, Vol. 42, pp. 53-73.
13. Davidson, R., Goodwin-Stewart, J. and Kent, P. (2005). "Internal governance structures and earnings management", Accounting and Finance, Vol. 45, pp. 241-267.
14. Dechow, P., Sloan, R. and Sweeney, A. (1996). "Causes and consequences of earnings manipulation: An analysis of firms subject to enforcement actions by the SEC", Contemporary Accounting Research, Vol. 13 No.1, pp. 1-36.
15. Denis, D. J., Hanouna, P. and Sarin, A. (2006). "Is there a dark side to incentive compensation?", Journal of Corporate Finance, Vol. 12, pp. 467-488.
16. Dorminey, J., Fleming, A., Kranacher, M. and Riley, R. (2010). "Beyond the fraud triangle: Enhancing deterrence of economic crimes", The CPA Journal, July, pp. 16-23.
17. Efendi, J., Srivastava, A. and Swanson, E. (2007). "Why do corporate managers misstate financial statements? The role of option compensation and other factors", Journal of Financial Economics, Vol. 85, pp. 667-708.
18. Epps, R. and Ismail, T. (2009). "Board of directors' governance challenges and earnings management", Journal of Accounting and Organizational Change, Vol. 5 No.3, pp. 390-416.
19. Erickson, M., Hanlon, M. and Maydew, E. (2004). "How much will firms pay for earnings that do not exist? Evidence of taxes paid on allegedly fraudulent earnings", The Accounting Review, Vol. 79 No.2, pp. 387-408.
20. Erickson, M., Hanlon, M. and Maydew, E. (2006). "Is there a link between executive equity incentives and accounting fraud?", Journal of Accounting Research, Vol. 44 No. 1, pp. 113-143.
21. Ettredge, M., Sun, L., Lee, P. and Anandarajan, A. (2008). "Is earnings fraud associated with high deferred tax and/or book minus tax levels?", Auditing: A Journal of Practice & Theory, Vol. 27 No.1, pp. 1-33.
22. Farber, D.B. (2005). "Restoring trust after fraud: Does corporate governance matter?", The Accounting Review, Vol. 80 No. 2, pp. 539-561.
23. Gao, P. and Shrieves, R. (2002). "Earnings management and executive compensation: A case of overdose of option and underdose of salary?" working paper, College of Business Administration, University of Tennessee, Tennessee, 29 July.
24. Hair, J., Black, W., Babin, B., Anderson, R. and Tatham, R. (2006). Multivariate data analysis, Pearson Prentice Hall, New Jersey.
25. Helland, E. and Sykuta, M. (2005). "Who's monitoring the monitor? Do outside directors protect shareholders' interests?" The Financial Review, Vol. 40, pp. 155-172.
26. Hemraj, M.B. (2004). "Preventing corporate scandals", Journal of Financial Crime, Vol. 11 No.3, pp. 268-276.
27. Hermalin, B.E. and Weisbach, M.S. (1991). "The Effects of Board Composition and Direct Incentives on Firm Performance", Financial Management, Vol. 20, pp. 101-112.
28. Hogan, C., Rezaee, Z., Riley, R. and Velury, U. (2008). "Financial statement fraud: Insights from the academic literature", Auditing: A Journal of Practice & Theory, Vol. 27 No. 2, pp. 231-252.
29. Hsu, H. and Wu, Y. (2010). "Board composition, 'grey directors' and the incidences of corporate failure in the UK", available at: http://www.business.illinois.edu/accountancy/research/vkzcenter/conferences/taiwan/papers/Hsu_Wu.pdf (accessed 5 January 2011).
30. Jayaseelan, R. (2010). "EPF still keen on winding up Transmile which owes RM500mil", The Star Online, 29 September.
31. Jensen, M. C. (1993). "The modern industrial revolution, exit, and the failure of internal control systems", Journal of Finance, Vol. 48 No. 3, pp. 831-880.
32. Jensen, M. C. (2005). "Agency costs of overvalued equity", Financial Management, Vol. 34, pp. 5-19.
33. Jensen, M. and Meckling, W. (1976). "Theory of the firm: Managerial behavior, agency costs and ownership structure", Journal of Financial Economics, Vol. 3 No. 4, pp. 305-360.
34. Kalbers, L. (2009). "Fraudulent financial reporting, corporate governance and ethics: 1987-2007", Review of Accounting and Finance, Vol. 8 No. 2, pp. 187-209.
35. Kyereboah-Coleman, A. and Biekpe, N. (2007). "On the determinants of board size and its composition: Additional evidence from Ghana", Journal of Accounting & Organizational Change, Vol. 3 No. 1, pp. 68-77.
36. Law, Philip. (2011). "Corporate governance and no fraud occurrence in organizations: Hong Kong evidence". Managerial Auditing Journal, Vol. 26, issue 6, pages 501-518.
37. Laux, C. and Laux, V. (2009). "Board committees, CEO compensation, and earnings management", The Accounting Review, Vol. 84 No. 3, pp. 869-891.
38. Lou, Y. and Wang, M. (2009). "Fraud risk factor of the fraud triangle assessing the likelihood of fraudulent financial reporting", Journal of Business & Economics Research, Vol.7 No 2, pp. 61-78.
39. Malaysian Code on Corporate Governance (2007). available at: http://www.sc.com.my/eng/html/cg/cg2007.pdf (accessed 31 January 2011).
40. Md Noor, R., Mastuki, N. and Aziz, Z. (2007), "Earnings management and deferred tax", Malaysian Accounting Review, Vol. 6 No. 1, pp. 1-17.
41. Mohd. Saleh, N., Mohd. Iskandar, T. and Rahmat, M. (2005). "Earnings management and board characteristics: Evidence from Malaysia", Jurnal Pengurusan, Vol. 24, pp. 77-103.

42. Pallant, J. (2001). SPSS survival manual: A step by step guide to data analysis using SPSS for Windows (Version 10), Allen and Unwin, Victoria.
43. Perols, J. and Lougee, B. (2010). "The relation between earnings management and financial statement fraud", Advances in Accounting, incorporating Advances in International Accounting (2010). doi:10.1016/j.adiac.2010.10.004.
44. Persons, O.S. (2006). "Corporate governance and non-financial reporting fraud. Journal of Business & Economic Studies, Vol. 12 No. 1, pp. 27-39.
45. Ramaswamy, V. (2005). "Corporate governance and the forensic accountant", The CPA Journal, March, pp. 68-70.
46. Rezaee, Z. (2005). "Causes, consequences, and deterence of financial statement fraud", Critical Perspectives on Accounting, Vol. 16, pp. 277-298.
47. Schnake, M.E. and Williams, R.J. (2008). "Multiple directorships and corporate misconduct: The moderating influences of board size and outside directors", Journal of Business Strategies, Vol. 25 No. 1, pp. 1-14.
48. Securities Commission, "Disclosure-based Regulation-what directors need to know", available at: http://www.sc.com.my/eng/html/resources/inhouse/dbrbi.pdf (accessed 9 January 2012).
49. Securities Commission, "Shift towards disclosure-based regulations", available at: http://www.sc.com.my/eng/html/resources/annual/1995/shift.pdf (accessed 9 January 2012).
50. Sen, P. K. (2007). "Ownership incentives and management fraud. Journal of Business Finance & Accounting, Vol. 34 No. 7 & 8, pp. 1123-1140.
51. Teoh, S., Welch, I. and Wong, T. (1998). "Earnings management and the long-run market performance of initial publicly offerings", The Journal of Finance, Vol. 53 No. 6, pp. 1935-1974.
52. Uzun, H., Szewczyk, S. and Varma, R. (2004). "Board composition and corporate fraud", Financial Analysts Journal, 60, 33-43.
53. Wright, R. (2007). "Developing effective tools to manage the risk of damage caused by economically motivated crime fraud", Journal of Financial Crime, Vol. 14 No. 1, pp. 17-27.
54. Yammeesri, J. and Herath, S. (2010). "Board characteristics and corporate value: Evidence from Thailand", Corporate Governance, Vol. 10 No. 3, pp. 279-292.
55. Yang, W., Chun, L. and Ramadili, S. (2009). "The effect of board structure and institutional ownership structure on earnings management", International Journal of Economics and Management, Vol. 3 No. 2, pp. 332-353.