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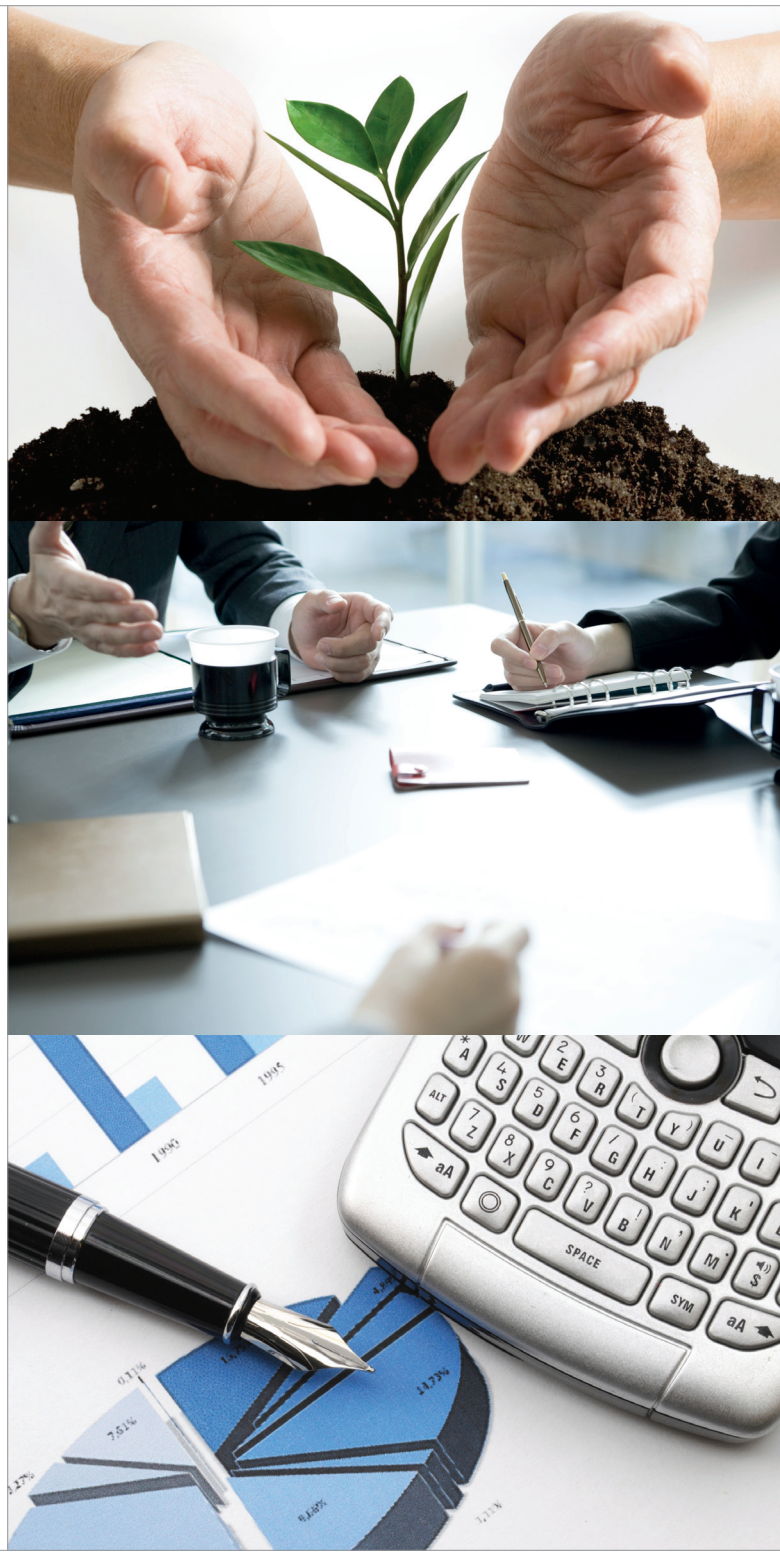

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FOREWORD BY MIA PRESIDENT

DATUK MOHD NASIR AHMAD

Once again, MIA is pleased to extend to you this e-book which features a compilation of the winning articles of the ***2012 Malaysian Institute of Accountants (MIA) Articles of Merit Award on Professional Accountants in Business (PAIB).***

A majority of our membership is made up of accountants in business. As such, it is important for us to continue to engage members and move them towards enhancing their professional knowledge and skills consistently.

It is also hoped that through this medium, the adoption and development of best accounting and management practices are inculcated amongst accountants in commerce and industry, public practice, academia and the public sector.

Whilst this collection of articles is a means of giving due recognition to the respective authors, it is also a clear indication of the significant role played by the PAIB segment of the profession in the development and progress of the profession as a whole through the conveyance of researched and well-argued ideas.

The competition was opened to professionals, academicians and students from the accountancy fraternity. Following an adjudication process, eight articles were selected to receive the respective awards and are featured in this e-book.

All the articles featured here are current and relative to the latest innovations, theories and philosophies that at the moment dictate the dynamics and complexities of the business landscape.

It is hoped that more articles of this nature will be put forth in the future and challenge the intellect of the practitioners of the profession. I wish you a pleasant and interesting time reading these articles.

Thank you.

ACKNOWLEDGEMENTS

We wish to record our appreciation to the parties that have made this Award and the publication of the e-book possible namely the Panel of Judges and the Review Team of the Professional Accountants in Business Committee.

We also wish to thank the PAIB Committee members for their guidance and the MIA PAIB Committee Secretariat of the Professional Standards and Practices (PSP) Department for their hard work in this Award.

To the authors who participated and contributed their time and effort in submitting their articles, we thank you.

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AUDITOR'S REPORT AND AUDIT PARTNER'S ROTATION: EMPIRICAL EVIDENCE FROM PUBLIC LISTED COMPANIES IN MALAYSIA

ABSTRACT

Most researchers attempt to examine the relationship between audit quality and audit partner's rotation. One possible way to improve audit independence and audit quality is to consider the relationship between the audit partner's rotation and auditor's report. Therefore, the main purpose of this study is to analyse the auditor's report and the mandatory rotation of audit partners in selected public listed companies (PLCs) in Malaysia over a period of five years. A cross-sectional review of audit reports for 735 sample data for the selected 147 PLCs listed on Bursa Malaysia over the period 2005 to 2009 was undertaken. A period of five years was chosen in order to analyse the pattern of audit partner's rotation within five years as specified in MIA By-Laws. Cross-tabulation and Chi-square test methods were used to describe the auditor's report and audit partner's rotation in PLCs over the period of five years, and to test the association between auditor's opinion and audit partner's rotation with audit firm size (Big Four and Non-Big Four Audit firms). A logistic regression was also used to test the relationship between audit partner's rotation and other influencing factors such as audit opinion, audit firm size and industrial sector among the PLCs in Malaysia. Research findings indicated that the Big Four audit firms issued more qualified type of audit reports, compared to Non-Big Four audit firms. It was found that there was a significant association between auditor's report and audit firm's size, and a significant association between audit partner's rotation and audit firm's size. However, the association test between audit partner's rotation and audit opinion was found not to be significant. Through a logistic regression analysis, it was found that there was a significant relationship between audit partner's rotation and other influencing factors such as audit opinion, audit firm size and industrial sector.

1. INTRODUCTION

Malaysian public listed companies' financial statements are required to be examined and audited in compliance with the Malaysian Companies Act 1965. Section 169 of the Act requires the directors to present the audited financial statements of the company at every annual general meeting of the company. Section 174 of the Act also instructs that such financial statements should be fully audited by an approved company auditor.

An auditor is engaged to ensure that the financial statements of public listed companies (PLCs) are prepared in accordance with approved accounting standards and relevant regulatory requirements. Thus, auditors play an important role in helping to maintain high-quality financial reports. However, the question of whether auditors adequately play this role in safeguarding accounting information by ensuring credible reporting, has recently received much attention (Johl, Jubb, & Houghton, 2007). According to Knechel and Vanstraelen (2007), audit quality is closely related to auditors' reporting opinion and auditor tenure. They believe that a decrease in audit quality is indicated by an increase in the likelihood that an auditor does not issue a going-concern opinion when a company subsequently goes bankrupt, or an increase in the likelihood that an auditor issues a going-concern opinion to a company that survives.

Additionally, Manry, Mock, and Turner (2003) state that audit quality is not only affected by audit firm rotation, but also the length the audit partner holds office with the same client for a number of years. An audit partner is defined as a partner who is a member of the engagement team who has decision-making responsibility on significant auditing, accounting and reporting matters that affect financial statements, or who maintains regular contact with management and audit committee (Fargher, Lee, & Mande, 2008).

Therefore, ideally the person working behind the derivation of reporting opinion is the audit partner. It seems that it is important to rotate the audit partner because, as has been found by Fargher et al.(2008), when a new partner is appointed, they bring 'fresh eyes' to the engagement. Thus, it will increase audit quality and reduce the familiarity threats. Additionally, rotation of audit partners is one of the main policies that has been implemented in many jurisdictions around the world to deal with concerns about audit quality (Carey & Simnett, 2006).

On the other hand, mandatory audit partner rotation has been seen for decades as a solution to enhancing auditor independence and audit quality (Ryken, Radich & Fargher, 2007). Fargher et al. (2008) stated that a policy on audit partner's rotation in an audit engagement may have the potential to increase audit quality. Indeed, it is possible that by bringing a 'fresh eye' to the engagement, a new partner from the same audit firm might actually increase the quality of the audit. Moreover, audit partner's rotation was introduced as an attempt to enhance auditor independence by reducing the 'familiarity threats' to an acceptable level (Ryken, et al., 2007). They also added that the Australian legislative reforms were similar to those introduced in US where, Australian audit firms were required to rotate their partners and review partners every five years.

The Sarbanes-Oxley Act (SOX) (2002) established the Public Company Accounting Oversight Board (PCAOB) in the United States to oversee the audit of public companies that are subject to the securities laws and other related matters in order to protect the interests of investors and the public at large. Section 203 of SOX imposes the requirement of audit partner's rotation every five fiscal years (SOX, 2002, pp 773).

In the revised MIA By-Laws on the Long Association of Senior Personnel (including Partner Rotation) with an Audit Client, Malaysian Institute of Accountants (MIA) mandated that the Certified Public Accountant (CPA) must rotate the senior partners (audit partners) within a period of five (5) years. Such rotation is important because familiarity and self-interest threats are created by using the same senior personnel on an audit engagement over a long period of time (MIA, 2010).

One of the major causes of audit failures is undue influence caused by personal auditor-client relationship (Tackett, Wolf & Claypool, 2004). A long tenure and association with the audit client can also reduce the incentive for the auditor to carry out his duties with professional independence and thus will lead to a biased audit opinion (Cameran, Vincenzo & Merlotti, 2005). The possible way to improve audit independence and audit quality is to consider the relationship between the auditor's report and the audit partner's rotation. Thus, this study aims to analyse the different types of auditor's report issued, and the mandatory rotation of audit partner within the Malaysian scenario.

The following are the specific objectives of this empirical study, which are to analyse the auditor's report and audit partner's rotation among Public Listed Companies (PLCs) in Malaysia over a period of five years from the year 2005 until 2009.

1. To identify the different types of auditor's report for the period of five years.
2. To analyse the different types of auditor's report from the Big Four and Non-Big Four audit firms for the period of five years.
3. To analyse the mandatory rotation of audit partner of the Big Four and Non-Big Four audit firms for the period of five years.
4. To analyse whether the rotation of audit partner had an association with audit reports in year 2009.
5. To examine whether there was a significant relationship between audit partner's rotation and audit opinion, audit firm size and industry.

The following section provides a review of literature and previous studies on auditor's report and mandatory audit partner's rotation. The research methodology section discusses the hypotheses test for the data sources of PLCs obtained from the website of Bursa Malaysia. The section on data analysis and discussion presents the descriptive and inferential statistical results and discussion of findings before concluding remarks are provided in the last section.

2. LITERATURE REVIEW

In Malaysia, the auditor's role is regulated through the Companies Act 1965 and the Accountants Act 1967. The auditing profession is regulated by the Malaysian Institute of Accountants (MIA) through the Accountants Act 1967 and the revised By-Laws on professional ethics, conduct and practice. International Standards on Auditing (ISAs) issued by the International Federation of Accountants are to be applied in the audit of historical financial information. MIA requires auditors in Malaysia to observe ISAs pertaining to audit principles and framework, auditor's responsibilities, audit procedures and audit quality, for an audit engagement of financial statements.

The ISA 700 states that the Auditor's Report on Financial Statements provides authoritative guidance on the basic elements and forms of audit reports (IFAC, 2009). The auditor shall express an unmodified or unqualified opinion when the auditor concludes that the financial statements are prepared, in all material respects in accordance with the applicable financial reporting framework. However, the ISA 705 on Modifications to the Opinion in the Independent Auditor's Report shall be applied if the auditor concludes that based on the audit evidence obtained, the financial statements as a whole are not free from material misstatement or they were unable to obtain sufficient appropriate audit evidence to conclude that the financial statements as a whole are not free from material misstatement. The ISA 705 gives three (3) types of modification to the auditor's report namely "Qualified Opinion," "Adverse Opinion" and "Disclaimer Opinion" (IFAC, 2009).

The auditor shall express a 'qualified' opinion when the auditor concludes that misstatements, individually or in the aggregate, are material, but not pervasive, to the financial statements; or when the auditor is unable to obtain sufficient appropriate audit evidence on which to base the opinion, and the possible effects on the financial statements of that inability are material but not pervasive. An adverse opinion is expressed when the auditor concludes that misstatements which are material individually or in the aggregate, are pervasive to the financial statements. Furthermore, the auditor shall disclaim an opinion on the financial statements when the auditor is unable to obtain sufficient appropriate audit evidence on which to base the opinion, and the possible effects on the financial statements of that inability are both material and pervasive (IFAC, 2009).

In addition to that, if the opinion does not fall under either 'unqualified' opinion (ISA 700) or 'qualified' opinion (ISA 705), effective from December 2009, the ISA 706 on Emphasis of Matter and Other Matter paragraphs in the Independent Auditor's Report shall be applied. According to ISA 706, 'Emphasis of Matter' paragraph is a paragraph included in the auditor's report that refers to a matter appropriately presented or disclosed in the financial statements that, in the auditor's judgment, is of such importance that it is fundamental to users' understanding of the financial statements.

The auditor's report is the main product or output of the audit. According to A. Al -Thuneibat, Khamees & Al-Fayoumi (2008), the audit report is the medium of communication between the auditor and the users of financial statements. It represents the most important aspect of the audit process and the auditor uses it to convey the results of the audit process to the users of the financial statements. The expected effect of the audit report on the users' decisions is one of the important factors that stands behind the demand for audit services. Additionally, A. Al -Thuneibat et al. (2008) argued an audit report must be understandable, objective and accepted by the users since it will be used by them for their informed decision-making process.

There are huge numbers of researchers who have been looking for the connection between audit reporting opinions with other study variables. Study variables that have been tested as explanatory factors to reporting opinion are earnings management (Johl, et al., 2007), managing director changes and financial distress (Hudaib & Cooke, 2005), auditee and audit firm characteristics (Caramanis & Spathis, 2006), auditor switching (Chow & Rice, 1982 and Krishnan, Krishnan, & Stephens, 1996), and audit structure (Kim, 2002).

Farrugia and Baldacchino (2005) in their research tried to identify the different types of qualifications in auditor's report of companies in Malta, the extent of multiple and repeated qualifications in such reports, and any significant relationship between such main types of qualifications and firm-specific variables. From 419 companies' audited reports chosen each year from the period 1997 to 2000, they found that 68.2% of sampled companies received an unqualified opinion while 19.9% of sampled companies had a qualified auditor's report. The most common type of qualification was the limitation of scope found in small companies and issued by non-Big Four audit firms. On the other hand, they found that disagreement with management qualifications were found to be more likely in larger companies and to be mostly issued by Big Four audit firms.

Using probabilistics neural networks in determining the identification of qualified opinion, Gaganis, Pasiouras & Doumpos (2007) found that firms with unqualified financial statements tended to be larger and generally in a beter position either in terms of profitability, efficiency, liquidity, activity or solvency. In addition, they found that credit risk rating provided significant information in discriminating between qualified and unqualified cases.

Relationships between auditors and their clients can build closeness with management that may unfavourably affect the auditor's independence and reduce the reliability and quality of the audit (Gates, Lowe, & Reckers, 2007). It is assumed that relationships that were “too close” have led to the external auditor's inability to examine transactions, and contributed to recent dramatic audit failures at several high-profile companies such as Enron and WorldCom (Gates, et al., 2007).

In Taiwan, Chi, Huang, Liao & Xie (2009) studied the effectiveness of mandatory audit partner rotation in promoting and perceived audit quality. They used audit data in Taiwan for five years and examined the effect of mandatory audit partner rotation on audit quality using absolute and signed performance-matched abnormal accruals as proxies for audit quality. They found that mandatory audit partner’s rotation may not necessarily improve audit quality.

Daugherty, Dickins & Higgs (2010) in their study on the benefits and costs of audit partner rotation concluded that the benefits of audit partner rotation were the:

1. opening of career paths to young partners through rotation;
2. improvement of independence in appearance and in fact;
3. reduced likelihood of inappropriate client attachment;
4. potential to enhance training and experience for new partners;
5. increase in depth of experience; and
6. increase in learning opportunities for staff through exposure to multiple partners.

On the other hand, they found that the costs associated with audit partner rotation were:

1. partners who were not fully effective in the first two years;
2. an increase in auditing costs due to inherent inefficiencies, moving costs, start-up time and shorter amortization period;
3. the increased risk of losing clients;
4. an increase in the incoming partner’s work load;
5. the loss of client-specific knowledge that could lead to reduced audit quality; and
6. the increased risk of a decline in audit quality when partner rotation was concurrent with a new Chief Financial officer.

Auditor independence is the foundation of the auditing profession and lengthy audit tenure with the same client has been cited as one of the threats to auditor independence (Nasser, Wahid, Nazri, & Hudaib, 2006). In the Malaysian context, Nasser et al.(2006) found that switching directions is mostly influenced by the relationship between directions of switch and type of audit firm with the length of tenure. This research uses a logistic regression model with auditor switching as its dependent variable, and auditors size and clients size as its independent variables with other control variables. Large audit firms were found to be able to secure longer tenure. For this reason, such differences in the length of tenure suggest independence impairment. However, those financially distressed clients are more likely to switch audit firms, and the smaller auditors would be more reluctant to qualify their reports or show disagreement with their clients for fear of being dismissed and losing a client. Thus, the implication of this unhealthy competition among audit firms may impair auditor independence and weaken audit quality.

3. RESEARCH METHODOLOGY

The main objective of this study was to analyse the different types of auditor's report and the mandatory audit partner's rotation for the period of five years with 147 sampled PLCs. Cross-tabulation and Chi-square test method was used to test the association between auditor's opinion and audit partner's rotation with audit firm size (Big Four and Non-Big Four Audit firms). A logistical regression was also used to test the relationship between audit partner's rotation and other influencing factors such as audit opinion, audit firm size and industrial sector among PLCs in Malaysia.

Thus, the hypotheses of this study are proposed to test research objectives as follows:

H1: There is an association between Audit Opinion and Audit Firm Size
H2: There is an association between Audit Partner's Rotation and Audit Firm Size
H3: There is an association between Audit Partner's Rotation and Audit Opinion
H4: There is a significant relationship between Audit Partner's Rotation and other influencing factors such as audit opinion, audit firm size and industry

3.1 Data Sources and Sampling Data

A cross-sectional review of audit reports of selected PLCs listed on Bursa Malaysia between 2005 and 2009 was undertaken. A period of five years was chosen in order to analyse the pattern of audit partner rotation within five years as specified in MIA By-Laws.

Originally, PLCs were listed on the Main Board, Second Board and MESDAQ Board in Bursa Malaysia. However, beginning from 3rd August 2009, PLCs listed on the Main Board and Second Board were merged and known as Main Market, and those listed on MESDAQ board were re-branded as ACE Market. For the purpose of this study, only companies listed on the Main Market were analysed.

At the time of data collection, 779 companies were listed on the Main Market and 116 companies on the ACE Market. The sample selected was initially 155 companies (20%) out of a population of 779 companies, based on the general scientific guidelines for sample sizes provided by Sekaran (2003), and the same selection method of sampling data was also adopted by Hudaib and Cooke (2005).

A stratified random sampling technique was used to originate the sample of each industry (see Table 1). Based on previous research, this sampling data has excluded the finance, exchange traded funds, mining and closed end funds industry due to different guidelines of reporting their financial statements and also due to unavailability of data.

A sample of PLCs comprising of 155 companies in 11 industries with break-down details is shown in Table 1. This sample data is considered to be representative of Non-Financial Malaysian Public Listed Companies. Information for the research variables was mainly extracted from the annual reports**.**

Table 1: Population and Sample Size Classified by Industrial Sector

Industrial Sector	Number of Companies Listed	%	Number of Companies Required	%
Construction	43	5.5	9	5.8
Consumer Product	131	16.8	26	16.8
Hotels	5	0.6	1	0.6
Industrial Product	254	32.6	51	32.9
IPC	7	0.9	1	0.6
Mining	1	0.1	0	0.0
Plantation	44	5.6	9	5.8
Properties	81	10.4	16	10.3
Real Estate Investment Trusts (REITs)	12	1.5	2	1.3
Technology	24	3.1	5	3.2
Trading and Services	177	22.7	35	22.6
Total	**779**	**100**	**155**	**100**

3.2 Measurement of Variables

The variables used in this study were derived from literature review that included Hudaib and Cooke (2005), Caramanisand Spathis (2006), Chow and Rice (1982), Krishnan et al. (1996), and Lai (2005). From the literature review, the study variables were differentiated as dependent and independent variables.

3.2.1 Measurement of Dependent Variables

In order to identify whether the familiarity threats exist in Malaysia, audit partner's rotation in Malaysia was examined. Since the audit report in Malaysia contains both the name of the audit firm and the audit partner, the relationship between audit partner rotations in deriving audit opinion can be explored. Thus, the coding structure for audit partner rotation was:

1 = no rotation of audit partner

2 = rotation of audit partner

Furthermore, in order to further determine the frequency of rotation, it was further classified as follows:

1 = no rotation

2 = one rotation in five years

3 = two rotations in five years

4 = three rotations in five years

5 = four rotations in five years

3.2.2 Measurement of Independent Variables

Audit opinion is not only being used by researchers to capture auditor independence (Hudaib & Cooke, 2005), but also as an instrument to measure audit quality (Carey & Simnett, 2006; Chow & Rice, 1982). Thus, this study uses type of audit opinion as the dependent variable where it will be distinguished by unqualified or unmodified opinion and other types of modified or qualified opinions.

1 = Unqualified opinion

2 = Qualified opinion

In order to determine further the types of modified or qualified opinion being issued, the audit opinion was further classified as 'emphasis of matters,' 'except for,' 'disclaimer' and 'adverse opinion.' Thus, the coding structure for auditor's opinion was:

1 = Emphasis of matters

2 = Except for opinion

3 = Disclaimer opinion

4 = Adverse opinion

In Malaysia, according to the MIA there are 27,573 members and 2,053 member firms registered with MIA (as of 2010). However, among the huge numbers of audit members registered, only four firms were classified as Big Four firms, namely PricewaterhouseCoopers, Ernst &Young, KPMG and Deloitte Kassim Chan (a member of Deloitte Touche Tohmatsu). There are a number of previous studies that have examined the types of audit firm with auditor's opinion. Thus, the coding structure for audit firm size was:

1 = Big Four Audit Firm

2 = Non-Big Four Audit Firm

3.2.3 The Chi-Square Test

The Chi-square test is ideally used to test the relationship between categorical data. According to Pallant (2007), there are two different types of chi-square test involving categorical data; 1) the chi-square test for goodness of fit; and 2) chi-square test for independence. The chi-square test for goodness of fit explores the proportion of cases that fall into the various categories of a single variable and compares these with hypothesis value. On the other hand, the chi-square test for independence is used to determine whether the two categorical variables are related (Pallant, 2007).

For this study, the Chi-square test for independence was employed to justify whether there was a significant relationship among the variables tested. The Chi-square test for independence was used in order to determine the relationship between two categorical variables (Coakes, Steed & Price, 2008). In addition, according to Pallant (2007), it compares the frequency of cases found in the various categories of one variable across the different categories of another variable. According to Chow and Rice (1982), a significant value for the chi-square would indicate whether the two variables were dependent on each other. Consistent with Gravetter and Wallnau (2004), the formula used for the Chi-square test for independence is as follows:

$$x^2 = \sum \frac{(O - E)^2}{E} \qquad (1)$$

Where O is the observed frequency, E is the expected frequency and $\sum$ indicates that we must sum the indicated fractions for each category in the study.

3.2.4 The Logistic Regression Test

Further analysis is needed to test for the relationship between audit partner's rotation and the types of auditor's report. According to Meyers, Gamst & Guarino (2006), to study a categorical dependent variable, logistic regression model was the best way to test it. They added, in a typical logistic regression model, there will always be one dependent variable which is categorical in nature and usually a set of independent variables either dichotomous or quantitative, or some combination thereof. The following logistic regression model was used to test the relationship between audit partner's rotation and other influencing independent variables such as the types of audit opinion, audit firm size, and client industry.

$$Pt = f(\beta 0 + \beta 1OPIt + \beta 2AFSIZEt + \beta 3INDt + \varepsilon t) \qquad (2)$$

P*t* is a binary variable indicating whether the audit partners rotate or not. It represents whether there is audit partner's rotation, or if there is no rotation. Thus, the coding will be

P1 = No

P2 = Yes

OPIt represents whether the audit opinion is unqualified/unmodified or qualified/modified. Thus, the coding will be

OPI1 = Unqualified

OPI2 = Qualified

AFSIZEt represents the types of audit firm. According to Hudaib and Cooke (2005), audit firms were classified as Big Eight in 1986. However, the Big Eight became Big Six and then Big Five and lastly Big Four, as a result of mergers and/or suspension. For the purpose of this study and data sources used, the classification of audit firm size was based on Big 4. Thus, the coding will be written as;

AFSIZE1 = Big Four Audit Firm

AFSIZE2 = Non-Big Four Audit Firm

In addition, the three main industries that represent the large number of companies listed in Bursa Malaysia are the Consumer Product, Industrial Product and Trading and Services industries. Thus, it seems significant to test whether those industries have a significant relationship with audit partner's rotation. Consequently, the coding will be written as:

IND1 = Consumer Product, Industrial Product and Trading and Services

IND2 = Other industries

4. RESULTS AND DISCUSSION

This section presents the findings of the study. Section 4.1 explains the composition of the representative data of PLCs before Section 4.2 presents the descriptive analysis of the sample data. Section 4.3 shows the independent test for goodness for the hypotheses test number: 1, 2 and 3. Section 4.4 discusses the logistic regression for the hypothesis test number 4 – to test the relationship between Audit Partner's Rotation and other influencing factors such as audit opinion, audit firm size and industry. Finally, Section 4.5 summarizes the statistical results of hypotheses test and the empirical findings.

4.1 Composition of the Sample Data

Table 2 shows the number and percentage of PLCs required and the sample data included in this study based on the related industries. The largest number of companies selected come from the industrial product industry (IPC) with 46 companies (31.3%), followed by the trading and services industry with 32 companies (21.8%), consumer product industry with 26 (17.7%) companies, and the smallest number selected comes from the properties industry with 16 (10.9%) companies. There were nine companies in the construction and plantation industries, which represented 6.1% each, followed by the technology industry with five companies (3.4%). REITs, hotel and IPC industries provided the smaller number of companies selected with two companies and one company each respectively, which represented 2.7%.

Table 2: Composition of observation and final sample included

Industrial Sector	Number of Companies Required	%	Number of Companies Included	%
Construction	9	5.8	9	6.1
Consumer Product	26	16.8	26	17.7
Hotels	1	0.6	1	0.7
Industrial Product	51	32.9	46	31.3
IPC	1	0.6	1	0.7
Mining	0	0.0	0	0.0
Plantation	9	5.8	9	6.1
Properties	16	10.3	16	10.9
Real Estate Investment Trusts (REITs)	2	1.3	2	1.4
Technology	5	3.2	5	3.4
Trading and Services	35	22.6	32	21.8
Total	**155**	**100**	**147**	**100**

4.2 Descriptive Analysis

The number of observations was equal each year because data was eliminated if the company's financial report was missing even for one year. The first objective of this study was to identify the types of auditor's report of PLCs in Malaysia for the period of five years. Thus, in answering the first objective, data of financial reports over five years was needed. The selected years were 2005, 2006, 2007, 2008 and 2009. Thus, Table 3 presents the number of observations according to cross-tabulation of industries and the financial years which show that the total observations from the sample are 735 from PLCs over a period of five years.

Table 3: Cross-Tabulations of Observations

Industry	Financial Year					Total
	2005	**2006**	**2007**	**2008**	**2009**	**2005 - 2009**
Construction	9	9	9	9	9	45
Consumer Product	26	26	26	26	26	130
Hotels	1	1	1	1	1	5
Industrial Product	46	46	46	46	46	230
IPC	1	1	1	1	1	5
Plantation	9	9	9	9	9	45
Properties	16	16	16	16	16	80
REITs	2	2	2	2	2	2
Technology	5	5	5	5	5	25
Trading and Services	32	32	32	32	32	160
Total	**147**	**147**	**147**	**147**	**147**	**735**

4.3 Audit Report

The first objective of this study was to identify and analyse the different types of auditor's report for the period of five years. Table 4 presents the cross-tabulations of the different types of audit opinion and the related years of Financial Statements Audit. From the five-year period, 659 annual reports were provided with unmodified or unqualified opinion while 76 annual reports were given the modified opinion. With the same number of companies selected each year, the number of annual reports that received a modified or qualified opinion had increased year by year except for year 2006 where the number of modified or qualified opinions in annual reports had reduced from 11 (7.5%) in 2005 to 10 (6.8%) in that year. There were upward trends for modified or qualified opinion in 2007 until 2009, with 13 (8.8%) in 2007, 20 (13.6%) in 2008 and 22 (15%) modified or qualified opinions issued in 2009.

Table 4: Total Distribution of Audit Opinion for the period of five years

Year	**Audit opinion**				**Total**
	Unmodified		**Modified**		
	Number of reports	%	Number of reports	%	
2005	136	92.5	11	7.5	147
2006	137	93.2	10	6.8	147
2007	134	91.2	13	8.8	147
2008	127	86.4	20	13.6	147
2009	125	85.0	22	15.0	147
Total	**659**	**89.7**	**76**	**10.3**	**735**

Table 5 and Figure 1 present the cross-tabulations of different types of modified opinion and the financial years. The 'emphasis of matter' opinion had been issued in 43 PLC annual reports for the five-year period. This was followed by the 'disclaimer' opinion in 22 annual reports, the 'except for' opinion in nine annual reports, and the two annual reports which contained the 'adverse' opinion. This finding was consistent with the previous study carried out by Hudaib and Cooke (2005) where the 'emphasis of matter' opinion became the most popular form of modified or qualified auditor's report as compared to other types of modifications or qualifications.

Table 5: Total Distribution of Modified Opinions

Year	Modified / Qualified Opinions				Total
	Emphasis of Matter	**Except For**	**Disclaimer**	**Adverse**	
2005	4	2	3	2	11
2006	4	3	3	0	10
2007	7	3	3	0	13
2008	15	1	4	0	20
2009	13	0	9	0	22
Total	**43**	**9**	**22**	**2**	**76**

Figure 1: Total Distribution of Modified or Qualified Opinions

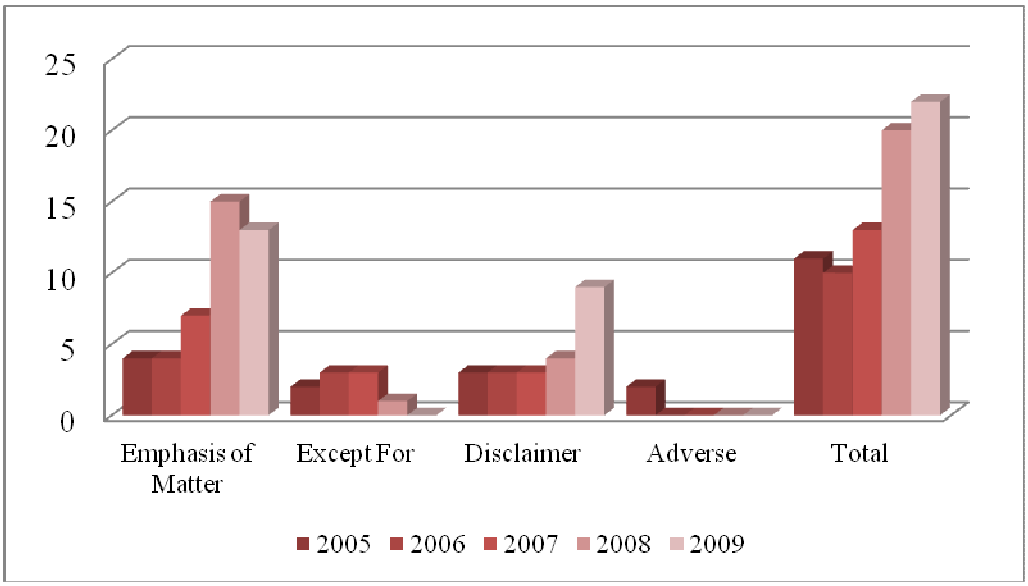


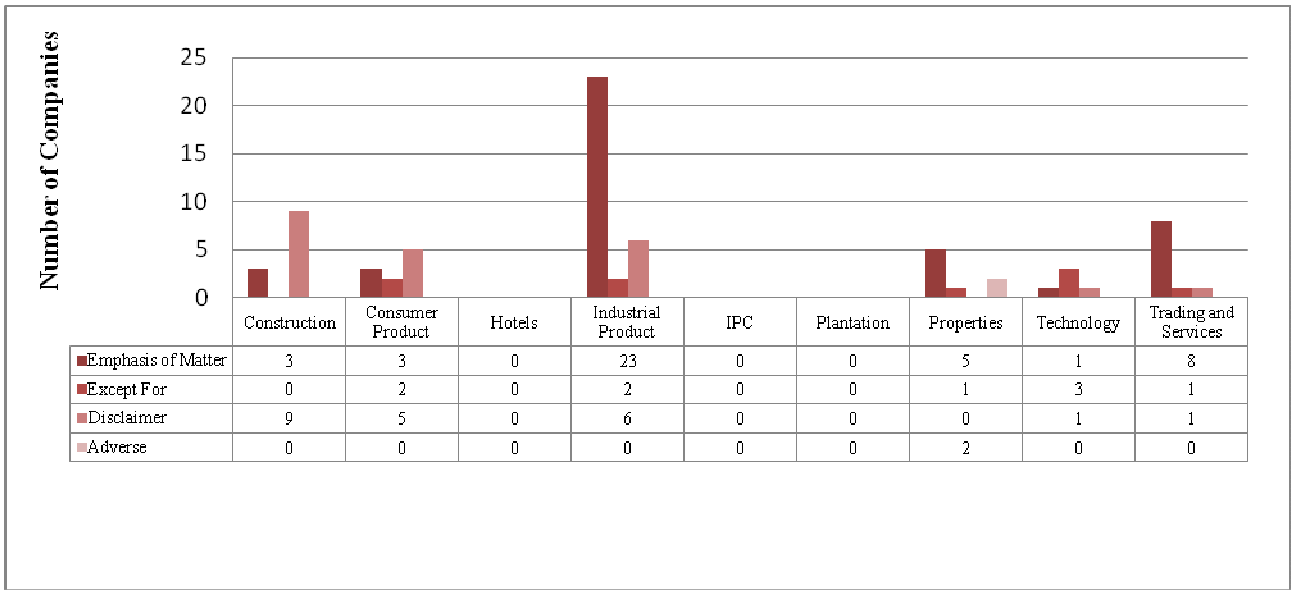
Table 6 presents the cross-tabulations of different types of audit opinion and industries. It was observed that 90% of companies (659 out of 735 PLCs) were provided with the unqualified or clean audit report for the period of five years. For modified or qualified audit report, PLCs of the construction industry had the highest percentage of 'modified' or 'qualified' opinion with 26.7% (12 out of 45 PLCs). This was followed by the technology industry with 14.3% (five out of 35 PLCs) receiving 'qualified' opinion. About 13.5% (31 out of 230 PLCs) of the industrial product sector received 'qualified' opinions, compared to only 10% (eight out of 80 PLCs) from the properties industry. Consumer product and trading and services industry received 10 qualified opinions each in the five-year period, represented by 7.7% and 6.2% respectively of the industry samples. However, no companies in the hotel, IPC or plantation industries received 'qualified' opinion for five years.

Table 6: Total Distribution of Two Types of Audit Opinions and Industries

Industry	Audit Opinion				Total
	Unqualified		Modified or Qualified		
	Number of companies	%	Number of companies	%	
Construction	33	73.3	12	26.7	45
Consumer Product	120	92.3	10	7.7	130
Hotels	5	100.0	0	0.0	5
Industrial Product	199	86.5	31	13.5	230
IPC	5	100.0	0	0.0	5
Plantation	45	100.0	0	0.0	45
Properties	72	90.0	8	10.0	80
Technology	30	85.7	5	14.3	35
Trading and Services	150	93.8	10	6.2	160
Total	**659**		**76**		**735**

Further analysis was conducted to show the different types of 'qualified opinion' received by each of the respective industries. Figure 2 explains the distribution of modified or qualified opinions and industries.

Figure 2: Total Distribution of Different Types of Qualified Opinions and Industries



The industrial product type of PLCs show the highest number of modified opinions with 23 companies having ‘emphasis of matter’ opinions, two companies having ‘except for’ opinions and six companies being issued ‘disclaimer’ opinions. The construction industry received the second highest percentage of ‘qualified’ opinions with a total of 12 qualified reports. Nine of them were disclaimer opinions while the remaining three were ‘emphasis of matter’ opinions.

The consumer product industrial sector received three ‘emphasis of matter’ opinions and five ‘disclaimer’ opinions. Eight ‘emphasis of matter’ opinions were issued to trading and service industry companies, together with one ‘except for’ opinion and ‘disclaimer’ opinion each. The properties industry was the only industry that received ‘adverse’ opinion with two out of 160 samples selected. In addition, five ‘emphasis of matter’ opinions and one ‘except for’ opinion were issued to properties industry companies; compared to one ‘emphasis of matter’ opinion, three ‘except for’ opinions and one ‘disclaimer’ opinion for the technology industry.

4.4 Auditor’s Report and Audit Firm’s Size

The second objective of this study was to analyse the different types of auditor’s report issued by The Big Four and Non-Big Four audit firms for the period of five years (2005 until 2009). To answer the second objective, a 2 x 2 contingency table was constructed to show the association between audit opinion and audit firm size. This approach has been taken by Hudaib and Cook (2005), where a 2 x 2 contingency table was used in order to test the strength of association between auditors’ opinion and auditor switching on distressed companies.

Table 7 shows that out of 659 annual reports that received unqualified opinion, about 494 (75.0%) were issued by Big Four audit firms while the remaining 165 (25%) were issued by Non-Big Four firms. On the other hand, out of 76 qualified opinions issued, 47 (61.8%) were issued by Big Four audit firms and only 29 (38.2%) qualified opinions were issued by Non-Big Four firms. This descriptive result is in line with what has been found by Johl, et al. (2007) where Big Five auditors in Malaysia appear to qualify more often than Non-Big Five audit firms.

For hypothesis test no: 1, the chi-square test is carried out in order to test the association between audit opinion and audit firm size. The results of the chi-square test are presented in Table 7. According to Pallant (2007), to have significant association, the significant value needs to be 0.05 or smaller, and the result of the chi-square test shows a significant value of .014, ($p < .05$) in association. On top of that, the Pearson value is 6.037 which is greater than the critical value with 1 degree of freedom at 3.84.

Thus, the statistical result suggests that there is an association between audit opinion and audit firm size. **Thus, H1 is accepted.** This finding however contradicts what has been found by Caramanis and Spathis (2006), who found that the relationship between audit firm size and audit opinion is not significant.

Table 7: The association between audit opinion and audit firm size

Audit firm Size	**Audit opinion**				**Total**
	Unqualified	%	Qualified	%	
Big Four	494	75.0	47	61.8	541
Non-Big Four	165	25.0	29	38.2	194
Total	659	100	76	100	735

Note: Chi-Square (x^2) = 6.037($p = .014$)

4.5 Audit Partner's Rotation and Audit Firm's Size

The third objective of this study was to analyse the mandatory rotation of audit partners of the Big Four and Non-Big Four audit firms for the period of five years. However, in order to analyse the partner rotation, the client company that switched audit firm was excluded from the 147 sample companies that were selected. Thus, as presented in Table 8 and Figure 3, there were 125 (85%) companies that did not rotate the audit firm, and this data was used in examining the audit partner rotation.

Table 8: Audit Firm Rotation

	Number of Companies	%
Did not rotate audit firm	125	85.0
Rotated audit firm	22	15.0
Total	147	100.0

Figure 3: Audit Firm Rotation

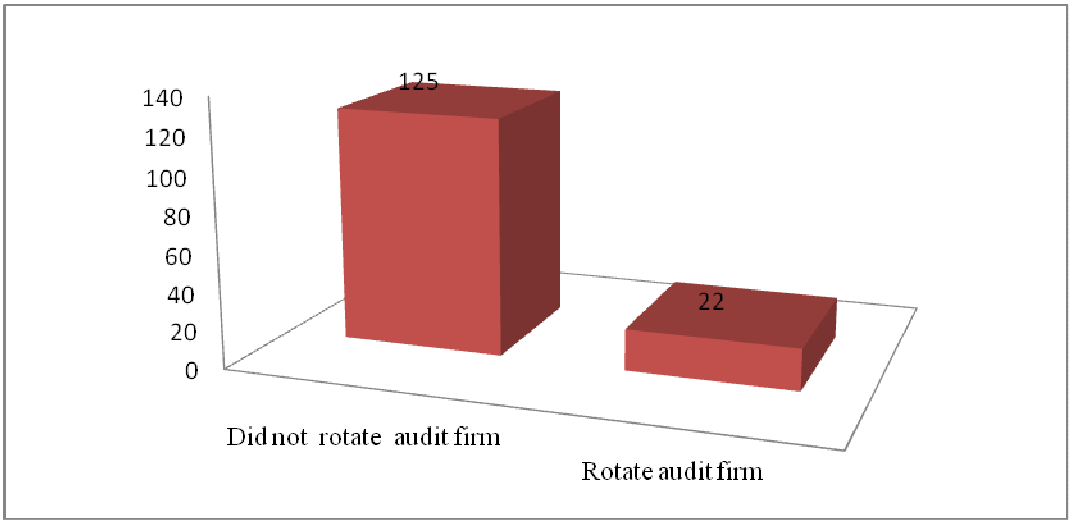


Table 9 shows the association of audit partner's rotation with audit firm's size. The descriptive result indicates that out of total 125 companies that were analysed, 91 companies audited by Big Four firms showed 80 companies (76.2%) experienced audit partner's rotation, compared to only 24 companies (23.8%) audited by Non-Big Four firms, which experienced audit partner's rotation.

The result of the chi-square test shows a significant value of 0.021 ($p < .05$) difference in association. On top of that, the Pearson value is 5.315 which is greater than the critical value with 1 degree of freedom at 3.84. Thus, the result suggests that there is an association between the audit partner's rotation and audit firm size. **Thus, H2 is accepted.**

Table 9: The Association between Audit Partner's Rotation and Audit Firm Size

Audit Firm Size	Audit Partner's Rotation				Total
	Yes	%	No	%	
Big Four	80	76.2	11	52.0	91
Non-Big Four	24	23.8	10	48.0	34
Total	104	100	21	100	125

Note: Chi-Square (x^2) = 5.315 (p = .021)

Next, the audit partner's rotation was further analysed according to the frequency of rotation done in the five-year period. Table 10 and Figure 4 represent the total distribution of audit partner's rotation. Out of 91 companies audited by Big Four firms, 50 companies experienced rotation of audit partner at least once in five years at the time the audit firm was in office. The number of partners rotated two times in five years decreased to 25 companies, and only five companies experienced a three-time rotation of their audit partners from the Big Four firms.

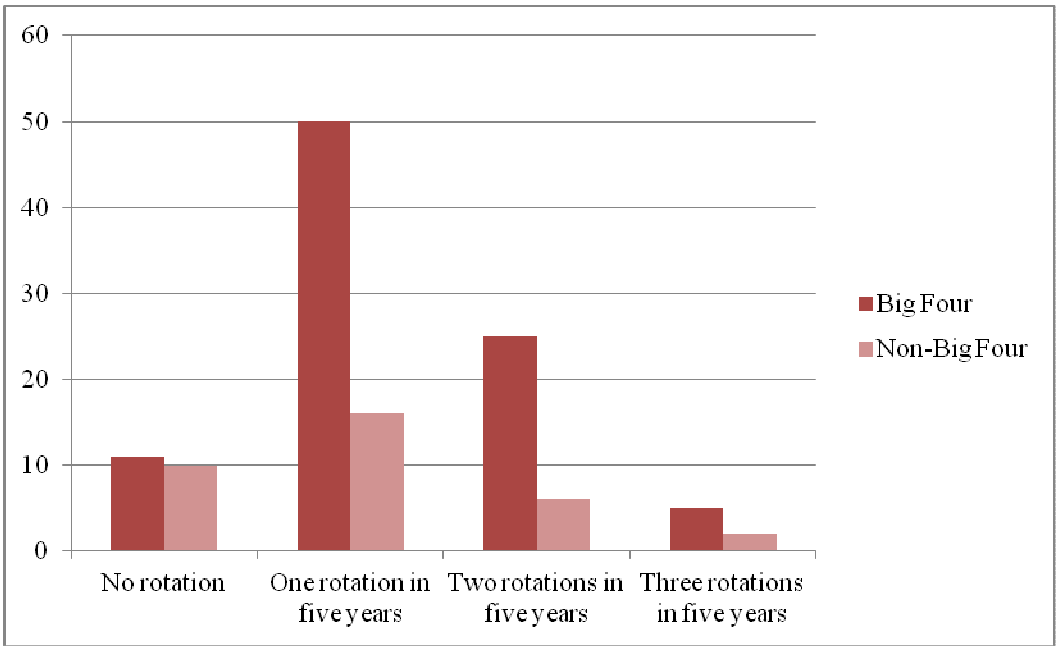
The trend is similar to the auditor's rotation for client companies which were audited by the Non-Big Four firms. The highest rotation of 16 audit partners in the Non-Big Four firms happened only once in five years. Six companies experienced a two-time rotation during the five-year period, and two companies experienced a three-time rotation of audit partners from the Non-Big Four firms, respectively.

However, none of the PLCs had rotated audit partners of the Big Four or Non-Big Four firms respectively more than four times in five years.

Table 10: The Cross-Tabulation Between Audit Partner's Rotation and Audit Firm Size

Audit Firm	No rotation	One rotation in five years	Two rotations in five years	Three rotations in five years	Total
Big Four	11	50	25	5	91
Non-Big Four	10	16	6	2	34
Total	21	66	31	7	125

Figure 4: The Cross-Tabulation Between Audit Partner's Rotation & Audit Firm Size



4.6 The Relationship between Auditor's Report and Audit Partner's Rotation

The fourth objective of this study was to analyse whether the rotation of audit partners had an association with auditor's opinion in year 2009. Again, the chi-square test was performed in order to test the association between auditor's report and audit partner's rotation. According to Pallant (2007), the lowest expected frequency in any cell should be 5 or more. Thus, the result met the assumptions guideline for the test of chi-square for independence. Table 11 represents the result of cross-tabulation between audit report and audit partner's rotation.

Table 11: The association between audit report and audit partner's rotation

Audit Opinion	**Audit Partner's Rotation**				**Total**
	Yes	%	No	%	
Unqualified	109	86.5	16	72.7	125
Qualified Opinion	17	13.5	5	27.3	22
Total	126	100	21	100	147

Note: Chi-Square (x^2) = 1.506 (p = .220)

The result indicates that 109 (86.5%) audit reports were ‘unqualified’ opinions with the existence of audit partner rotations. In addition, there were only 17 ‘qualified’ opinions issued with the existence of audit partner rotation.

The result of the chi-square test showed a significant value of 0.0220, ($p > .05$) difference in association. On top of that, the Pearson value was 1.506 which was smaller than the critical value with 1 degree of freedom at 3.84. The result suggests that there was no significant association between the audit partner’s rotation and the issuance of audit opinion. **Thus, H3 is rejected.**

From the cross-tabulation table above, there were 16 companies (representing 72.7% of companies) that did not experience audit partner rotation, which received unqualified opinion, compared to only five companies that received ‘qualified’ opinion in 2009. Thus, it should be viewed as a serious matter, considering the mandatory audit partner’s rotation.

4.7 Logistic Regression Analysis

The last objective of this study is to test the relationship between audit partner’s rotation and audit opinion, audit firm size and industry.

This model contains one dependent variable i.e. audit partner’s rotation, and three independent variables (audit opinion, audit firm size, and industry). The results of the logistic regression are presented in Table 11.

The full model containing all predictors was statistically significant, x^2 (3, N=125) = 8.186 , $p < .05$, indicating that the model was able to distinguish between the existence of audit partner’s rotation and non-existence of audit partner’s rotation. Thus, **H4 is accepted** where there is a significant relationship between Audit Partner’s Rotation and the other influencing variables (Audit Opinion, Audit Firm Size and Industry). The model as a whole explained between 5.4% (Cox and Snell R square) and 9.7% (Nagelkerke R Square) of the variance in audit partner rotation and correctly classified 85.7% of cases.

As shown in Table 12, only one of the independent variables (Audit Firm Size) made a unique, statistically significant contribution to the model, recording an odds ratio of 0.334. Thus, the result is in line with the result in Hypothesis 2 (H2), where there is an association between the audit partner's rotation and audit firm size. This indicates that, for every additional rotation done, it was done 0.334 times more frequently, by Big Four Firms.

The audit opinion, however, did not show a significant contribution to the model and it was confirmed with the previous result of hypothesis 3 (H3), where there was no association between audit partner's rotation and audit opinion.

Table 12: Logistic Regression Result

	B	**S.E.**	**Wald**	**df**	**Sig.**	**Odds Ratio**	**95% C.I.for Odds Ratio**	
							Lower	Upper
Opinion	.748	.593	1.589	1	.207	2.113	.660	6.762
Audit Size	-1.067	.498	4.588	1	.032	.334	.130	.913
Industry	-.907	.509	3.174	1	.075	.404	.149	1.095
Constant	1.885	.591	10.165	1	.001	6.589		

Note: Chi-Square (x^2) = 8.186 ($p = .042$)

4.8 Summarised Results

This section presents the data analysis of the result pertaining to research objectives and hypotheses formulated in section 3. The chi-Square tests accept the H1: there is an association between Audit Opinion and Audit Firm Size and H2: there is an association between Audit Partner's Rotation and Audit Firm Size, but rejects H3: there is an association between Audit Partner's Rotation and Audit Opinion. Thus, the results show that there is no association between Audit Partner's Rotation and Audit Opinion.

A logistic regression analysis was done in order to answer H4: there is a significant relationship between Audit Partner's Rotation and the other influencing variables (Audit Opinion, Audit Firm Size and Industry). The following section will conclude this study, addressing its limitations, and giving recommendations for future research.

5. CONCLUSION AND RECOMMENDATIONS

This study aimed to describe and analyse the auditor's report and audit partner's rotation among PLCs in Malaysia over a period of years (2005 until 2009). Firstly, the different types of auditors' reports were analysed to identify the types of opinion that were received by the listed companies in Malaysia. Secondly, further analysis of auditors' reports was carried out in order to study the association of the different types of opinion issued, with the two types of audit firms' size (Big Four and Non-Big Four). Thirdly, the mandatory audit partner rotations were analysed by considering only the companies that did not switch or rotate the audit firm. The relationship between the audit partner's rotation and auditor's report was also explored. Lastly, a logistic regression analysis was done to test the relationship between audit partner's rotation and other influencing study variables such as the types of audit opinion, audit firm size and industry.

There were 147 companies selected from 11 industries for the sampling data of the five-year period, making a total of 735 annual report observations. Overall, the results showed that 76 annual reports received a 'qualified' opinion while of the rest of the total samples, 89.7% (659) were unqualified opinions. In the fifth year (2009), 22 (15.0%) qualified reports were issued – the highest number of qualified reports issued, compared to other years. Only 10 (6.8%) qualified opinions were issued in 2006, making it the year with the least number of qualified opinions issued.

Further analysis was done in order to classify the qualified opinion into four (4) types of modification i.e. 'except for,' 'disclaimer' and 'adverse' together with 'emphasis of matter.' The results indicated that 57% (43 out of 76) qualified opinions were 'emphasis of matter' opinions. 29% (22 out of 76) 'disclaimer' opinions were issued, with 12% (nine) 'except for' opinions, and only 3% (two) 'adverse' opinions issued from 2005 until 2009.

The highest qualified opinions were issued to industrial product industries, with a total of 31 annual reports, followed by the construction industry and trading and services industry, where 12 and 10 qualified reports were issued, respectively. There were three types of industries that did not receive 'qualified' opinions, i.e. the hotel, IPC and plantation industries.

The second objective of this study was to analyse the association between audit opinion and audit firm size. The descriptive statistical result found that Big Four audit firms issued more qualified opinions compared to Non-Big Four firms, while the chi-square test showed H1 was accepted where there was a significant association between audit opinion and audit firm size.

A total of 147 companies were examined in order to analyse the mandatory rotation of audit partners of The Big Four and Non-Big Four firms over the period of five years. This finding helped to answer hypothesis 2 (H2) on whether there was an association between Audit Partner's Rotation and Audit Firm Size.

After eliminating the companies that rotate audit firms, 125 companies that did not rotate the audit firm were selected and analysed. The descriptive result indicated that out of the 125 companies that were analysed, 91 companies were audited by the Big Four, with 80 companies experiencing audit partner rotation, compared to only 24 (23.8%) companies that were audited by Non-Big Four firms that had experienced audit partner rotation. On the other hand, the chi-square test showed a significant association between audit partner rotation and audit firm size and thus, H2 was also accepted.

The fourth objective of this study was to analyse whether the rotation of audit partners had an association with audit reports in 2009. The result indicated that 109 (86.5%) audit reports were 'unqualified' opinions with the existence of audit partner rotations. In addition, there were only 17 'qualified' opinions issued with the existence of audit partner rotation. The result of the chi-square test showed that the association between audit partner rotation and audit opinion was not significant. Thus, hypothesis 3 (H3) on whether there was an association between audit partner rotation and audit opinion was rejected.

The last objective of this study was to examine whether there was a significant relationship between audit partner rotation and audit opinion, audit firm size, and industry. The statistical result from the logistic regression indicates that the regression model was able to distinguish between the existence of audit partner rotation and non-existence of audit partner rotation. Thus, H4 was accepted where there was a significant relationship between Audit Partner's Rotation and other influencing variables such as Audit Opinion, Audit Firm Size and Industry.

6. APPENDICES

Appendix 1

List of Companies

1. ABRIC BERHAD
2. ADVANCE SYNERGY BERHAD
3. ADVANCED PACKAGING TECHNOLOGY (M) BHD
4. ADVENTA BERHAD
5. AE MULTI HOLDINGS BERHAD
6. AIC CORPORATION BERHAD
7. AIRASIA BERHAD
8. AJIYA BERHAD
9. AKN TECHNOLOGY BHD
10. ALIRAN IHSAN RESOURCES BERHAD
11. AMTEL HOLDINGS BERHAD
12. AMWAY (MALAYSIA) HOLDINGS BERHAD
13. ANALABS RESOURCES BERHAD
14. ANN JOO RESOURCES BERHAD
15. ASTRAL SUPREME BERHAD
16. ATIS CORPORATION BERHAD
17. AV VENTURES CORPORATION BERHAD
18. AXIS INCORPORATION BERHAD
19. BANENG HOLDINGS BHD
20. BASWELL RESOURCES BERHAD
21. BCB BERHAD
22. BERJAYA LAND BERHAD
23. BERTAM ALLIANCE BERHAD
24. BONIA CORPORATION BERHAD
25. BP PLASTICS HOLDING BHD
26. CAB CAKARAN CORPORATION BERHAD
27. CAHYA MATA SARAWAK BERHAD
28. CB INDUSTRIAL PRODUCT HOLDING BERHAD

29. CCK CONSOLIDATED HOLDINGS BERHAD
30. CENTURY LOGISTICS HOLDINGS BERHAD
31. CHOO BEE METAL INDUSTRIES BHD
32. CLASSIC SCENIC BERHAD
33. CN ASIA CORPORATION BHD
34. CNI HOLDINGS BERHAD
35. COMPUGATES HOLDINGS BERHAD
36. CYCLE & CARRIAGE BINTANG BERHAD
37. CYMAO HOLDINGS BERHAD
38. DEGEM BERHAD
39. DELLOYD VENTURES BERHAD
40. DNP HOLDINGS BHD
41. DREAMGATE CORPORATION BHD
42. EKOVEST BERHAD
43. EKRAN BERHAD
44. EMICO HOLDINGS BERHAD
45. ENGTEX GROUP BERHAD
46. EONMETALL GROUP BERHAD
47. EUPE CORPORATION BERHAD
48. EURO HOLDINGS BERHAD
49. EVERMASTER GROUP BERHAD
50. FABER GROUP BERHAD
51. FIMA CORPORATION BERHAD
52. FOCAL AIMS HOLDINGS BERHAD
53. FORMOSA PROSONIC INDUSTRIES BERHAD
54. FRASER & NEAVE HOLDINGS BHD
55. FSBM HOLDINGS BERHAD
56. GADANG HOLDINGS BHD
57. GAMUDA BERHAD
58. GLOBAL CARRIERS BERHAD
59. GLOMAC BERHAD
60. GOPENG BERHAD

61. GRAND CENTRAL ENTERPRISES BHD
62. GRAND HOOVER BERHAD
63. GROMUTUAL BERHAD
64. HAP SENG CONSOLIDATED BERHAD
65. HO HUP CONSTRUCTION COMPANY BHD
66. HO WAH GENTING BERHAD
67. HOCK SIN LEONG GROUP BERHAD
68. HONG LEONG INDUSTRIES BERHAD
69. HOVID BERHAD
70. HUNZA PROPERTIES BERHAD
71. HYTEX INTEGRATED BERHAD
72. IGB CORPORATION BERHAD
73. IQ GROUP HOLDINGS BERHAD
74. IREKA CORPORATION BERHAD
75. JAKS RESOURCES BERHAD
76. JAYCORP BERHAD
77. JERASIA CAPITAL BERHAD
78. JOHN MASTER INDUSTRIES BERHAD
79. JPK HOLDINGS BERHAD
80. JT INTERNATIONAL BERHAD
81. KEN HOLDINGS BERHAD
82. KESM INDUSTRIES BERHAD
83. KHEE SAN BERHAD
84. KIA LIM BERHAD
85. KIM HIN INDUSTRY BERHAD
86. KLUANG RUBBER COMPANY (MALAYA) BERHAD
87. KOBAY TECHNOLOGY BERHAD
88. KOTRA INDUSTRIES BERHAD
89. KRISASSETS HOLDINGS BERHAD
90. KUALA LUMPUR KEPONG BERHAD
91. LAFARGE MALAYAN CEMENT BHD
92. LAND & GENERAL BERHAD

93. LAY HONG BERHAD
94. LEADER STEEL HOLDINGS BERHAD
95. LINEAR CORPORATION BERHAD
96. LITYAN HOLDINGS BERHAD
97. LONDON BISCUITS BERHAD
98. LTKM BERHAD
99. LUSTER INDUSTRIES BHD.
100. MAHAJAYA BERHAD
101. MALAYSIA PACIFIC CORPORATION BERHAD
102. MALAYSIAN PACIFIC INDUSTRIES BERHAD
103. MALTON BERHAD
104. MBM RESOURCES BHD
105. MEGA FIRST CORPORATION BERHAD
106. METECH GROUP BERHAD
107. NAM FATT CORPORATION BERHAD
108. NV MULTI CORPORATION BERHAD
109. OCI BERHAD
110. P.I.E. INDUSTRIAL BERHAD
111. PEMBINAAN LIMBONGAN SETIA BERHAD
112. PERAK CORPORATION BERHAD
113. PHARMANIAGA BERHAD
114. PJBUMI BERHAD
115. POS MALAYSIA BERHAD
116. PWE INDUSTRIES BERHAD
117. RAMUNIA HOLDINGS BERHAD
118. RANHILL BERHAD
119. RUBBEREX CORPORATION (M) BERHAD
120. SATANG HOLDINGS BERHAD
121. SCOMI GROUP BERHAD
122. SMIS CORPORATION BERHAD
123. STAMFORD COLLEGE BERHAD
124. STAR PUBLICATIONS (MALAYSIA) BERHAD

125. SUNGEI BAGAN RUBBER COMPANY (MALAYA) BERHAD
126. SUPERMAX CORPORATION BERHAD
127. SYARIKAT KAYU WANGI BERHAD
128. SYMPHONY HOUSE BHD
129. TA ANN HOLDINGS BERHAD
130. TAI KWONG YOKOHAMA BERHAD
131. TANAH EMAS CORPORATION BERHAD
132. TANJUNG OFFSHORE BERHAD
133. TDM BERHAD
134. TEXCHEM RESOURCES BERHAD
135. TIEN WAH PRESS HOLDINGS BERHAD
136. TOMYPAK HOLDINGS BERHAD
137. TONG HERR RESOURCES BERHAD
138. TRANSMILE GROUP BERHAD
139. TSH RESOURCES BERHAD
140. UCHI TECHNOLOGIES BERHAD
141. UNITED MALACCA BERHAD
142. UTUSAN MELAYU (MALAYSIA) BERHAD
143. VTI VINTAGE BERHAD
144. WARISAN TC HOLDINGS BERHAD
145. WOODLANDOR HOLDINGS BHD
146. YI-LAI BERHAD
147. YTL LAND & DEVELOPMENT BERHAD

Appendix 2

List of Auditors

a. BIG 4

1. ERNST & YOUNG
2. DELOITTE KASSIM CHAN
3. KPMG
4. PRICE WATERHOUSE COOPERS

b. NON-BIG 4

1. SF YAP & CO
2. SHA TAN & CO
3. MORRES ROWLAND
4. KRESTON JOHN
5. RAJA SALLEH & LIM
6. MONTEIRO & HENG
7. SQ MARISSON
8. PETER LIM CHONG
9. TH KUAN & CO
10. GRANT THORNTAN
11. HORWATH
12. HLB LEE LUM
13. YEO & ASSOCIATES
14. BDO BINDER
15. LIM KAM HOONG & CO
16. RALI THOMAS, & RAMACAN
17. AZMAN WONG SALLEH
18. TY ASSOCIATES
19. WONG WENG FOO & CO
20. ONG BOON BAH
21. GEP ASSOCIATES
22. ANNUARUL AZIZAN CHEW
23. CK ASSOCIATES

24. RUSSEL
25. LC COMPANY
26. YC CHONG
27. HANAFIAH
28. Al-JEFRI DEAN
29. LIM KANG HOONG
30. ROGER YU
31. UHY DIONG
32. SAMSIR JASANI
33. KHOO WONG CHAN
34. HALS & ASSOCIATES
35. HII & LEE
36. LEOU & ASSOCIATE
37. YEAP CHENG CHUAN
38. PAUL CHUAH & CO.

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BRONZE AWARD

CORPORATE GOVERNANCE PRACTICES OF ISLAMIC FINANCIAL INSTITUTIONS IN MALAYSIA

Professor Dr. Maliah Sulaiman

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CORPORATE GOVERNANCE PRACTICES OF ISLAMIC FINANCIAL INSTITUTIONS IN MALAYSIA

ABSTRACT

Given the phenomenal increase in Islamic banking activities globally, it is important that there exists good governance practices of Islamic financial institutions (IFIs). This is primarily to ensure its sustainability in the long run. More importantly, in order for Islamic banks to play an optimum role in the development of Islamic countries, it is pertinent to develop regulatory structures to control fraud, exploitation, and un-Islamic behaviour. Additionally, the development of strong governance practices will win public confidence and thereby promote trust amongst equity holders, investors and other parties dealing with these IFIs. However, promulgating and developing standards and guidelines on corporate governance (CG) may not be adequate. What is needed is the examination of the extent to which IFIs are actually following such guidelines. This is precisely what we have attempted to do. There were two stages to the study. A disclosure index was first developed using the guidelines issued by the Central Bank of Malaysia (BNM), the standard on CG promulgated by the Accounting and Auditing Organization of Islamic Financial Institutions (AAOIFI), and the framework introduced by the Islamic Financial Services Board (IFSB). The index developed in the first stage was then used to assess the annual reports of all 16 IFIs operating in Malaysia. This paper reports on the second stage of the study. The results do not appear too promising. On a scale of 0 to 100, the CG disclosure index ranges from a low of 42.28 to a high of 68.29, with the average score hovering around 51.42. The implications of the results, the limitations of the study and suggestions for future research are also discussed.

1. INTRODUCTION

A series of corporate failures of "giant" corporations worldwide (e.g. Enron, Tyco, WorldCom, Parmalat, etc.) has shaken the confidence and trust of stakeholders. Consequently, this has brought increasing attention to corporate governance (CG) issues. More importantly, the issue of transparency has now become pertinent. Bhat, Hope and Kang (2006) opine that the knowledge of a firm's governance practices is useful in assessing the credibility of financial information presented in its annual report. This is because governance-related disclosure aids users in assessing the quality of information and guides stakeholders in more accurately setting expectations about the future of an organization's performance. Specific to Islamic banking, one observes a proactive stance on the part of regulators to improve the regulatory and supervisory framework in supporting higher CG standards for Islamic financial institutions (IFIs). Given the uniqueness of IFIs, an international guideline developed by OECD or the Cadbury Report may not address CG issues of IFIs as governance structure is industry specific (Adam and Mehran, 2005).

In line with the global focus on CG, various regulatory bodies for IFIs have moved a considerable distance toward improving the regulatory and supervisory framework in developing higher CG standards. The CG Guidelines and standards issued by the Accounting and Auditing Organizations of Islamic Financial Institutions (AAOIFI), the Islamic Financial Services Board (IFSB) and the Central Bank of Malaysia (BNM) are some examples. Such guidelines may improve the governance practices of IFIs and thus enhance transparency. However, promulgating and developing standards and guidelines on CG are insufficient. What is needed is the examination of the extent to which IFIs are actually complying with such guidelines. This is precisely what the study attempts to do. Specifically, this research will examine CG disclosure practices of IFIs in Malaysia using a two stage process. The first stage is the development of a comprehensive CG index. Consistent with prior studies, the index acts as a proxy for disclosure quality. The comprehensive corporate governance disclosure (CGD) Index used in this study is based on three governance guidelines and Codes promulgated by AAOIFI, IFSB and the Central Bank of Malaysia (later on collectively referred to as 'Guidelines'). The CG index developed was then used to assess the quality of CG of IFIs in Malaysia. This constituted the second stage of the study which is the focus of this paper.

The study contributes to the literature in several important respects. The use of a comprehensive index to examine CG practices of IFIs in Malaysia will greatly enhance the literature on CG in IFIs. Second, the CG index developed from three recently released governance guidelines available to IFIs (2006, 2007 and 2008) speaks of the currency of the research. Finally, the division in terms of general and specific governance related information, to the authors' knowledge, is a first in studies concerning CG and IFIs. Understanding the quality of CG disclosure by examining its extent and focus is a fundamental starting point in gaining insights into the preference of IFIs on CG disclosure information. The remainder of the paper is structured as follows: the following section discusses the literature review while section 3 focuses on our study. Section 4 describes the data collection and the findings while section 5 concludes.

2. LITERATURE REVIEW

Corporate governance (CG), broadly defined, is a set of processes, policies and laws affecting the way an organization is directed, administered and controlled. Bansuch, Pate and Thies (2008) defined CG as a set of formalised values and procedures implemented by the owners, directors and the management of the business in its various operations as well as its interactions with stakeholders. From the perspective of IFIs, governance specifically addresses issues pertaining to the role and conduct of the *Shariah* Supervisory Boards (SSB). More specifically, CG of IFIs should include the following:

i. Safeguarding interests of Investment Account Holders.
ii. Compliance with the *Shariah.*
iii. Governance and risk management of Mudaraba and Musharaka contracts and
iv. Establishment of a comprehensive CG framework articulating the fiduciary responsibilities of the board and senior management.

A focus on all the above will lead to an improvement in the level of trust and confidence in the Islamic finance industry (Iqbal and Greuning, 2008). More importantly, AAOIFI claims that strong governance practices will win public confidence and thereby promote trust amongst their equity holders, investors and other parties. Subsequently, this will enhance *Shariah* compliance.

In order to examine if indeed there exist differences between CG of IFIs and other organizations, it is important to understand what the unique characteristics of IFIs are, in the first instance. The uniqueness of IFIs emanates from its fundamental principle to conduct its operations in accordance with Islamic *Shariah*, the primary issue being the prohibition of the receipt and payment of *riba* (interest). A pre-determined fixed rate of return on capital where one party bears the risk while the other party receives a reward irrespective of the outcome of the use of the borrowed amount, would mean an uneven distribution of risk and reward in the transaction. More importantly, *riba* also leads to the concentration of wealth by transferring wealth from the poor to the rich. This is primarily why *riba* is prohibited. The alternative to avoid dealing with interest is the various forms of profit-sharing contracts that are peculiar to Islamic banking. These contracts are said to enhance justice and equitable distribution of profits and risks in investment (Bashir, 1984).

Archer and Karim (2007) identified two main types of accounts offered by IFIs to mobilize funds from customers. The first is the profit-sharing and loss-bearing *mudharabah* contract. This type of limited duration investment account is distinct from equity shares. The relationship between the investment account holders (IAH) and the bank is that of a provider of funds and a fund manager. More importantly, there is a transfer of control over investment decisions from the IAHs to the bank as a *mudharib.* Thus, the IAHs have no right to intervene in the *mudharib's* decisions over the funds. Further, IAHs do not possess any right of governance or oversight, making this a unique feature of IFIs and IAHs. This pertinent aspect of *mudharabah* then gives rise to the importance of proper governance procedures in order to ensure the rights of IAHs are not compromised. In the absence of a right to manage, the only choice possible to IAHs is the right to withdraw their funds when there is dissatisfaction with the bank's performance. Udovitch (1970) argued that in a *mudharabah* contract, the bank as a *mudharib* acts as a steward with respect to the capital entrusted to it. As such, the bank is not liable for any losses occurring in the normal course of business *and* if there is no negligence (Archer and Karim, 2007: 315).

Another major issue pertinent to IFIs is the need for IFIs to balance financial performance with ethical behaviour. The latter provides an incentive to disclose governance-specific information which may not necessarily contribute to financial outcomes but increase the possibility of attaining fairness and equity for a larger group of stakeholders. In several important respects, the specificities of IFIs impact on how CG should be structured. According to Erricco and Farahbaksh (1998) depositors of

Islamic banks have more incentive to assess the performance of banks because their capital value and returns on investment deposits are not fixed and guaranteed. The outcomes of their investment depend on the bank's performance in investing depositors' funds. Indeed, the incentive to scrutinise the performance of banks by depositors is to ensure protection of the capital value of their funds as well as to ensure that the rates of return paid to them reflect a fair application of the Profit and Loss Sharing (PLS) principles (Erricco and Farahbaksh, 1998:14).

Lewis (2005) contends that there are two aspects that give shape to the nature of Islamic corporate governance (ICG). The first aspect is the *Shariah*. The *Shariah* claims sovereignty over all aspects of human life including ethical and social matters. Thus, every act of believers must conform to the *Shariah* and ethical standards derived from Islamic principles. The ethical principles define what is true, fair and just, the nature of corporate responsibilities, the priorities to society, along with some specific governance standards. Ethical production and distribution are regulated by the *halal-haram* code and adhere to the notion of *'adl* (justice). The second aspect is the specifics of Islamic economics and financial principles. For example, issues such as *zakah* (the alms tax), the ban on *riba* (usury) and the prohibition on speculation have a direct impact on corporate practices and policies.

Specific to the appointment of board of directors, Chapra (2007) identified three matters of importance. The first pertains to the need for board members to possess a high degree of moral integrity and professional competence in the banking business. These qualities may help them to effectively perform their expected duties toward the institutions. Second is to ensure that the board member is well-versed in *Shariah* matters concerning Islamic banking. Finally, board members must make sure that there is adequate transparency in disclosure of the activities of IFIs. More specifically, IFIs must adhere to guidelines and/or standards laid down by the supervisory authority of the country. In Malaysia, for example, the guidelines issued by the Central Bank of Malaysia would rank supreme.

3. THE STUDY

The present study merely concentrates on the *quality* of CG information disclosure practices by IFIs in Malaysia. It focuses on examining the extent of CG information disclosed by IFIs, and the difference of CG disclosure quality between local- and foreign-owned IFIs in terms of their preference regarding the prioritization of the specific or general kind of governance information in their annual reports in 2009. Basically, we argue that there are two categories of CG information: the general (GCGi) and specific (SCGi) CG information. The first type of governance information targeted at operational efficiency is common in all kinds of commercial entities. However, the second type of governance information is to pursue and exclusively secure the attainment of goals set by Maqasid *Shariah*. The concern for both types of governance information by IFIs may be seen as an equilibrium response to the wide spectrum of an institution's obligation to commercial and religious affairs. However, the SCGi may be of particular importance as the philosophy of Islamic financial business dealings, as enshrined by the *Shariah*, promote relatively greater reliance on the equity (*Mudharabah* and *Musyarakah*) or the PLS modes of financing (Chapra and Ahmed, 2002:1). In such arrangements, IFIs and their stakeholders (particularly IAHs) become partners in the relationship. Further, in such a relation, the partnership attributes (i.e., commitment, coordination and trust) and communication behaviours are vital as determinants of the successful relationship between partners.

Drawing on a simple steward and principal model, we argue that firms will be particularly motivated to disclose specific governance-related information as and when they realise that these elements are the antecedent of their trustworthiness to guarantee their accountability towards the fair operation of the banks. Thus, the tendency of IFIs is to prioritize specific kinds of governance information as it is considered an attempt to gain the trust of their stakeholders. Furthermore, it is directed to achieve goal alignment based on shared culture and norms that strictly adhere to the requirements of the *Shariah*. The underlying ideas in reference to their focus on governance-related information are that GCGi is usually pursued with the aim of maximising the financial performance of the banks.

Meanwhile, the specific-governance information, which may not be directly related to the financial implications for the banks, might be important to serve as a basis "to build trust, elicit cooperation and create a shared vision amongst those involved in the firms" (Lewis and Algaoud, 2001: 160). Brown and Caylor (2006) argued that governance matters which are unrelated to firm value (such as SCGi, which does not necessarily directly contribute to economic enhancement), might be of importance for other purposes, such as for the case of IFIs.

Specifically, IFIs alter their policies to exactly match the intrinsic organizational motivations with their stakeholders' in creating a shared portfolio focusing on the preferred mix of financial and religious issues in business affairs. Further, given that foreign-owned IFIs have a broader community (ummah), such IFIs are likely to make more disclosure relating to governance information as their status to operate on a global level puts them in a position to adopt foreign governance guidelines in addition to domestic standards. This is primarily to attract the confidence of stakeholders both at home and abroad. Thus, we argue that foreign-owned IFIs will exhibit different levels of compliance with the Guidelines (hence CGD quality), to reflect the different quality of governance. As a specialised contributor, foreign banks are highly dependent on the global scale of stakeholders. As the case may be, the foreign banks may be subjected to close supervision by the headquarters (if they are subsidiaries) or the regulators of their origin countries.

Thus, this study assumes that foreign banks are also affected by the standards and guidelines applied to headquarters for control purposes. Regulators in their origin country may impose rules on foreign banks, which might not be the same as the rules of the domicile country. The tendency to adopt several standards aside from the domestic guidelines is highly likely for foreign banks. Accordingly, and as indicated earlier, it is expected that higher governance information disclosure quality can be expected from foreign banks.

4. DATA COLLECTION AND FINDINGS

4.1 The Index

A comprehensive CG index was first developed using the guidelines issued by the Central Bank of Malaysia (BNM), the standard on CG promulgated by the Accounting and Auditing Organization of Islamic Financial Institutions (AAOIFI) and the framework introduced by the Islamic Financial Services Board (IFSB). Altogether there were 123 items grouped into 14 dimensions as follows:

D1: Board structure and functioning	(D1-1:21)*
D2: Nominating committee	(D2-25:32)
D3: Remuneration committee	(D3-33: 41)
D4: Risk management committee	(D4-42: 49)
D5: Audit committee/ Audit & governance committee	(D5-50: 61)
D6: *Shariah* committee/ *Shariah* Supervisory board	(D6-62: 76)
D7: Risk management	(D7-77: 85)
D8a and 8b: Internal audit and control	(D8-86: 93)
D9: Related parties transaction	(D9-94: 95)
D10: Management report	(D10-96: 97)
D11: Non-adherence to guidelines	(D11-98: 99)
D12: Customers/ Investment account holders	(D12-100: 113)
D13: Governance committee	(D13-114: 119)
D14: *Shariah* compliance	(D14-120: 123).

* Items in brackets denote the number of items in the dimension

On the basis of the above, the maximum score that IFIs can achieve is 123 items. Disclosing all 123 items will indicate full compliance with CGD Index. Further, as discussed earlier, in order to examine if IFIs are actually disclosing items that reflect their unique nature, CG items are grouped into two categories, GCGi and SCGi. The former (i.e. GCGi) comprises D1 (Board structure and functioning), D2 (Nominating committee), D3 (Remuneration committee), D4 (Risk management committee), D5 (Audit committee or Audit and governance committee), D7 (Risk management), D8 (Internal audit and control; (a) general-governance information and (b) specific-governance information), D9 (Related parties transaction), D10 (Management report), and D11 (Non-adherence

to guidelines). These dimensions are oriented towards the achievement of operational efficiency to lead to an achievement in economic objectives. The SCGi consists of D6 (*Shariah* committee or *Shariah* Supervisory board), D12 (Customers/Investment account holders), D13 (Governance committee), and D14 (*Shariah* compliance). These dimensions extend the orientation towards the realization of ethical and social corporate values through the application of partnership-based business principles. The split into ten dimensions of general-governance related information and four4 dimensions of specific-governance related information provides an opportunity to understand the inclination of the type of CG information being disclosed by IFIs in Malaysia. Specifically, the specific CG information (SCGi) constitutes dimensions that align with the unique characteristics of IFIs such as *Shariah* compliance, *Shariah* committee, Governance committee (specifically indicated in the IFSB guidelines) and Investment account holders (IAH).

4.2 The Results

We examined the annual reports of 16 IFIs in Malaysia; ten local- and six foreign-owned banks. Content analysis was used to determine the extent IFIs comply with the index. A score of "1" was given if a particular item was reported and a score of "0" if the item was not included in the annual report. A CGD Index score, consistent with Pahuja and Bhatia (2010), was then computed using the following formula:

$$\text{CGD Index} = \frac{\text{Total Score of the Individual Bank}}{\text{Maximum Possible Score Obtainable by the Bank}} \times 100$$

4.2.1 CG Disclosure Quality of IFIs

Table 1 presents the overall CG disclosure index score of each IFI. The extent of compliance indicates the quality of disclosure. Thus, the assumption taken in the study is that greater disclosure of CG information (according to the index) will be regarded as having higher quality CG disclosure. Theoretically, the CGD Index could range from zero (0) to one hundred (100) percent. A bank that reports all 123 items will score 100 percent.

Table 1- CG disclosure quality of each IFI (N=16)

No.	Names of IFIs	Total Score	Disclosure as % of maximum possible score	Overall Rank
	Local-Owned Banks			
1	*Affin Islamic Bank Berhad*	53	43.09	12
2	*Alliance Islamic Bank Berhad*	76	61.79	2
3	*Bank Islam Malaysia Berhad*	62	50.41	8
4	*Bank Muamalat Malaysia Berhad*	66	53.66	6
5	*CIMB Islamic Bank Berhad*	69	56.10	4
6	*EONCAP Islamic Bank Berhad*	54	43.90	10
7	*Hong Leong Islamic Bank Berhad*	66	53.66	6
8	*Maybank Islamic Bank Berhad*	57	46.34	9
9	*Public Islamic Bank Berhad*	66	53.66	6
10	*RHB Islamic Bank Berhad*	84	68.29	1
	Total	**653**	**530.90**	
	Average score (N=10)	**65.3**	**53.09**	
	Foreign-Owned Banks			
11	*Al Rajhi Banking & Investment Corporation (Malaysia) Berhad*	63	51.22	7
12	*Asian Finance Bank Berhad*	71	57.72	3
13	*HSBC Amanah Malaysia Berhad*	67	54.47	5
14	*Kuwait Finance House (Malaysia) Berhad*	54	43.90	11
15	*OCBC Al-Amin Bank Berhad*	52	42.28	13
16	*Standard Chartered Saadiq Berhad*	52	42.28	13
	Total	**359**	**291.87**	
	Average score (N=6)	**59.83**	**48.65**	
	Grand total	1012	822.77	
	Average Score (N=16)	63.25	51.42	

As indicated in Table 1, RHB Islamic Bank Berhad had the highest score at 68.29% while Standard Chartered Saadiq Berhad and OCBC Al-Amin Bank Berhad had the lowest at 42.28% in 2009. The highest score for foreign-owned IFIs was Asian Finance Bank Berhad at 57.72%. Interestingly, it is the foreign-owned IFIs that had the lowest CG score. The average score for all IFIs was 51.42% which is just above the half way mark. Additionally, the results revealed that of the 16 IFIs, ten (62.5%) had an index of more than 50%. According to Wallace (1988), a score of more than 50% can be considered as "good disclosers." Consistent with this viewpoint, one may conclude that overall, IFIs in Malaysia may be regarded as "good" disclosers of CG information. Further, it can be observed that the mean score recorded by locally-owned IFIs at 53.09% is slightly higher than foreign-owned IFIs (48.65%). This evidence seems inconsistent with the expectation that CG quality is better in foreign-owned IFIs.

4.2.2 Disclosure of Each Dimension

We then examined the extent of IFIs' reporting on each CG dimension (D1 to D14). A comparison between local- and foreign-owned IFIs was also undertaken. Table 2 presents the results of the overall mean scores for each dimension partitioned by ownership classification of IFIs (i.e. whether local or foreign owned). The rankings for the overall mean scores are given to illustrate the relative importance of CG disclosure practices of IFIs. Additionally, a bar chart is included in the appendix for ease of reference on the overall rankings.

Table 2

CG Disclosure of IFIs Partitioned into GCGi and SCGi

Dimensions	No. of sub-items	Overall Mean (N=16)	Overall Mean Rank	Local-owned IFIs Mean (N=10)	Sig.	Foreign-owned IFIs Mean (N=6)
GCGi						
D1: Board structure and functioning	24	66.67	4	69.58	.172	61.81
D2: Nominating committee	8	81.25	2	82.50	.262	79.17
D3: Remuneration committee	8	69.53	3	85.00	.106	43.75
D4: Risk management committee	8	85.16	1	87.50	.415	81.25
D5: Audit committee/ Audit & Governance committee	12	62.50	7	60.83	.695	65.28
D7: Risk management	9	54.86	9	53.33	.861	57.41
D8a: Internal audit and control	6	33.33	10	33.33	1.00	33.33
D9: Related parties transactions	2	65.63	5	70.00	.628	58.33
D10: Management reports	2	62.50	6	55.00	.182	75.00
D11: Non-adherence to guidelines	2	9.38	13	0.00	.059*	25.00
Overall for GCGi	**81**	**60.95**		**60.10**	**.355**	**60.37**
SCGi						
D6: Shariah committee/ SSB	16	59.38	8	63.13	.086*	53.13
D8b: Internal audit and control	2	9.38	12	15.00	.150	0.00
D12: Customers/ investment account holders	14	2.63	14	2.10	.439	3.50
D13: Governance committee	6	0.00	15	0.00	-	0.00
D14: Shariah compliance	4	28.13	11	22.50	.059*	37.50
Overall for SCGi	**42**	**26.37**		**27.07**	**.151**	**25.20**
Overall for CGDs index	**123**	**51.42**		**53.09**	**.301**	**48.64**

(*) A significant difference at the 10 percent level (2-tailed).

As can be observed, the overall results of the CG disclosure analysed by dimensions indicate that the most frequently reported elements are on the risk management committee (Dimension 4) followed closely by information on the nominating committee (Dimension 2). Interestingly, information on risk management had a score of only 54.86; a score that is way below that of the risk management committee. This appears to indicate that while IFIs do have risk management committees, they are not willing to provide as much information on their risk management procedures. Alternatively, this may signal a lack of proper risk management procedures in place. Thus, this may be interpreted to mean that a having well-established risk management committee does not necessarily lead to enhanced disclosure on risk management issues or the presence of proper risk management procedures.

The scores for Dimension 8a (Internal audit and control; mean score of 33.33) and Dimension 14 (*Shariah* compliance; mean score of 28.12) were also considerably low. The least disclosed dimension was information pertaining to Customers/Investment account holders (mean score of 2.68). However, what is most alarming is the total absence of information on the governance committee (Dimension 13). The importance of the governance committee (GC) is emphasized by the IFSB. The IFSB prescribes a number of characteristics in an effective GC such as having a non- executive director as the chairman of the committee and having at least a minimum of three members on the committee – a member from the Audit committee, a *Shariah* scholar elected by SSB of the bank and an independent non-executive director. The IFSB further elaborated on the GC by stating that,

> "GC whose functions are distinctly different from a conventional audit committee is made particularly because IFIs operate investment accounts which are not in the form of debt contract (as in the case of conventional fixed deposits), thus raising governance issues which have so far been overlooked. Conceptually, Mudharib in the investment account contract comprises both the IFIs' management and shareholders, not the management alone."

4.2.3 Between Local and Foreign Owned IFIs

A Mann-Whitney U test was then undertaken to examine if there existed any significant difference in the disclosure scores between local- and foreign-owned IFIs on each dimension. The only significant differences detected (at a 10% level of significance) were for D11 (Non-adherence to guidelines), D6 (*Shariah* committee) and D14 (*Shariah* compliance). For both D11 and D14, it was the foreign banks that were disclosing more. Accordingly, the hypothesis that foreign-owned IFIs have better quality CG disclosure may be *partially* supported. On issues pertaining to the *Shariah* committee, however, it is the local IFIs that were good disclosers. According to Wallace (1988), the results of more than half of the index score can be classified as "good disclosers."

4.2.4 Disclosure of SCGi versus GCGi

The literature advocating CG disclosures in IFIs emphasizes the necessity of reporting specific governance information unique to their nature, such as the internal *Shariah* review and bases for profit allocation between owner equity and IAHs (Hameed and Sigit, 2005). In line with this, we examined the difference between SCGi and GCGi for all IFIs on an overall basis (i.e. all IFIs). Subsequently, the analysis for local- and foreign-owned IFIs was undertaken separately. Finally, we examined each individual IFI. The results of these analyses are presented in Tables 2 and 3.

Overall, it can be observed that IFIs in Malaysia were focusing more on general governance information (60.95%) as compared to specific CG information (26.37%). Additionally, the percentage score for GCGi (again on an overall basis) was higher (63.95%) as compared to the score for SCGi (26.37%). This seems to indicate that less emphasis is being placed by IFIs on matters related to their specificity (to demonstrate their uniqueness). To examine if the focus on SCGi and GCGi was statistically significant, a Wilcoxon Signed Rank test was undertaken. The results indicate a significant difference between disclosure on SCGi and GCGi. Similar results were obtained when local and foreign IFIs were examined separately. Accordingly, one may conclude that IFIs in Malaysia appear to disclose CG information of a more generic nature. Further, the percentage of specific-governance information (SCGi) met by IFIs ranged from 19.51% for Bank Islam Malaysia Berhad and EONCAP Islamic Bank Berhad to 34.15% for Maybank Islamic Bank Berhad and RHB Islamic Bank Berhad. Thus, one may conclude that CG disclosure of SCGi is still at a nascent stage amongst IFIs in Malaysia. On the other hand, the percentage for GCGi lies within a range from 50% (Affin Islamic Bank Berhad) to 85.37% (RHB Islamic Bank Berhad).

Table 3 - The CG Disclosure Score of each IFI Partitioned by GCGi and SCGi

No.	Names of IFIs	GCGi (Max. 81 items)	Disclosure as % of maximum possible score	SCGi (Max. 42 items)	Disclosure as % of maximum possible score	Sig.*
	Local Owned Banks					
1	*Affin Islamic Bank Berhad*	41	50.00	12	**29.27**	
2	*Alliance Islamic Bank Berhad*	65	79.27	11	**26.83**	
3	*Bank Islam Malaysia Berhad*	54	65.85	8	**19.51**	
4	*Bank Muamalat Malaysia Berhad*	54	65.85	12	**29.27**	
5	*CIMB Islamic Bank Berhad*	58	70.73	11	**26.83**	
6	*EONCAP Islamic Bank Berhad*	46	56.10	8	**19.51**	
7	*Hong Leong Islamic Bank Berhad*	57	69.51	9	**21.95**	
8	*Maybank Islamic Bank Berhad*	43	52.44	14	**34.15**	
9	*Public Islamic Bank Berhad*	54	65.85	12	**29.27**	
10	*RHB Islamic Bank Berhad*	70	85.37	14	**34.15**	
	Overall mean (N=10)		**68.10**		**27.07**	**0.005*** **
	Foreign Owned Banks					
11	*Al Rajhi banking & Investment Corporation (Malaysia) Berhad*	53	64.63	10	**24.39**	
12	*Asian Finance Bank Berhad*	59	71.95	12	**29.27**	
13	*HSBC Amanah Malaysia Berhad*	55	67.07	12	**29.27**	
14	*Kuwait Finance House (Malaysia) Berhad*	45	54.88	9	**21.95**	
15	*OCBC Al-Amin Bank Berhad*	43	52.44	9	**21.95**	
16	*Standard Chartered Saadiq Berhad*	42	51.22	10	**24.39**	
	Overall mean (N=6)		**60.37**		**25.20**	**0.028** **
	Total	**839**	**1023.17**	**173**	421.95	
	Average Score (N=16)	**52.44**	**63.95**	**10.81**	**26.37**	**0.000*** **

(***) A significant difference at the 1 percent level (2-tailed).

(**) A significant difference at the 5 percent level (2-tailed).

5. CONCLUSION

Over the past decade, CG of IFIs has moved to become main stream and is increasingly prevalent in both academic debates, and, more generally, the international business media and conference circuit. IFIs pursue two primary objectives: sound financial performance and ethical operations that align with the *Shariah*. More importantly, IFIs exist to serve the needs of the *ummah*. The unique aspect of IFIs emanates from its fundamental principle to conduct and operate in accordance with the Islamic *Shariah*, the primary issue being the prohibition of *riba* (interest). Indeed, the fundamental issue addressed in this research is the extent to which IFIs in Malaysia provide CG information in their annual reports. On an overall basis, the mean score achieved by IFIs was recorded at 51.42 percent. Based on the benchmark rule set by Mohd Ghazali and Weetman (2006), the CG information disclosure in IFIs in Malaysia can be considered "good." Additionally, the minimum disclosure score was 42.28 percent (Standard Chartered Saadiq Berhad and OCBC Al-Amin Bank Berhad), and the maximum disclosure score was 68.29 percent (RHB Islamic Bank Berhad). A possible explanation for such low scores can be attributed to the fact that all three guidelines were only issued quite recently. Thus, it may take time before IFIs actually comply with the guidelines.

Summing up, even if the intrinsic objectives that characterise the 'best practices' governance are not perfectly attained yet, CG orientation in IFIs seems to converge on a pool of ethical and socially responsible issues that are wider than that in one generic industry. This can be traced back to the 14 dimensions covered in the annual reports of IFIs. For the overall CG disclosure of IFIs for year 2009, eight dimensions are dominant, which, in order, are Dimension 4 (Risk management committee), Dimension 2 (Nominating committee), Dimension 3 (Remuneration committee), Dimension 1 (Board structure and functioning), Dimension 9 (Related parties transactions), Dimension 5 (Audit committee/Audit and governance committee) and Dimension 10 (Management reports), and Dimension 6 (*Shariah* committee/*Shariah* supervisory board). The analysis goes on to test the first hypothesis concerning whether IFIs were actually disclosing more SCGi (i.e. D6, D8b, D12, D13 and D14). The expected strategy of CG structure in IFIs was that they must give due consideration to specific kinds of governance dimensions, which come together to compose the 'best practice' CG in the institution. The results, however, reveal that IFIs in Malaysia generally disclose more GCGi.

The considerations above allow this study to conclude that at the time this study was undertaken, IFIs tended to converge on general-governance related information – more related to information pertaining to risk management committee (RMC) and nominating committee (NC). It can be interpreted that the major concern for IFIs is handling various risks and hiring persons with the credentials to lead the institutions. Of less concern to IFIs is the disclosure of general-governance information pertaining to the non-adherence to guidelines (9.38 percent) and information pertaining to the specific kind of governance information, such as the information relating to *Shariah* compliance (28.13 percent), the specific part of internal audit and control (9.38 percent), and customers/ IAHs (2.63 percent). While information on governance committee was not a concern for any of the IFIs, other information, (in order of preference) on remuneration committee, board structure and functioning, related parties transactions, audit committee/AGC, management reports, *Shariah* committee/SSB and risk management were satisfactorily disclosed by IFIs (scores more than the 50% threshold). The provision of information on the general part of internal audit and control and *Shariah* compliance was minimal.

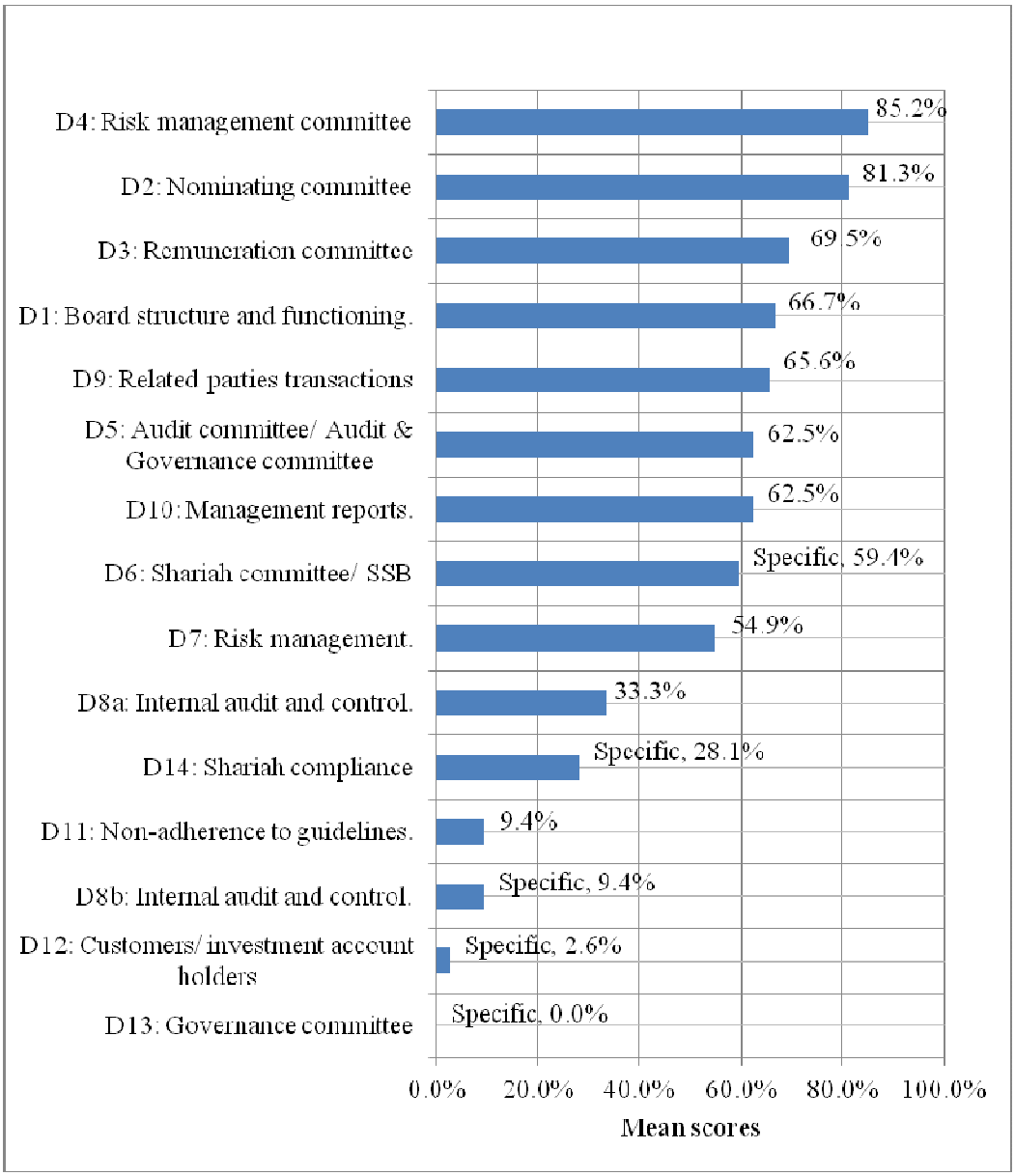
The analysis shows that IFIs seem to be in agreement about what structure should be set in the institution. The lack of SCGi disclosure may be attributable to deficiencies in the prevalent CG reporting framework and to the attitudes of IFIs' management concerning the perceived costs and benefits of CG disclosure. Nevertheless, the presence of such information (however minimal) in the annual reports of the IFIs is an indication of a growing awareness of the importance of this type of governance information. The limited supply of specific-governance information in the annual report of IFIs may possibly indicate that this kind of information is uncommon in annual reports but could be disclosed through other means such as companies' websites and pamphlets.

The study provides insights into the CG quality in both locally-owned and foreign-owned IFIs in Malaysia. In both instances, there is no requirement for an IFI to adopt suggested governance guidelines and yet this study found some evidence that they do so voluntarily. In addition, the overall qualities to which voluntary governance guidelines are implemented are considerably satisfactory as they met more than half of the items in the CGD index developed. Also detected was the existence and nascent development of the disclosure of the specific-governance related information.

The challenge before IFIs today is to improve all crucial aspects of CG that are unique to them, as in the specific CG information that has been suggested in this study. More specifically, IFIs should focus on information pertaining to the *Shariah* committee/SSB, specific matters on internal audit and control, customers/investment account holders, detailed information on governance committees and *Shariah* compliance aspects. Various banking crises over time have dramatically illustrated the catastrophic consequences flowing from the poor corporate governance of banks (Yunis, 2007). To provide a cushion against these flaws, there is a need to have a rigorous re-evaluation of CG principles of IFIs. This is important as CG may be regarded as a key factor in understanding the institution and its management. Good CG is pertinent as this will enhance investor confidence in the decisions taken by the managers and board of directors of the institution (Gandia, 2008) – more so in the case of IFIs.

6. APPENDIX 1

CG Disclosure Practices of IFIs in Malaysia



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CONSOLATION PRIZE

FRAUD OCCURRENCE: EVIDENCE FROM EMERGING MARKET MALAYSIA

Ms Zuraidah Mohd Zam

Associate Professor Dr. Pok Wee Ching

FRAUD OCCURRENCE: EVIDENCE FROM EMERGING MARKET MALAYSIA

ABSTRACT

The main objective of this study is to examine the possible factors in the corporate environment which may contribute to fraud occurrence in Malaysia by investigating whether there are any differences in corporate governance, earnings management activities and compensation structure between scandal and non-scandal firms. The sample of this study consisted of 57 scandal firms matched with non-scandal firms. The scandal firms are the Malaysian public listed companies which have been reported to be involved in fraud from the years of 1995 to 2008. Paired t-test and the Wilcoxon signed-rank test were conducted to examine the differences of the scandal firms compared to those of the non-scandal firms. The results show that the independent directors of scandal firms were holding fewer directorships. Besides that, there is evidence to show that scandal firms reported lower earnings and paid out lower dividends. However, no significant differences are found in the compensation structure of the executive directors in both sets of the sample. The results of the factor analysis reveal four significant factors that may contribute to fraud occurrence which is (1) aggressiveness in managing the company (2) the indication of low dividend payment (3) the ineffective independent committees and (4) the influence of a powerful and dominant position inside a company.

1. INTRODUCTION

Acts of fraud have been responsible for the collapse of many high-profile companies. Among companies which have fallen victim to fraud are 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), illustrating the fact that fraud is an international phenomenon (Albrecht, Albrecht and Albrecht, 2008). The companies that have been convicted of fraudulent activities have also faced legal action from the regulatory authorities. Some directors of the companies were punished through penalty charges and there were a number of companies which were delisted or subsequently subjected to bankruptcy (Beasley, Carcello and Hermanson, 1999). In addition to the offending directors and auditors being charged in court, unfortunate employees were traumatised by unemployment when the companies closed down (Beasley et al., 1999;

Rezaee, 2005; Wright, 2007). Furthermore, the convictions ruined the reputations of the companies involved; often the amount of damage or losses was huge and irreparable.[1]

Ramaswamy (2005) confirmed the link between the likelihood of fraud occurrence and weak corporate governance. According to him, the firms that were involved in fraud had poor corporate governance rating prior to their collapse. When a company's corporate governance is weak, there is a tendency for its management to commit financial transgressions because there is no effective control mechanism governing the management. Numerous studies have suggested that the characteristics of board structure which may constitute possible factors that lead to fraud occurrence include large board size, small percentage of outside directors and busy directors[2]. Besides board structure, the CEO leadership structure also can be a contributing factor to a company's vulnerability to malpractices including internal fraud. Early studies reveal that CEO leadership issues pertaining to duality function and tenure of service are factors that contribute to the likelihood of companies being involved in fraud[3]. In addition, possessing a substantial managerial ownership in a company is said to be another factor which has been linked to the occurrence of fraud.

Other than weak corporate governance, earnings management is seen as another factor linked to fraud occurrence. 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' forecasts, to attempt to conform to earnings trend and to allocate performance-based compensation for top management.

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[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) reflect the heavy toll such crimes take 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 between 2008 and 2009 was estimated at about USD2.9 trillion.

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

[3] Hermalin and Weisbach (1991), Beasley et al. (1999), Farber (2005), Persons (2006), etc.

Another possible causative factor of fraud in companies is their top managements' compensation structure. According to Albrecht et al. (2008), inappropriate executive/management incentives could be one of the reasons which cause large-scale fraudulent acts. These potential benefits motivated these beneficiaries at top management to focus on increasing the relevant share prices instead of effective management of the companies (Cheng and Warfield, 2005; Crutchley, Jensen and Marshall, 2007; Albrecht et al., 2008).

Malaysia has been surprised by 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 fraud in financial reporting, Transmile Group Berhad encountered a highly significant fall in its share price from a previous price of RM14.40 to a mere 35.5 sen 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 fraud occurrence in Malaysia.

[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 with embezzling RM3.1 million of company funds. 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.

There is much published literature on fraud being conducted within commercial entities in developed countries[5]. Unfortunately, less research has been initiated in emerging countries such as Malaysia. 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 the corporate governance practices, existence of earnings management activities and directors' compensation structures between Malaysian scandal firms and non-scandal firms. This study also employed 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. The target sample of this study constituted Malaysian public listed companies which had experienced fraud incidents between the years 1995 and 2008. This approach for the detection of potential fraud should assist relevant parties such as shareholders, management, investors, policy makers, authorities and others as a useful reference to predict the possibilities of future fraud occurrence among Malaysian companies.

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. Sutherland pointed out that the persons who committed white-collar crimes were often trusted persons who held accountable positions in an organisation. These offenders often perceived 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 led fraudsters to violate ethical standards to commit fraud. Cressy's research findings established three elements that cause fraudulent acts. The three elements are (1) perceived pressure, (2) perceived opportunity, and (3) rationalization. These three elements were also highlighted in the Statement on Auditing Standards (SAS) No. 99, *Consideration of Fraud in Financial Statement Audits* (Hogan, Rezaee, Riley and Velury, 2008).

[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.

Perceived pressure is the 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 expectations by market analysts, thus reflecting the company's positive performance. The perceived pressure may also be due to 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 an act of fraud, 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 an ineffective board of directors due to a lack of outside 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 (Farber, 2005; Dorminey, Fleming, Kranacher and Riley, 2010).

The final element identified in the fraud triangle is rationalization; in words, it is the ability to explain, defend or make excuses to defend the criminal behaviour that is the fraudulent action (Albrecht et al., 2007). The researchers have mentioned that when one has a well-developed ability to rationalise, it will increase the possibility of the person committing fraud. They also assert that usually people who are dishonest have the tendency to rationalise more than an honest person. They will attempt to convince themselves of some justification and indulge in seemingly rational means of moral acceptance for their wrongdoing (Dorminey et al., 2010).

2.2 Fraud Studies

For the purpose of this study, this paper will discuss the prior literature related to the three possible areas which are considered to have links with fraud elements i.e. (1) the company's weak corporate governance practices (perceived opportunity element), (2) earnings management activities (perceived pressure element) of the firm, and (3) its compensation structure (perceived pressure element).

2.2.1. Corporate Governance

Rezaee (2005) asserted that weak corporate governance is one of the factors that caused the fraud events in Enron, WorldCom and other scandal firms[6]. The three corporate governance features which were strongly related to fraud were board structure, leadership structure and ownership structure[7].

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. Therefore, the first main hypothesis of this study is:

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

There is evidence to suggest board size may have an effect on corporate governance. Jensen (1993) posited that a smaller board is more functional and amenable to CEO control. Persons (2006) stated that effectiveness of non-financial reporting is compromised if board size is large. Another study by Ahmed, Duellman and Abdel-Meguid (2008) revealed a negative correlation between a company's board size and its earnings management activities. 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 had 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. From the above literature, this study proposes that:

H1a: There is a significant difference in board size between scandal firms and non-scandal firms.

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[6] The researcher explained that among the weak corporate governance practices that contributed to these debacles were (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).

[7] 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), etc.

Many studies have examined the percentage of outside directors in a company's board. It is crucial to have outside 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). Beasley (1996) compared 75 U.S.A. fraud firms with 75 non-fraud firms and found that boards in non-fraud firms had a significantly higher percentage of outside directors compared to fraud firms[8]. A study conducted in Malaysia by Mohd. Saleh, Mohd. Iskandar and Rahmat (2005) found that even though many independent directors sat on a board, it failed to prevent the CEO/Chairman from managing the earnings. In Australia, Davidson, Goodwin-Steward and Kent (2005) revealed a significant negative association between board with majority of non-executive directors and earnings management. Similar results were also found in a U.S.A. study by Ahmed et al. (2008). Hsu and Wang (2010) showed a negative link between failed companies in the U.K and the percentage of non-executive directors on their boards. Thus, the next hypothesis was developed:

H1b: There is a significant difference in the percentage of independent directors on company's board between scandal firms and non-scandal firms.

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 outside directors in other firms, the less likely the occurrence of financial statement fraud. Schnake and Williams (2008) lent further support to the negative relationship across several firms, between governance and the holding of multiple directorships. Therefore, this study expects that:

H1c: There is a significant difference in directorship of independent directors in other listed companies between scandal firms and non-scandal firms.

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 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 and earnings management. But, a study

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

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 references for how audit, remuneration and nomination committees should operate in Malaysian public listed companies. This study proposes the following hypotheses:

H1d: There is a significant difference in the percentage of independent directors in audit committees between scandal firms and non-scandal firms.

H1e: There is a significant difference in the percentage of independent directors in remuneration committees between scandal firms and non-scandal firms.

H1f: There is a significant difference in the percentage of independent directors in nomination committees between scandal firms and non-scandal firms.

There are debates on whether the company's leadership structure should be either of a combination or enforce a separation between the roles of a CEO and chairman of the board (Epps and Ismail, 2009). The 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, the stewardship theory argues that CEO duality enhances a firm's performance because there is the leadership unity of command. Therefore, the second main hypothesis for this study is:

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

In the U.S.A., 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 chairpersons. 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 U.S.A. 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 U.S.A. fraud companies were more likely to have CEOs with duality functions. Similar

results were found by Davidson et al. (2005) which indicated that there was no relationship between separation of CEO duality functions and earnings management. In the U.K, Hsu and Wu (2010) found that leadership duality was not linked to corporate failure incidents. Hence, this study expects the following hypothesis:

H2a: There is a significant difference in CEO duality functions between scandal firms and non-scandal firms.

Another measure to the underlying agency problem is the duration of 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 fraud acts. Other U.S.A. studies such as Beasley (1996) and Uzun et al. (2004) however, found that the number of years a CEO is on the board is not a significant factor contributing to the possibility of fraud occurrence. In contrast, Persons (2006) found the longer the CEO's tenure on the board, the less the likelihood of fraud. An exception was in Hsu and Wu (2010) whose results indicated that CEOs in corporate failures in the U.K had shorter tenures. Thus, this study hypothesizes the following:

H2b: There is a significant difference in CEO tenure 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 of manipulating earnings or committing fraud (Ahmed et al., 2008). However, much previous literature revealed conflicting results to that of Ahmed et al. (2008)[9].

[9] 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 study (2006), also conducted in the U.S.A., revealed that equity ownership by outside directors and outside stockholders 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 U.K.

Therefore, the third main hypothesis is as follows:

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

2.2.2 Earnings Management

There are many reasons why management may manage a firm's earnings. Some of the reasons are to report higher earnings, to avoid reporting pre-tax losses, to meet or exceed analysts' forecasts 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, to hide misappropriation of assets and to camouflage the firm's performance deficiencies[10]. Kalbers (2009) thinks some of the forms of earnings management are considered as fraud. 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.

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 (also in the third year) before the fraud was committed compared to that of the matched non-scandal firms. Thus, this study proposes that:

H4a: There is a significant difference in discretionary current accruals (DCA) between scandal firms and non-scandal firms.

H4b: There is a significant difference in absolute discretionary current accruals (DCA) between scandal firms and non-scandal firms.

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

Erickson et al. (2004) analysed a sample of firms in the U.S.A. to ascertain 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. Therefore, this study expects that:

H4c: There is a significant difference in current tax paid between scandal firms and non-scandal firms.

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, Mastuki and Aziz (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, Sun, Lee and Anandarajan (2008) found strong proof of a positive relationship between deferred tax expenses with likelihood of fraud occurrence. This leads to the following hypothesis:

H4d: There is a significant difference in deferred tax expense between scandal firms and non-scandal firms.

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[11]. Therefore, the following hypothesis was developed:

H4e: There is a significant difference in growth of business expansion between scandal firms and non-scandal firms.

[11] 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), etc.

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. Thus, this study proposes that:

H4f: There is a significant difference in dividend payout between scandal firms and non-scandal firms.

2.2.3 Compensation Structure

The compensation structure can also act as an incentive to commit fraudulent activities. Gao and Shrieves (2002) found that the compensation structure which includes bonuses, stock options and its intensity are associated with earnings management. Baker, Collins and Reitenga (2003) provided strong evidence that discretionary current accruals (DCA) is influenced by share options. Cheng and Warfield (2005) indicated 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 a higher price. Denis, Hanouna and Sarin (2006) found that CEOs in fraud firms sample received more share options compared with those in non-fraud firms. Similar results were found by Efendi et al. (2007) who revealed that the possibility for misstated financial statements is higher when the CEO has a substantial amount of share options[12]. Thus, the fifth main hypothesis of this study is as follows:

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

[12] 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 were 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 was a link between executive equity-based incentives and the occurrence of firms' accounting irregularities. The study found no significant evidence to support their contention. Similarly with Laux and Laux (2009) who proposed that the increase in CEO equity incentives does not necessarily lead to a higher level of earnings management.

3. 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 Bursa Malaysia website. The SC website listed about 60 public listed companies being charged (insider trading, market manipulation and submission of false or misleading statements) and investigated during the years 1996 to 2010. The Bursa Malaysia website listed 38 companies which had been reprimanded and fined by Bursa Malaysia for breach of paragraph 16.11(b) of Listing Requirement for the year 2007 to 2010[13,14]. The details of the type of offence, the amount involved and the total fines are summarised in Table 1.

Each of the scandal firms was 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 were termed 'non-scandal firms' in this study.

[13] In this study, companies were 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.

[14] The final sample of this study consisted of 57 scandal firms (31 from SC and 26 from Bursa). This study had categorised the scandal firms into (1) financial statement fraud, (2) securities fraud, (3) breach of trust, and (4) other offences. 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.

Table 1

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	Total fines to the directors
Panel A : Financial statement fraud				
Non-compliance of approved accounting standard	2	4 directors	NA	RM160,000
Submission of financial statements which contain misleading information and/or delay in its submission to the SC and Bursa Malaysia	40	125 directors	NA	About RM11.5 mil.
Panel B : Securities fraud				
Breached SC regulations of share transactions (buy and sell) in the market	2	10 directors	RM20 mil.	NA
Insider trading	1	1 director	NA	NA
Utilisation of proceeds from share or bond issued for purpose other than approved by SC	4	7 directors	About RM149 mil.	NA
Panel C : Breach of trust				
Misused company's fund for personal benefit	4	6 directors	About RM222.5 mil.	NA
Panel D : Others				
Disposed assets without shareholders' approval	1	7 directors	RM20 mil.	NA
Delayed announcement to public on default payment of credit facilities	1	6 directors	About USD91 mil. (RM273 mil.)	NA
Provided financial assistance to non-permitted persons or companies	2	10 directors	About RM35 mil.	NA
Panel E : Total				
9 types of offences	***57 companies***	***176 directors***	***About RM719.5 mil.***	***About RM11.66 mil.***

Note: NA refers to not available; mil. refers to million

3.2 Measurement of Variables

Most of the proxies adopted as measurement of variables in the current study were selected on a similar basis as those used by Crutchley et al. (2007). However, some modifications and omissions of selected proxies were necessary because of the unavailability of data and due to incompatibility with the Malaysian environment.

3.2.1 Firm Characteristic Variables

There were 12 variables used to compare characteristics between scandal firms and their matched non-scandal firms. The details of the measurements can be seen in Table 2.

Table 2 - *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

3.2.2 Corporate Governance Variables

To examine whether there were 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.

Table 3 - *Summary of measurement of corporate governance variables*

Proxies	Details
Panel A: Board structure	
Board size	Number of directors
Board independence	Percentage of independent directors on 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 directors' positions held by independent directors in other public listed companies
Panel B: Leadership structure	
Duality	Equals to 1 if the chairman and CEO are the same person, 0 if there are separate functions
CEO tenure	Number of years the CEO has held the position
Panel C: Ownership structure	
Management ownership	The percentage of common stock owned by executive directors

3.2.3 Earnings Management Variables

In order to measure the earnings management variables, this study used 13 proxies. The details of the proxies are recorded in Table 4.

Table 4 - ***Summary of measurement of earnings management variables***

Proxies	Details
Panel A : Discretionary current accruals (DCA)[15]	
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 by 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 by total sales in the third year before fraud year
Panel D : 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 by dividend in the third year before fraud year

[15] Teoh *et al.* (1998) and Yang *et al.* (2009),

3.2.4 Compensation Structure Variables

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 public 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 could 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.

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

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 is 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 were provided about 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, Black, Babin, Anderson and Tatham (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 were used to evaluate the appropriateness of the variables (Hair et al., 2006)[16]. Furthermore, the conceptual underpinnings of the variables and use of their judgement was required to look into the appropriateness of the variables (Hair et al., 2006, p.110).

4. RESULTS AND DISCUSSION

4.1 Composition of the Sample

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 nine firms from the technology sector experienced the third highest number (15.79%) of fraud cases. Furthermore, the analysis showed that 14 firms experienced fraud incidents in year 2007, and nine firms were involved in fraud in the year 2006[17].

4.2 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 revealed 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 showed that the scandal firms had on average, a lower operating ROA ratio significant at the 0.01 level. Likewise, the ROA ratio (ROA) was lower for scandal firms compared to non-scandal firms.

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

[17] This information can be provided upon request.

Panel D of Table 7 indicates that scandal firms had significantly higher 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 7 shows that the scandal firms had 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 possibly have not attracted 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 6 - ***Firms' characteristics of 57 scandal firms and 57 non-scandal firms***

Firm characteristics	N	Scandal firms				Matched non-scandal firms		Paired difference (Scandal - Match)			
		Mean		Median		Mean	Median	Mean		Median	
Panel A: Matching measurement											
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 0.01 level, ** Indicates statistical significance at the 0.05 level, * Indicates statistical significance at the 0.10 level.

All variables were 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 was used to test means and Wilcoxon signed-rank test was used to test medians. In Scandal firms column, significance indicates mean or median difference from matched non-scandal firms sample, and in Paired difference column, indicates mean or median difference from zero.

4.3 Results and Findings

4.3.1 Corporate Governance

Table 7 compares the corporate governance of scandal and their matched non-scandal firms. Panel A revealed that, except for additional directorship, there were no significant differences between the scandal firms and non-scandal firms in terms of (1) the number of directors on the board, (2) percentage of independent directors in the board composition, (3) percentage of independent directors in the audit committee, (4) percentage of independent directors in the remuneration committee, and (5) percentage of independent directors in the nominating committee.

These results imply Hypothesis 1c is accepted and Hypothesis 1a, Hypothesis 1b, Hypothesis 1d, Hypothesis 1e and Hypothesis 1f are not accepted. Overall, we can thus conclude, except for the additional directorship, that there are no significant differences in the corporate governance of the scandal firms and non-scandal firms.

Panel B of Table 7 shows 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 2a and Hypothesis 2b, hence 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 rejects Hypothesis 3.

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.

The matched non-scandal firms were selected from the same industry with similar total assets, book-to-market ratio and total market capitalization. All variables were 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 directors' positions held by independent directors in other public listed companies*; Board* (*Audit committee, Remuneration committee* and *Nominating committee*) *independence* is defined as the percentage of independent directors on the board (audit committee, remuneration committee and nominating committee respectively); *Duality* equals to 1 if the board chairman and CEO are the same person and 0 if there is a separate function; *CEO tenure* defines the number of years the CEO held the position; and *Management ownership* measures the percentage of common stock owned by the executive directors. The T-test was used to test means and Wilcoxon signed-rank to test medians. In Scandal firms column, significance indicates mean or median is difference from its matched non-scandal firms sample, and Paired difference column indicates mean or median difference from zero.

4.3.2 Earnings Management Activities

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 was 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 existed in scandal firms even three years prior to the fraud year. Based on the above discussions, Hypothesis 4a and Hypothesis 4b are accepted.

Panel B of Table 8 shows no differences in means between current taxes paid and deferred tax expense but a weak median difference at the 0.10 level for current tax paid was indicated. Thus, the present study rejects Hypothesis 4c and Hypothesis 4d.

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. For that reason, Hypothesis 4e is not accepted.

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) indicate that non-scandal firms were paying out dividends more than three times that paid out by scandal firms. Indeed, on 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 was no significant difference found in the 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 which provide strong evidence to support the acceptance of Hypothesis 4f.

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 was 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 their shareholders. Therefore, aggressive earnings management activities and less dividend payment were the possible factors that could be linked to the occurrence of fraud among Malaysian public listed companies.

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	-23.77		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

The matched non-scandal firms were selected from the same industry with similar total assets, book-to-market ratio and total market capitalization. *DCA-1* was measured in the year before fraud year; *Absolute value for DCA-1*(*3*) measured in the (the third) year before fraud year; *Change in AbsDCA* 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 by 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 by dividend in the third year before fraud year, and multiplied by 100. T-test was used to test means and Wilcoxon signed-rank test used to test medians. In Scandal firms column, significance indicates the mean or median difference from the matched non-scandal firms sample, and Paired difference column indicates the mean or median difference from zero.

4.3.3 Compensation Structure

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) was much lower compared to that of non-scandal firms (RM477,000), unfortunately these results did not show significant differences. Therefore, there is not enough evidence to support the assertion that compensation structure could be one of the possible factors associated with fraud occurrence in Malaysian public listed companies. Thus, Hypothesis 5 is also rejected.

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

Compensation structure variable		Scandal firms		Matched non-scandal firms		Paired difference (Scandal - Match)	
	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

The matched non-scandal firms were selected from the same industry with similar total assets, book-to-market ratio and total market capitalization. All variables were 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 was used to test means and Wilcoxon signed-rank test used to test medians. In Scandal firms column, significance indicates mean or median difference from its matched non-scandal firms sample, and Paired difference column indicates mean or median difference from zero.

4.4 Results of Factor Analysis

Of the overall 25 variables, Table 10 shows 11 variables were loaded into four factors of which four variables were loaded in Factor 1 and two variables in Factor 2, three variables in Factor 3, and another two variables under Factor 4.

Table 10 - *VARIMAX rotated component analysis factor matrix*

Variables	Factor 1 Aggressiveness	Factor 2 Low dividend payout	Factor 3 Ineffective 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) .526
Bartlett's Test of Sphericity : .000

Factor 1 represents the variables that reflect the aggressiveness of a firm which is experiencing significant changes in its total assets and total sales where 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 low dividend payout factor and includes two variables i.e. (1) average payout ratio, and (2) payout ratio-1. Low 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 on 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 own a large percentage of a firm's shares and hold a greater number of directorship positions 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.

5. SUMMARY AND CONCLUSIONS

Company-related fraud is not a rare phenomenon in many countries including Malaysia. Among the effects have been 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 for the persistence of these fraudulent activities 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 intended 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 public listed companies in Malaysia.

From the results, this study found that except for additional directorship, there was no significant difference in corporate governance practices between scandal firms and non-scandal firms. It was found that these directors held fewer board positions compared to those in non-scandal firms. Perhaps, a lack of knowledge, experience and skills among independent directors, due to the limited number of directorship posts held by each director, could have led to weak corporate governance in the firms concerned.

This study also found that scandal firms had already engaged in earnings management activities three years prior to the fraud incidents. Moreover, the negative results of DCA values as at the year before the fraud year suggest that scandal firms were managing earnings downward in the financial statements. These findings also showed dividends 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 were 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 indication of low dividend payment to its shareholders (3) the existence of ineffective independent committees in company's governance, and (4) the influence of wielding a powerful and dominant position in a company. These conceptual factors could also be seen as possible causes contributing to fraud in the Malaysian corporate environment.

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CONSOLATION PRIZE

PROFIT EQUALISATION RESERVE AS AN EARNINGS AND CAPITAL MANAGEMENT TOOL IN ISLAMIC BANKS: EMPIRICAL EVIDENCE FROM MALAYSIA

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PROFIT EQUALIZATION RESERVE AS AN EARNINGS AND CAPITAL MANAGEMENT TOOL IN ISLAMIC BANKS: EMPIRICAL EVIDENCE FROM MALAYSIA

ABSTRACT

The Islamic banks in Malaysia have adopted the Profit Equalization Reserve (PER) as a mechanism in distributing profit through the *mudharabah* investment. PER stabilises the rate of return (RoR) paid to the depositors for the purpose of income smoothing. This paper determines whether PER is used for earnings and capital management purposes using a sample of two full-fledged Islamic banks and 13 Islamic banking windows for the period 2003-2010. Analysis is based on panel least square regression methods and balanced panel data of 120 observations. Results show that earnings before tax, zakat and provision (EBTZP), total capital before provision (TCABP) and total risk weighted assets (TRWA) are significant factors determining the use of PER. The findings support best practices using PER as earnings and capital management, towards providing an enabling environment for the expansion of the Islamic banking industry. In addition, the findings are likely to catalyze innovative improvement towards strengthening the current Rate of Return Framework issued by Bank Negara Malaysia (BNM) and Islamic Financial Services Board (IFSB). This study also hopes that standards setting bodies such as the IFSB, and the Malaysian Accounting Standards Board (MASB) will provide a framework or guidelines for the management of Islamic banking institutions, for best practices in management and reporting (disclosure) profit. This disclosure should be transparent to users of financial information, especially the depositors and investors in Islamic banking.

1. INTRODUCTION

The Islamic banking industry has evolved globally at a rapid rate. It requires the development of an effective regulatory framework to provide an enabling environment to support the industry. Islamic banks in Malaysia have introduced another mechanism in distributing profit for the *mudharabah* investment known as Profit Equalization Reserve (PER). The Islamic Financial Service Board (IFSB) (2010), defined PER as the amount appropriated by the institution offering Islamic financial services out of the *mudharabah* income, before allocating the *mudarib's* share, in order to maintain a certain level of return on investment for investment account holders (IAH) and to increase owner's equity.

The Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI) requires the recognition of the PER and Investment Risk Reserves (IRR) as stated in the Financial Accounting Standard (FAS) 11. The purpose of PER is to stabilise the rate of return (RoR) paid to the depositors and smooth the returns. This allows Islamic Banking Institutions (IBIs) to avoid Displaced Commercial Risk (DCR) consisting of a massive withdrawal of funds, i.e. bank run. Bank Negara Malaysia (BNM) or the Central Bank of Malaysia has required all Malaysian Islamic banks to implement the PER mechanism to mitigate the fluctuation of the RoR arising from the flux of income, provisioning and total deposits, and to ensure that the RoR of the Islamic banks remains competitive and stable (BNM, 2004). The monthly RoR recorded by Islamic banks is inconsistent in the actual performance in conventional banking because Islamic banking tends to generate a huge profit at the end of its financial year (Shaharuddin, 2010). The PER is allowed to make monthly provision of up to 15 per cent monthly of the total gross income plus net trading income, other income and irregular income. The IBIs are allowed to build up and maintain a maximum accumulated PER of 30 per cent of Shareholders Fund as a provision on the balance sheet. The IBIs may write back the PER into the total gross income, at their discretion, in the event that the prevailing rates have become less competitive. PER is recognised as a liability on the balance sheet and as an expense in the income statements (Malaysian Institute of Accountants, 2007).

PER acts as a reserve against current year income resulting in reduction of reported income when there is reason to believe that the depositors will gain a lower return on their deposits. Therefore, PER is viewed as a quantitative indicator of earnings deterioration. From the bank’s point of view, earnings management is a strategy used by the management to purposely manipulate the bank's earnings so that the figures match a pre-determined target (Shahimi, 2011). This practice serves the purpose of income smoothing. Income smoothing refers to managers’ financial reporting decision and structuring of transaction (Misman & Ahmad, 2011), where the ability to steadily manage the volatility of earnings may create confidence in the market (Ismail and Shaharuddin, 2003). The benefit of income smoothing can reduce the volatility of bank profits and possibly reduce its capital. Earnings are less affected by the fluctuation of credit losses over the business cycle with income smoothing. By taking positive values during cyclical expansion and negative values during downturn, the provision compensates for the difference between actual and average credit losses. While it is common for banks to keep the figures relatively stable by adding and removing cash from reserve accounts, it contributes to fluctuations in bank profits and capital. In addition, earnings management makes it harder for investors to predict banks’ future cash flow.

The introduction of PER and IRR disclosure may alter the management of portfolio and earnings and a closer examination on the provisioning behaviour of PER in IBIs may offer useful insights. Furthermore, this research is in line with the requirement of BNM for the Islamic banking institutions to prepare and adopt the capital adequacy standard. The new standard requires the risk-weighted assets funded by PER to be deducted from total risk-weighted assets, to allow bank managers to use PER in managing capital and earnings. Transparent disclosure of PER and IRR would reflect the capability of IBIs in managing the level of profit distribution to *mudharabah* depositors and mitigate the exposure of DCR. Despite the extensive literature on earnings management and income smoothing practices in the banking industry, only few have examined the income smoothing hypothesis in the context of IBIs. Previous studies such as Misman and Ahmad (2011), Taktak, et al. (2010), Zoubi and Al-Khazali (2007), Ismail and Be Lay (2002), and Ahmed, et al., (1999) look into loan loss provision (LLP) as a tool for earnings and capital management. Preliminary studies by Shahimi (2011), Shahimi and Ismail (2008) and Ismail and Shahimi (2006) initiated investigations on earnings management via PER. The aim of this study is to examine the income smoothing practice through PER, IRR and LLP amongst Malaysian IBIs.

2. CHARACTERISTICS OF ISLAMIC BANKS

2.1 *Shariah* Principles

Islamic banks are governed by *Shariah* principles which differentiate them from conventional banks (Taktak, et al., 2010). *Shariah* prohibits Islamic banks from paying or receiving interest (*riba*) in their financial and commercial transactions. The investment approach adopted by Islamic banks is unique where they operate on profit-sharing arrangements or *mudharabah* contracts. In a *mudharabah* contract, the depositor assumes the role of capital provider while the bank plays the role of the entrepreneur. The depositors' funds are utilised for financing and investment activities, and the profits generated from these activities are shared between the depositors and the bank, based on the pre-agreed profit sharing ratio. In the event of a loss, it will be borne by the IAH. However, any loss due to misconduct and negligence (operational risk) should be borne by the banks (Archer, et al. 2010). By investing their funds jointly with their customers, Islamic banks become partners and share the risks. The risk-sharing requirement makes return on equity of Islamic banks higher than conventional banks. Profit and loss sharing principles also allow Islamic banks to absorb shocks on assets' returns.

Based on cross-country data, Sundararajan (2005), and Archer et al., (2010) reveal a considerable smoothing of returns paid to profit-sharing investment accounts (PSIA). Such smoothing effect makes Islamic banks' returns less volatile. This principle provides insurance against cyclicality in returns (Hassoune, 2002), while the fluctuations of income from investment and financing as well as provisioning and total deposits may produce the uncompetitive RoR to depositors.

2.2 The Provisioning Practice

Islamic banks and conventional banks vary in their provisioning policies (Taktak, et al. 2010; Shahimi, 2011; and Quttainah, et al., 2011). Islamic accounting regulators encourage the use of dynamic provisioning; therefore Islamic banks are more inclined to set up an allowance for loss provision to absorb any future losses. To avoid bank runs, IBIs are also encouraged to use PER and IRR to stabilise returns to reward IAH (depositors). These devices may contribute towards more stable financial outcomes in Islamic banks, compared to conventional banks.

2.2.1 Profit Equalization Reserve (PER)

The PER is a reserve appropriated from investment profits before these are allocated between shareholders and unrestricted IAH. Banks hold PER against current year incomes resulting in reduction of reported income when they have reasons to believe that the depositors will gain a lower return on their deposits. The PER has two components: a shareholders' component, which forms part of the shareholders' equity as retained profits; and an unrestricted IAH component, which forms part of the equity of the unrestricted IAH. Appropriations to the PER reduce the amount of profit attributable to IAH on which the bank, as *mudarib*, is entitled to an investment management fee. The PER (including the shareholders' component by way of donation) may be used for stabilising the periodic profit payouts to IAH, but not for covering any periodic losses (as the *mudarib* may not cover a loss attributable to the *rabbul mal*). Although the profit payouts are stabilised, the profits are not (since the PER is a reserve, not a provision). To that extent, the term PER is misleading whereas payout stabilisation reserve would be more appropriate. Due to the lack of transparency which is typically found in the financial reporting of Islamic banks, the financial statements which present the profit payout as being the profit actually earned are thus inaccurate.

2.2.2 Investment Risk Reserve (IRR)

The IRR is a reserve appropriated from investment profits attributable to unrestricted IAH, that is, after profits are allocated between the bank as *mudarib* (and so, in effect, the shareholders) and the unrestricted IAH. The IRR does not reduce the amount of profit attributable to IAH but may be used to cover losses attributable to IAH funds. It aims to cover, in whole or in part, potential losses on assets (Sundararajan, 2008). These reserves are actively used by Islamic banks to smooth the actual RoR paid out over time on investment accounts.

2.3 Capital Regulation

The Basle Committee on Banking Regulation and Supervisory Practices introduced the framework of capital adequacy regulations in 1988. The framework was altered in 1990 and all banks are now required to maintain a minimum capital of eight per cent from their risk weighted assets (RWA). The change in the capital adequacy regulations substantially changes the bank's incentive to manage capital and earnings through LLP (Ahmed et al., 1999). Total capital consists of Tier I and Tier II. Tier I includes sum of book value of equity, common stock plus noncumulative preferred stock and minority interest in equity accounts of subsidiaries, less goodwill and other intangible assets. Tier II consists of perpetual debt, mandatory convertible debt securities, term subordinate debt and intermediated preferred stock and loan loss reserve (LLR). Tier I must exceed at least four per cent of RWA and three per cent of total assets, while the amount of Tier II must not exceed the amount of Tier I (Misman and Ahmad, 2011). This framework requires at least 50 per cent of the amount of total capital to be supplied by Tier I capital. Since LLR is part of Tier II, this reserve only counts as part of total capital up to 1.25 per cent of risk weighted assets.

3. LITERATURE REVIEW

There is much literature on earnings management tools and practices. However, only a few have investigated the income-smoothing hypothesis in the context of IBIs. Abdul-Rahman et al. (2008), examined the association between religious ethical values and earnings management in Malaysian listed companies. Their study found that the earnings management in *Shariah*-compliant firms is significantly less associated with the religious business norms and accountability processes of *Shariah*. This result suggests that ethical qualities arising from a religious commitment play an important role in earnings management. However, literature related to earnings management practices in IBIs are few and reported varied results. Existing

studies used LLP as a tool to test the earnings management in IBIs, with the exception of one preliminary study that used PER (Shahimi, 2011). LLP has been widely used by bank managers since the late 1980s. According to Zoubi and Al-Khazali (2007), the five objectives of using LLP are income smoothing, stock pricing, management bonus, signalling future losses and earnings and complying with legal requirement. Managers purposely manipulate the bank's information, keeping the figures relatively stable by adding and removing cash from reserve accounts (Misman and Ahmad, 2011). Ismail and Shahruddin (2003) explained that the strategy of provisioning technique improves the bank managers' awareness of credit risk based on expected losses beyond the current financial year.

Misman and Ahmad (2011) found that Islamic and conventional banks in Malaysia use LLP in their earnings and capital management. Quttainah et al. (2011) examined whether Islamic banks were less likely to manage their earnings and how the corporate governance system, especially *Shariah* Supervisory Boards (SSBs) affected the earning management behaviours within Islamic banks. They found that Islamic banks were less likely to conduct earnings management as measured earnings loss avoidance and abnormal LLP. Then, there is insignificant difference in earnings between Islamic banks with and without SSBs. Taktak et al. (2010) analysed 66 Islamic banks over the period of 2001-2006 and tested the use of LLPs. Zoubi and Al-Khazali (2007) supported the income-smoothing hypothesis after examining 55 conventional and ten Islamic banks for the period of 2000-2003. Bank managers in countries of the Gulf Cooperation Council smooth their income by using LLPs. Ismail and Be Lay (2002) also found evidence of earnings management by Malaysian banks using LLP over the period of 1997-1999. These studies suggest a positive relationship between LLP and earnings management.

However, other studies found a negative relationship between LLP and earnings management. Ismail and Shahrudin (2003) examined nine of Malaysia's largest banks that provide Islamic banking products over the period of 1998-2002. They found that Islamic banking managers do not use LLP. Ismail et al. (2005) supported the previous finding with evidence from ten commercial banks in Malaysia which offered Islamic banking services from 1998 to 2001. Their examination revealed that managers used security gains and losses to manage their earnings instead of using LLP. Ahmed et al. (1999), and Beatty, et al. (1995) also showed inadequate evidence that banks use LLP to smooth their earnings. Hence, for the purpose of this study, we chose to examine whether Islamic banks in Malaysia manage their earnings through PER, IRR and/or LLP.

4. RESEARCH FRAMEWORK AND HYPOTHESIS

In October 2001, BNM conducted review on the framework of the RoR in order to provide a greater degree of flexibility in implementation. Then, the guidelines on the specimen reports and financial statement for licensed Islamic Banks (GP8-i) were issued in August 2003. Both were to be adopted by the IBIs beginning 2004. Guidelines on the recognition and measurement of profit-sharing investment account as risk absorbent were also issued in 2004. One of the new mechanisms introduced in the framework was the PER with the objective of stabilising RoR to depositors and to ensure that the rates remained competitive.

IBIs transfer some proportion of profits to increase depositors' returns. The PER is appropriated out of the total gross income (income derived from investment of depositors' funds and others) and is shared by depositors and the bank. The retention of reserves from the profits on assets attributed to IAHs and shareholders apply to the sharing of profits (Sundararajan, 2007; Archer and Karim, 2006). The calculation and use of PER and IRR are decided by individual IBIs based on their own discretion and there are no specific supervisory disclosure requirements regarding this. While there is no universal definition of this provision, the guidelines stated that provisions are determined on the basis of: (a) a certain percentage of the total gross income (including the gross income, net trading income, other income and irregular income, i.e. recovery of non-performing financing and write-back of provisions) that needs to be submitted to the regulator on a monthly basis; and (b) maintaining a maximum accumulated PER of up to 30 per cent of shareholder funds (Sundararajan, 2005).

However, in practice, PER is set in a backward approach where reserves can only be made once the gross income is revealed. Explicitly, PER reflects actual losses which in reality may take some time to disclose. Therefore, PER decisions should be based on the entire future profile of expected losses on financings and investments i.e. forward-looking. Hence, it is interesting to examine if IBIs use tools such as PER to enhance the stability of their returns. Understanding the determinants of PER is therefore important in assessing financial stability along with depositors' confidence. A summarised framework for earnings management in IBIs is presented in Figures 2 and 3.

In order to investigate the relationship between PER and the earnings management of Malaysian IBIs, our study specifies the following hypothesis:

Hypothesis 1:

H_0: Earnings management has a significant effect on PER in Malaysian IBIs

Hypothesis 2:

H_0: Capital management has a significant effect on PER concerning Malaysian IBIs

This study employed a pooled cross-section econometric technique for our balanced sample. The hypotheses are tested using the following models, as described in the methodology section.

5. RESEARCH METHODOLOGY

5.1 Sample Selection

The sample consists of 120 observations from 15 commercial banks which offer Islamic banking products and services (after mergers and acquisitions process). The banks consist of two full-fledged Islamic banks and 13 conventional banks with Islamic banking windows (nine domestic commercial banks and four foreign commercial banks). Our balanced panel data covers the period 2003-2010, with data obtained from the audited and published annual financial statements of individual banks. The macroeconomic data, the gross domestic product (GDP) was obtained from the BNM website.

5.2 Estimation Method

This study utilised the Panel Least Square method to identify the relationship between PER with earnings and capital management. Eight variables representing internal determinants were tested empirically using panel data estimation.

5.3 Empirical Model and Research Design

The objective of this study was to estimate income-smoothing practice and earnings management through PER, IRR and LLP. Following the previous measurement by Shahimi (2011), PER is deducted from the total gross income which is income derived from investment of depositors' fund and others. The choice of LLP reflects bank managers' capital management and income-smoothing behaviour (Ismail and Shaharudin, 2003, Taktak et al., 2010).

From the financial statements, PER can be derived after the loan loss provision (LLP) and loan loss investment (LLI) are deducted from total income (TY), as stated in Equation 1.

$$\mathbf{PER = TY - LLP - LLI} \qquad \mathbf{(1)}$$

Model 1 as represented by Equation 2 is used to examine whether managers of Islamic banks use PER to smooth banks' income. PER also reflects the effect of bank size based on total assets. GDP is the variable used to capture the macroeconomic effect.

Model 1: Basic Estimation

$$\mathbf{PER = f\{Total\ Financing, Total\ Investment, Credit\ Risk, Earnings\ Management, Capital\ Management, Banks\ Size, and\ GDP\}} \qquad \mathbf{(2)}$$

$$\mathbf{PER = \{TF, TI, NPF, EBTPZ, TCABP, TRWA, SIZE, GDP\}} \qquad \mathbf{(3)}$$

$$\mathbf{PER_{it} = \beta_0 + \beta_1 TF_{it} + \beta_2 TI_{it} + \beta_3 NPF_{it} + \beta_4 EBTZP_{it} + \beta_5 TCABP_{it} + \beta_6 TRWA_{it} + \beta_7 SIZE_{it} + \beta_8 GDP_{it} + \varepsilon_{it}} \qquad \mathbf{(4)}$$

Where:

$\mathbf{PER_{it}}$ = profit equalization reserve of bank *i* in year *t* normalized by total assets;

$\mathbf{TF_{it}}$ = the ratio of total financing of bank *i* in year *t* normalized by total assets;

$\mathbf{TI_{it}}$ = the ratio of total investment of bank *i* in year *t* normalized by total assets;

$\mathbf{NPF_{it}}$ = the ratio of non-performing financing of bank *i* in year *t* normalized by total assets;

$\mathbf{EBTZP_{it}}$ = the ratio of earnings before tax and zakat and provision of bank *i* in year *t* normalized by total assets;

$\mathbf{TCABP_{it}}$ = the ratio of total capital before provision of bank *i* in year *t* normalized by total assets;

$\mathbf{TRWA_{it}}$ = total risk weighted asset of bank *i* in year *t* normalized by total assets;

$\mathbf{SIZE_{it}}$ = logarithm of total assets

$\mathbf{GDP_{it}}$ = the rate of growth of gross domestic product in year *t*

ε_{it} = error term

Model 2 indicates an asymmetric pattern of PER during periods of positive and negative earnings. The earnings variable is interacted with dummy variable, D_{EM} (value of one when the earnings are negative and zero otherwise). This model expects a positive sign for the parameter of EBTZP*D_{EM}.

Model 2: Evidence on Earnings Management

$$\mathbf{PER_{it} = \beta_0 + \beta_1 TF_{it} + \beta_2 TI_{it} + \beta_3 NPF_{it} + \beta_4 EBTZP_{it} + \beta_5 EBTZP_{it}*D_{EM} + \beta_6 TCABP_{it} + \beta_7 TRWA_{it} + \beta_8 SIZE_{it} + \beta_9 GDP_{it} + \varepsilon_{it}} \quad \mathbf{(5)}$$

To examine capital management for banks with LLR ratio exceeding 1.25 per cent, the variable TCABP is interacted with a dummy variable, D_{CM} (value of 1 if the reserve ratio exceeds the rate of 1.25 per cent and zero otherwise). The dummy variable is included to study the effects on the pattern of capital cycle (Ahmed et al., 1999; Luc Leaven and Majnoni, 2003). Luc Laeven and Majnoni (2003) assume that if a bank does not limit the ratio of loan loss reserves, and if the banks do patterns of forward-looking provisions, then the characteristics of pro-cyclical capital could be reduced. It can also identify whether the bank considers proposals by Wahlen (1994), and Musumeci and Sinkey (1989) that the market will react negatively if the reserve allocation is high where the ratio of high LLR reflects a weak asset quality.

Model 3: Evidence on Capital Management

$$\mathbf{PER_{it} = \beta_0 + \beta_1 TF_{it} + \beta_2 TI_{it} + \beta_3 NPF_{it} + \beta_4 EBTZP_{it} + \beta_5 EBTZP_{it}*D_{NEG} + \beta_6 TCABP_{it} + \beta_7 TCABP_{it}*D_{CM} + \beta_8 TRWA_{it} + \beta_9 SIZE_{it} + \beta_{10} GDP_{it} + \varepsilon_{it}} \quad \mathbf{(6)}$$

Equation 4 is modified into Equation 6 to examine the earnings and capital management behaviour via PER in Islamic banks. This model assumes that TF and TI influence TY as stated in Equation 4. These two proxies can be considered as bank–specific, non-discretionary (ND) components of PER (Shahimi, 2011), and as a way of capturing general reserves. Typically, TF also affects the general provisions based on its risk exposure and also economic conditions (Ismail and Shaharudin, 2003). The coefficients on both proxies provide anticipated losses averaged across the sample. Non-performing loan (NPL) or non-performing financing (NPF) is a variable reflecting the level of source of positive or negative losses in the debt-financing. This variable consists of non-accrual loans that are 180 days or more past due on principle of repayment (Ismail and Shaharudin, 2003). NPF also measures banks' credit risks as part of capital management (Misman & Ahmad, 2011). Previous studies such as Wahlen (1994), Collins et al. (1995), Beatty et al. (1995), Kim dan Kross (1998) and Ahmed et al. (1999) have used the

NPL as the control variable to study the behaviour of capital management and earnings management by commercial banks. They found a positive relationship between NPL and total loan (TL) with the LLP. If the numbers of NPF increase, the specific reserve will increase.

To test for income-smoothing practices through PER by Islamic banks, we investigated the variability by the variables of EBTZP. We identified the practicing banks by using the coefficient proposed by Beidleman (1973), Ismail and Shaharudin (2003), Taktak et al. (2010), Misman & Ahmad (2011). In Biedleman (1973), this coefficient was used to determine and measure the correlation of growth net income over time to the object of smoothing with time trend. In Ismail and Shaharudin (2003), EBTZP was included to examine whether Malaysian Islamic banking managers practice income behaviour. Kim and Kross (1998), Shreives and Dahl (2003), and Misman & Ahmad (2011) found a positive relationship between EBTZP and LLP. Their results suggested that when earnings are low, banks reduce provision to get better EBTZP. This behaviour reflects better on the performance of the bank, which is consistent with income-smoothing activities.

Ahmed et al. (1999) have included the variable of TCABP as a variable to test capital management. In this study, we measure TCABP by using primary or Tier I capital. The TCABP is measured by the ratio of actual regulatory capital before loan loss reserve to the minimum required regulatory capital. The objective is to determine the existence of capital management behaviour as a result of the relationship between loan loss reserves and the calculation of capital requirement ratio. Banks which have weak financial problem and low capital can be identified by using this variable. The managers of banks with low regulatory capital have incentives to increase LLP. Moyer (1990), Collins et al. (1995) and Beatty et al. (1995), examined the relationship between LLP and capital before the new capital regulation, while Taktak et al. (2010), Misman & Ahmad (2011) controlled the effect of capital adequacy ratio on LLP. Ahmad et al. (1999) found that banks with low capital significantly reduce their LLP. We included the variable of total risk weighted asset (TRWA) as a proxy for risk of assets in the banks. The variable of TRWA should comprise a different weight of risk assets (Ismail and Shahimi, 2003). In this study, we determined the weightage based on a predetermined profit sharing ratio. The definition and expected sign of these variables are listed in Table 1.

Table 1: Definition of Variables

Variables	Definition	Source	Expected Sign
PER	Profit equalization reserve deducted from income derived from investment of depositors' fund and others, divided by total assets.	Income Statement	
TF	Total financing divided by total assets.	Notes to the financial statement	Positive (+)
TI	Total investment divided by total assets.	Notes to the financial statement	Positive (+)
NPF	Net non-performing finance (or impairment loss) divided by total assets.	Notes to the financial statement	Positive (+)
EBTZP	Earnings before tax, zakat and provision divided by total assets.	Income statement	Positive (+)
$EBTZP*D_{EM}$	Unity if earnings are negative and zero otherwise.		Positive (+)
TCABP	Total capital before provision (Tier I) divided by total assets.	Notes to the financial statement	Negative (-)
$TCABP*D_{LLR}$	Unity if loan loss reserve is more than 1.25 per cent and zero otherwise.		Positive/Negative (+/-)
TRWA	Total risk-weighted asset divided by total asset.	Notes to the financial statement	Positive (+)
SIZE	Total assets of the bank (logarithm of total assets).	Balance sheet	Positive (+)
GDP	The rate of gross domestic product growth	Bank Negara Malaysia	Negative (-)

6. ANALYSIS OF RESULTS

6.1 Descriptive Statistics

Table 2: Descriptive Statistics of Independent and Dependent Variables

Variables	Mean	Median	Std. Dev.	Skewness	Kurtosis	Jarque-Bera	Maximum	Minimum
PER	-0.000104	0.000000	0.002818	-0.753649	10.87424	321.3780 (0.000000)	0.010354	-0.013990
TF	0.524128	0.562345	0.204663	-0.283791	2.586851	2.464203 (0.291679)	0.941705	0.010547
TI	0.212767	0.176893	0.162572	1.717398	6.915779	135.6558 (0.000000)	0.946017	0.000000
NPF	0.019854	0.011193	0.024032	2.187517	8.645433	255.0592 (0.000000)	0.128945	0.000000
EBTZP	0.010264	0.010964	0.013512	-3.652970	26.14079	2944.366 (0.000000)	0.036741	-0.087424
TCABP	0.082099	0.071733	0.050795	2.583893	11.30939	478.7597 (0.000000)	0.312821	-0.018563
TRWA	0.465667	0.526350	0.329232	0.422993	4.940477	22.40572 (0.000014)	1.954000	0.000000
SIZE	9.734662	9.790388	0.470619	-0.586067	3.399220	7.666363 (0.021641)	10.64500	8.177568
GDP	5.046492	5.794250	2.670688	-1.913470	5.265285	98.88494 (0.000000)	7.200000	-1.700000

Note: Jarque-Bera statistics for all variables are significant at 1 per cent, except TF and SIZE.

Table 2 reports the descriptive statistics for all variables used in the estimation, based on the sample data for the period 2003-2010. The mean and standard deviation ratio of PER is -0.0104 per cent and 0.0028 per cent respectively. This shows that banks in the sample group provide -0.0104 per cent of PER to total assets. It also concurs with the findings by Shahimi (2011), Zoubi and Al-Khazali (2007), Taktak et al. (2010), which showed a low estimate of loss provision. Total finance and total investment reported a mean of 52.41 per cent and 21.27 per cent respectively, which mirrored the level of 71.85 per cent reported by Shahimi (2011) and Taktak et al. (2010) 53.40 per cent. The ratio varies between 0 and 100 per cent with a standard deviation 56.23 per cent and 17.69 per cent. This indicated a large dispersion in the level of financing provided by IBIs (Taktak et al., 2010). The mean for NPF to total assets in is 1.98 per cent while the mean, median and standard deviation of EBTZP to total assets are 1.03 per cent, 1.09 per cent and 1.35 per cent. A bank's capital position before loan loss reserves (TCABP) is measured by the ratio of actual regulatory capital (primary or Tier I capital) before loan loss reserve to the minimum required regulatory capital (Ahmed et al., 1999). The mean of TCABP is 8.20 per cent. The mean and median of TRWA is 46.56 per cent and 52.64 per cent. On average, the natural logarithm of total assets is about 9.73 per cent and the standard deviation is 0.47 per cent. The growth of GDP averaged at 5.04 per cent.

6.2 Regression Results

Table 3 summarizes the correlation matrix for the variables in our models. The correlation coefficients among the independent variables are low, suggesting the absence of multicollinearity problems. Hence, we proceed with regressions on all independent variables. The correlation between PER and all independent variables (TF, TI, NPF, EBTZP, TCABP) are negative except TRWA, SIZE and GDP. The negative correlation between PER and NPF suggests that banks' lack of or less practice of dynamic provision. However, banks increase PER when TF increases. The negative correlations between PER and EBTZP, TCABP suggest that banks with low capital requirement tend to increase PER. However, banks also increase PER if the earnings are expected to be low. Taktak et al., (2010) suggests the negative correlations of PER and EBTZP, TCABP mean that banks do not exercise income smoothing. The TCABP variable was found to be significant for all specifications in our regression models. The log of total assets (SIZE) has a positive relationship and significant effect on PER. These results support the findings by Zoubi and Al-Khazali (2007) and Taktak et al. (2010) that the larger banks have higher level of business and expected to have higher reserve than smaller banks. The GDP variable also exhibits statistical significance in Model 3. This result shows that the business cycle affects a bank's reserve.

Table 3: Correlation Matrix of Independent and Dependent Variables

	PER	TF	TI	NPF	EBTZP	TCABP	TRWA	SIZE	GDP
PER	**1.000000**								
TF	-0.000367	**1.000000**							
TI	-0.104934	-0.646433	**1.000000**						
NPF	-0.015499	0.239543	-0.108734	**1.000000**					
EBTZP	-0.005118	0.222235	-0.118901	-0.149261	**1.000000**				
TCABP	-0.302482	0.272450	-0.206917	-0.076461	0.415803	**1.000000**			
TRWA	0.181459	0.291731	-0.389403	-0.220467	-0.053223	0.076256	**1.00000**		
SIZE	0.250367	0.340398	-0.419043	0.055470	-0.041123	-0.298550	0.360113	**1.000000**	
GDP	0.014291	-0.001121	0.114222	0.164858	-0.002064	0.040085	-0.085314	-0.170515	**1.000000**

Note: Correlation matrix is based on common sample.

6.2.1 Evidence on Earnings Management

Table 4 presents the regression results for Hypotheses 1 and 2. This study employs the ordinary least square (OLS) approach and standard errors are corrected using the Driscoll and Kraay's (1998) method to increase robustness (Hoechle, 2007). The F-value of the model is statistically significant at the one per cent level and the R-square was 17.57 per cent. The panel data is estimated using: (i) OLS; (ii) cross-section fixed effect (FE); and (iii) cross-section random effect (RE). Among the three estimations, the OLS model was found to be the best at representing the model. From the OLS result, t-statistics of the independent variables were found to be statistically significant. In Table 4, we focus on income-smoothing or earnings and capital management. The coefficients of EBTZP are significant and positive for all specification models, implying that the banks use PER for income-smoothing. Our findings also do not reject the hypothesis of earnings management using PER. The positive relationship between EBTZP and PER supports the hypothesis of income-smoothing through PER for Malaysian IBIs. Faouzi Mohamed Hamdi and Mohamed Ali Zarai (2012) suggest that earnings management is practiced to avoid reporting losses. Zoubi and Al-Khazali (2007), suggest that Islamic banks are reluctant to use LLP to smooth their income. According to Archer and Karim (2006), income-smoothing is considered a natural feature of Islamic banks and the practice may involve the use of alternative techniques such as PER and IRR instead of LLP. Taktak et al., (2010) argued that, in practice, the main objectives of Islamic bank managers are primarily to stabilise the profit attributed to shareholders rather than to smooth the profits attributed to depositors. They recommended using PER and IRR to maintain stabilised results.

Table 4: Panel Regression Results (OLS)

Dependent variable: Profit Equalization Reserve (PER)

Variables	**Model 1**	**Model 2**	**Model 3**
	Without Dummy	**With Dummy earnings negative (D_{EM})**	**With Dummy earnings negative (D_{EM}) and Dummy Reserve > 1.25 (D_{CM})**
CONSTANT	-0.003041 (0.007292)	-0.004686 (0.006376)	-0.007888 (0.006850)
TF	-0.001485 (0.002103)	-0.001762 (0.002075)	-0.000950 (0.002143)
TI	-0.002328 (0.001659)	-0.002026 (0.001458)	-0.001340 (0.001634)
NPF	0.002023 (0.006432)	0.001691 (0.007279)	-0.001342 (0.008184)
EBTZP	0.035399* (0.018891)	0.017459 (0.0114157)	0.042649*** (0.011655)
EBTZP*D_{EM}		0.046853 (0.051771)	-0.019803 (0.041402)
TCABP	-0.020209* (0.011025)	-0.019761* (0.010639)	-0.029212*** (0.012131)
TCABP* D_{LLR}			0.017735*** (0.006222)
TRWA	0.001542** (0.000745)	0.001816** (0.000825)	0.001775*** (0.0003652)
SIZE	0.000450 (0.000701)	0.000581 (0.000627)	0.000848 (0.000663)
GDP	0.0000736 (0.000058)	0.000115 (0.0000745)	0.000166*** (0.000059)
R-square	0.175669	0.192309	0.234010
Adjusted R-square	0.116258	0.126225	0.163735
F-statistic	2.956828	2.910073	3.329946
Prob (F-statistic)	0.004899	0.003965	0.000828
Durbin-Watson stat	2.126291	2.034014	2.000970

*Note: Values in parenthesis represent standard errors. ***, **, and * denote significant levels at 1 per cent, 5 per cent 10 per cent, respectively.*

6.2.2 Evidence on Capital Management

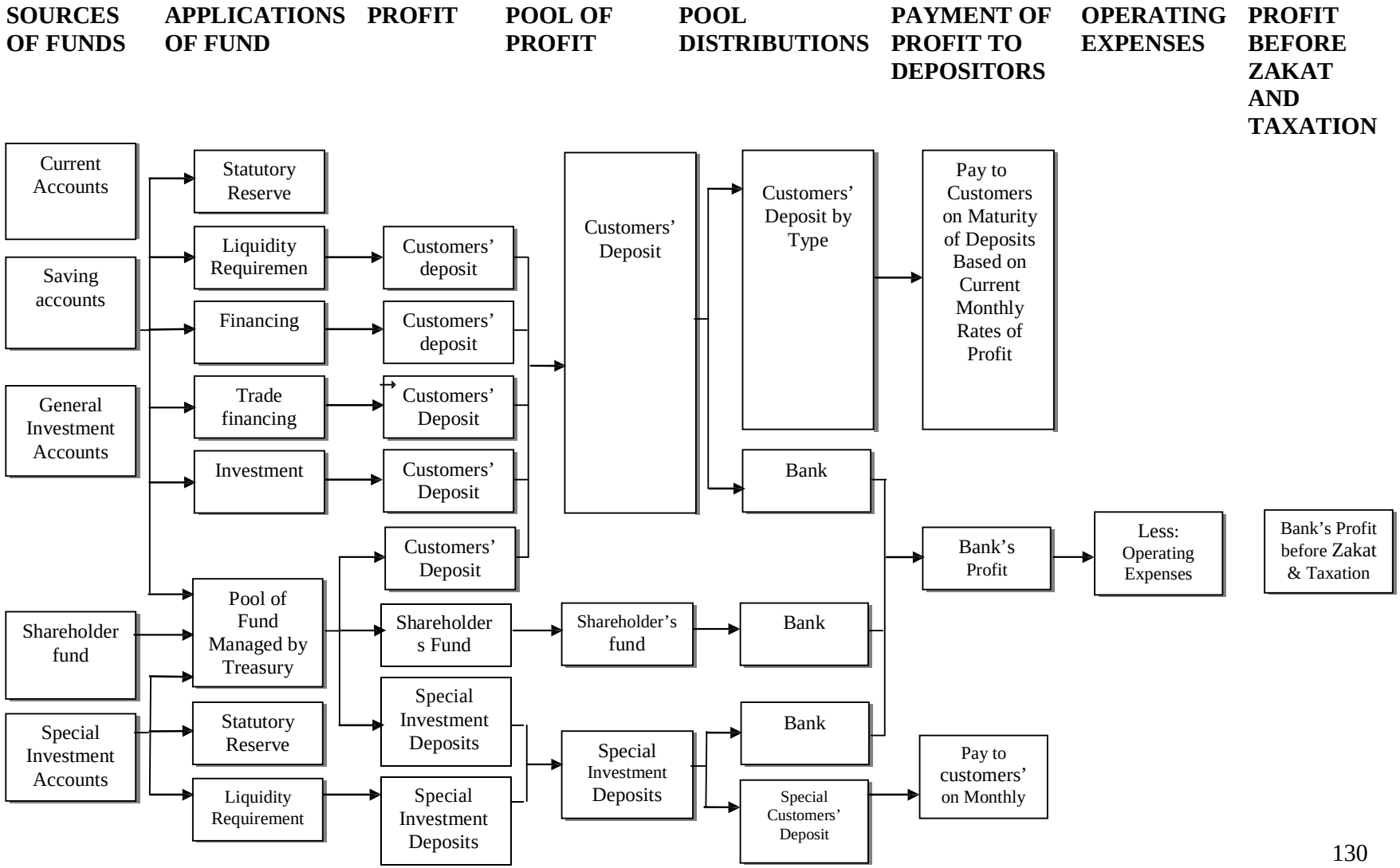
The capital position (TCABP) is measured by the ratio of actual regulatory capital (primary or Tier I capital) before LLR to the minimum required regulatory capital. Consistent with previous studies, we measured TCABP using primary or Tier I capital. The variable of TCABP is found to be statistically significant for all specifications in our regression models. The negative sign of the parameter is expected and indicates that lower capital ratio induces higher PER. The negative sign correlates with the hypothesis that banks with lower capital have incentives to increase capital through PER. Ahmad et al. (2010) states that banks benefit from an increase of provision either in the old capital or new capital regime, in relation to Tier I and Tier II.

7. CONCLUSION

This study examined the practice of income-smoothing and capital management through PER where the results were important in assessing financial stability and depositors' confidence. This was the first study to analyse the provisioning behaviour of PER since the introduction of PER into the Malaysian Islamic banking system in 2003. We found evidence to support earnings and capital management as an important factor determining the use of PER. By using a panel of 15 IBIs, our study indicated that EBTZP and TCABP were significant factors contributing to the current practice of PER, where PER and IRR are used to stabilise returns. We support the recommendation by Taktak et al. (2010) that the regulators need to enhance the disclosure on the specific reserve used by IBIs to avoid financial system distress. However, the *Shariah* issue highlighted by Shahruddin (2011) that the practice of reserving a certain amount of profit is contradictory to the classical *mudharabah* contract. Further research is therefore needed to study the *Shariah* issue regarding the implementation of PER. This study also supports the importance of a guided framework or guideline by standard regulatory bodies such as the IFSB for IBIs to adopt best practices for management and reporting profit. The disclosure should be transparent to users of financial information, especially the depositors and investors in Islamic banking.

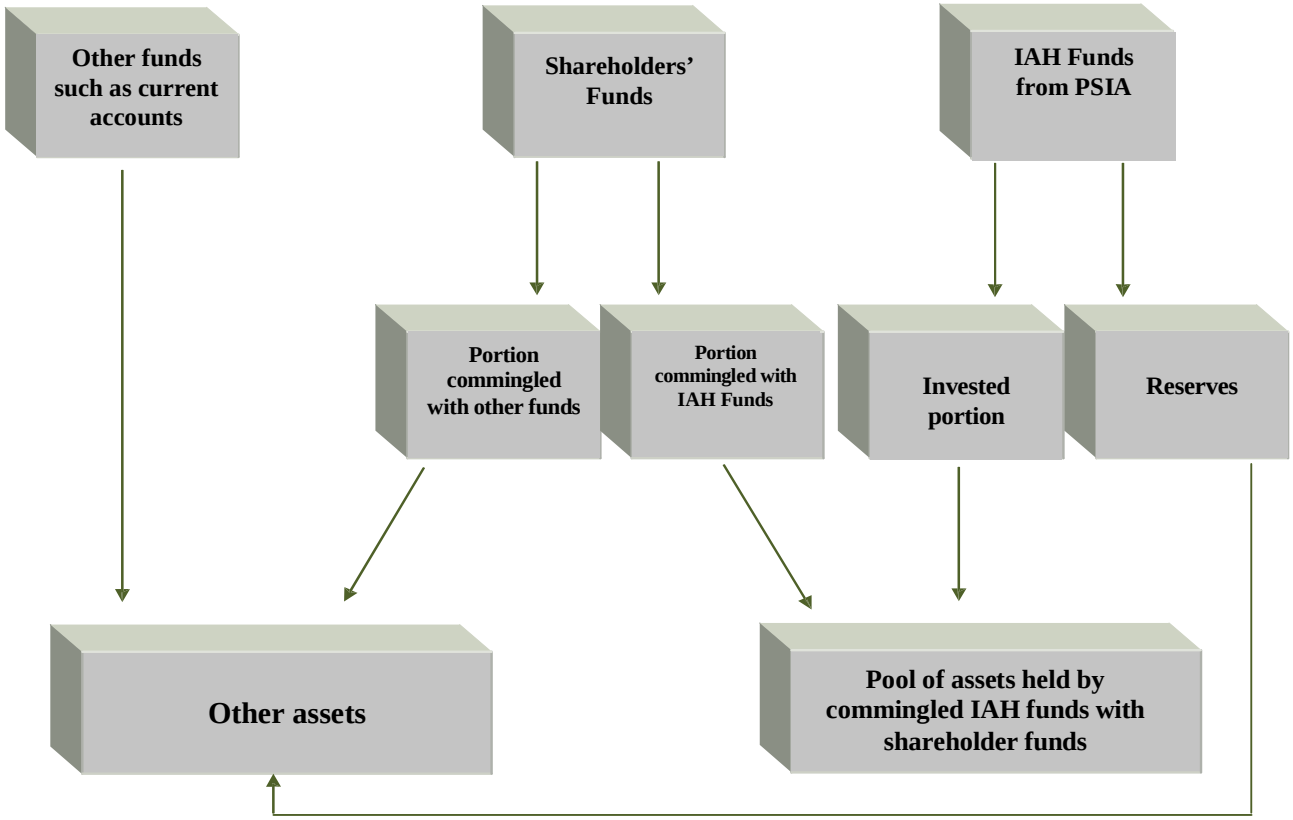
8. APPENDICES

Figure 1: Overview of Sources and Uses of Funds and Profit Distribution in Islamic Banking Institutions (IBIs)



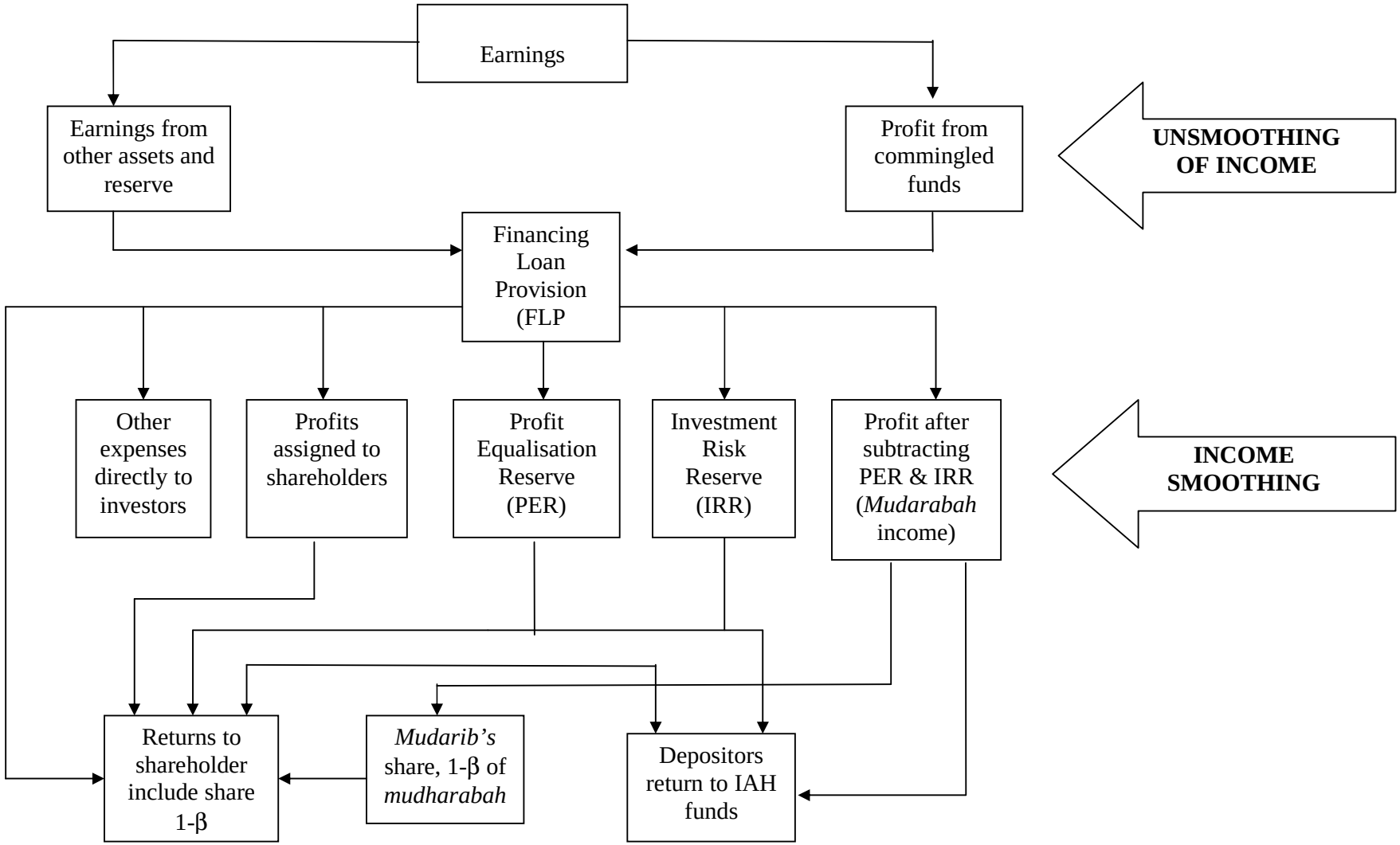
Source: Islamic Banking Practice from the Practitioner's Perspective (1994).pp.47

Figure 2: Framework for Earnings Management in Islamic Banking Institutions



Source: Archer, et.al. (2010).pp. (19)

Figure 3: Theoretical Framework for Earnings Management with IBIs with Income Smoothing



Source: Archer, et.al.(2010).pp. (19)

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CONSOLATION PRIZE

VALUE CREATION STRATEGY THROUGH KNOWLEDGE MANAGEMENT AND INTELLECTUAL CAPITAL

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VALUE CREATION STRATEGY THROUGH KNOWLEDGE MANAGEMENT AND INTELLECTUAL CAPITAL

ABSTRACT

In the knowledge-based economy in the present era, a greater importance has been given to intellectual capital (IC). IC is a combination of a company's human, organisational and relational resources. It includes knowledge, skills, experiences and abilities of employees, research and development (R&D) activities, organisational routines, procedures, systems, databases and its intellectual property rights, as well as resources that link to external relationships, such as the relationships between the company and their customers, suppliers and R&D partners. Knowledge Management (KM), on the other hand, is about the 'flow of knowledge' from individual learning to organisational learning through value creating KM factors or KM enablers to enhance organisational performance. This paper attempts to integrate KM and IC to examine the performance of Malaysian companies. The integration of KM and IC can keep a company's body of knowledge or stock of intangibles 'alive and dynamic' in order to optimise the organisational performance and to secure the organisation's long term viability.

The main objective of this research paper is to identify the KM factors and IC components deemed important to Malaysian companies in value creation strategy integrating both KM and IC. A questionnaire was mailed to 1,500 public listed companies (PLCs) in Malaysia in 2011. A total of 66 questionnaires were received. This study found that the support and commitment of top management and their leadership is vital for the implementation of IC and KM programmes in value creation of the companies. Besides leadership, learning opportunities of employees and technology resources are equally important to the value creation of the Malaysian firms. It was found that Malaysian companies do perceive human capital (employee know-how and motivation) and customer capital to be important to value creation. Incorporating IC and KM into corporate strategies enhances the financial performance of Malaysian companies.

This paper narrows the gap of IC and KM literature by utilising both IC and KM concepts on evaluating the corporate performance and value creation of Malaysian companies. The approach provides a more complete picture concerning the development of IC and KM in Malaysia as it links both IC and KM to companies' financial performance. The empirical evidence of this study reveals the knowledge characteristics and KM activities which are deemed conducive for the development and management of IC and knowledge in Malaysia.

1. INTRODUCTION

In the knowledge-based economy of the present era, a greater importance has been given to intellectual capital (IC), including the intellectual resources of companies. According to Huang et al. (2010), the value of companies lies not only in physical assets but also in intangible assets including knowledge and skills. Intangibles not only create long-term value for the companies, they also enhance the nation's economic wealth (Canibano et al., 2000). Knowledge and IC are recognised as key value creators for corporate sustainability. In essence, knowledge and IC are often regarded as two assets significant to the development of the company's future value and success (Salleh, 2008, Huang et al., 2010; Chong et al., 2011).

As greater emphasis is placed on intangible assets, resources such as knowledge and IC need to be monitored, managed and developed efficiently and also incorporated into corporate strategies towards sustainability. Consequently, companies have given considerable attention to the integration concept of the management of IC and knowledge management (KM). This has resulted in more research concerning KM and IC. Studies of KM and IC have grown tremendously in both the academic and business worlds in the last few decades.

IC is a combination of a company's human, organisational and relational resources. It includes knowledge, skills, experiences and abilities of employees, research and development (R&D) activities, organisational routines, procedures, systems, databases and its intellectual property rights, as well as resources that link to external relationships, such as the relationships between the company and their customers, suppliers and R&D partners. KM, on the other hand, is about the 'flow of knowledge' from individual learning to organisational learning through value-creating KM factors or KM enablers, to enhance organisational performance. The integration of KM and IC can keep a company's body of knowledge or stock of intangibles 'alive and dynamic' in order to optimise organisational performance and to secure the long-term viability of the company.

Petty and Guthrie (2000) state that knowledge management (KM) is about the management of IC controlled by an organisation and KM as a function (action) manages IC which is regarded as an object. The concept of integrating KM and IC in the organisations' management and strategies should bring about a synergy which creates value for the organisation. According to Wigg (1997a), the role of KM and IC is to keep the body of knowledge of the organisation alive and vibrant like a living organism seeking for long-term viability.

A number of studies concerning IC and KM (Bontis et al., 2000; Salleh, 2008, Huang et al., 2010; Chong et al., 2011) have been conducted in Malaysia. However, these studies focused either on IC or KM. There is lack of studies examining both IC and KM together. This paper attempts to integrate both IC and KM on the performance of Malaysian public-listed companies (PLC). Wiig (1997a) and Chatzkel (2000) state that the role of the integration approach, besides keeping the company's knowledge or stock of IC vibrant, is to optimise its organisational performance to secure its long-term viability. Both IC and KM are expected to be incorporated into IC management goals as well as in the management of knowledge processes (Van Buren, 1999). The main contribution of this paper is the utilisation of both IC and KM concept on corporate performance and value creation in Malaysian companies. The approach should provide a more complete picture of the companies' financial performance. In addition, the findings will help companies to identify their knowledge characteristics and KM activities which are deemed conducive for the development and management of their IC and knowledge.

The following are the objectives of this paper:

(a) To explore the importance of KM factors/enablers in contributing to the value creation of Malaysian companies.
(b) To explore the importance of IC in contributing to the value creation of Malaysian companies.
(c) To examine the effect of KM and IC on the performance of Malaysian companies.
(d) To examine to what extent financial performance is influenced by KM and IC in Malaysian companies.
(e) To explore the associations between IC and KM strategies on performance.
(f) To explore the associations between IC and KM strategies on financial performance measures.

2. LITERATURE REVIEW

As IC is a key strategic asset for organisational performance, how IC is being managed is critical to the enterprises in the knowledge-based economy. In line with the management of IC, Wiig (1997b) proposes the concept of Intellectual Capital Management (ICM) which focuses on building, renewing and maximising the value of the organisation's intellectual assets. On the other hand, KM focuses on managing and leveraging the organisation's IC (such as human resources) that can be transformed into value creation capability through the embedded IC (Salleh, 2008).

In the KM literature, knowledge is regarded as a process of applying expertise. The concept of KM focuses on knowledge flow through the process of creation, sharing as well as distributing knowledge (Alavi and Leidner, 2001). In other words, KM is more concerned with the 'flow' of knowledge from individual learning to organisational learning through value-creating KM enablers and KM processes that lead to better organisational performance (Edwards et al., 2005). KM is also recognised as the fundamental activity for obtaining, growing and sustaining IC in the organisations. KM is 'hands-on' and it manages knowledge processes effectively by maximising the organisation's knowledge-related effectiveness, returns from its knowledge assets and renewing them constantly (Wiig, 1997b).

The concept of integrating KM and IC was initiated by Wiig (1997a) and later by Van Buren (1999). Both of them state that there is a need to manage intangible assets actively in order to optimise the performance of organisations. The stocks of IC comprising of human capital, structural capital and customer capital are connected and they grow as exchanges of knowledge take place amongst individuals/employees in the companies. Hence, it is proposed that in KM implementation, knowledge strategy should focus on the building of these assets' capabilities and relationships between individuals within the organisations. The growth of these intangible assets in turn shall determine the economic performance of the organisations. Thus, IC is a representation of the stocks of intangible assets while 'knowledge flow' in KM is referred to as the electric current that runs between the stocks of intangible assets which cause growth to the human, structural and customer capital (Wiig, 1997a and 1997b). As such, KM is seen as the process of managing IC or knowledge-based intangible assets.

In addition, it is practically important to align the KM activities with IC results that have been targeted (Wiig, 1997a). KM and IC management should be integrated at an early stage to better monitor their progress and to achieve the desired business results. There is a need to set priorities, motivate employees and improve value creation capabilities in their work, thus enhancing the organisation's long term viability.

3. RESEARCH METHODOLOGY

3.1 Sample

A mail survey was conducted on Malaysian companies listed in the Malaysian Market in 2011. Questionnaires were posted to a total of 1,500 companies. A total of 66 questionnaires were received. However, only 57 questionnaires were usable for the analysis.

Table 1 shows the current position of the respondents of this study. Even though the questionnaires were directed at the chief executive officers, only six respondents were of this position. The majority (41%) of the respondents were non-financial managers. Nevertheless, their responses should be relevant as these managers could be involved in the management of IC and knowledge in their companies.

Table 1: Current Position of Respondents

Current Position of Respondents	Number	Percentage (%)
Chief executive officer/financial controller	6	10
Non-financial managers	23	41
Executives	5	9
Directors	10	18
Finance managers	6	10
Accountant	1	2
Not stated	6	10
Total	57	100

3.2 Questionnaire Design

A questionnaire was designed for the study. Besides demographic data, four main questions were developed in the questionnaire. The first question concerned the importance of KM factors in contributing towards value creation of the companies. The second question was regarding the importance of IC items in contributing towards value creation. The third question asked about

the importance of KM and IC to company performance. The fourth question focused on the extent to which financial performance is influenced by KM and IC. A seven point scale from 1 to 7 was used in the first three questions, where “1” was for “no importance” and “7” was for “crucial importance.” The last question used a seven point scale where “1” was for “strongly disagree” and “7” for “strongly agree.”

KM and IC variables were incorporated into the questionnaire by adapting from the lists developed by Salleh (2008) and Huang et al. (2007) respectively. After careful consideration, the final list contained 36 KM factors and 30 IC items. As these variables had already been tested by Salleh (2008) and Huang et al. (2007) on Malaysian firms, they were deemed relevant and valid to the Malaysian scenarios. Reliability test was then conducted on the KM and IC items. As the Cronbach’s Alpha was 0.948 which is above 0.8, no items were eliminated from the list of 66 items.

The components of KM activities incorporated in the questionnaire are as follows::

- Learning - ICT know-how & skill, job training, feedback on performance evaluation, learning opportunities, information-sourcing opportunities and teamwork & empowerment.
- Leadership - organisational policy, leadership support and commitment and ability to nurture knowledge-sharing culture.
- Technology - adequacy of ICT infrastructure & software and application of KM technologies.
- KM process - the process of knowledge creation, knowledge-sharing, knowledge retention and knowledge application.

The components of IC stocks incorporated in the questionnaire are as below:

- Human Capital - employee capability, employee development and retention and employee behavior
- Structural Capital - organisational infrastructure
- Innovation Capital - development of products and ideas
- Relational Capital - customer relationship database, supplier relationship database and other related relationship database.

The data collected was analysed using Statistical Package for Social Sciences (SPSS) version 17.

4. RESULTS AND DISCUSSION

4.1 Top Ten KM Factors

The respondents were first asked to indicate which KM factors contribute towards the value creation of their companies on a scale from '1' to '7,' where '1' represented no importance and '7' represented crucial importance. Table 2 shows the top ten KM factors which were regarded as important to corporate value creation.

Table 2: Top Ten KM Factors Contributing to Value Creation

Top Ten KM Factors Contributing to Value Creation	Rank	Mean	Std. Dev.
1. Top management leadership and commitment towards knowledge management.	1	6.09	1.057
2. A spirit of co-operation and teamwork.	2	6.05	0.953
3. E-mail is used to share information with other officers within and across divisions.	3	5.96	1.061
4. ICT infrastructure and information systems can speed up the daily work in searching for information.	4	5.89	0.9
5. Leaders encourage managers to be coaches, mentors and facilitators of learning.	5	5.84	1.082
6. Leaders encourage collaboration and team learning.	6	5.82	0.984
7. Adequate training internally to use ICT tools, information systems and computerized accounting system.	7	5.81	1.141
8. Top management encourages formal and informal communication channels.	8	5.79	1.098
9. User-friendliness and effectiveness of information systems infrastructure.	9	5.77	0.945
10. Leaders provide a climate of openness and have a culture of empowerment and feedback.	10	5.72	1.206

This study found that leadership in relation to KM principles is vital to Malaysian firms. Table 2 shows that five (5) leadership components are ranked amongst the top ten KM factors which contribute towards value creation:

1. top management leadership and commitment towards KM
2. leaders encourage managers to be coaches, mentors and facilitators of learning
3. leaders encourage collaboration and team learning
4. top management encourages formal and informal communication channels
5. leaders provide a climate of openness and have a culture of empowerment and feedback

This finding appears to be consistent with the previous studies carried out by Salleh (2008) and Chong et al. (2011) on the KM enablers in Malaysian public organisations, implying that leadership support for the culture on knowledge sharing is essentially important for KM implementation strategy.

Leadership in the KM environment is responsible for the practising of strategic management planning and systems thinking by making best use of the resources to share knowledge and ideas (Stankosky, 2005). Leadership also helps to foster a culture that supports trust, open dialogue and team learning to encourage and reward risk-taking, learning and knowledge-sharing activities (Kayworth and Leidner, 2003; Stankosky, 2005). Leaders should model proper behaviour for the organisational culture to evolve to a knowledge-sharing culture in facilitating KM activities (Ribiere and Sitar, 2003).

Besides the leadership component, learning opportunities for employees and technology resources are equally important as they are also ranked among the top ten KM factors which contribute to value creation in Malaysian firms. This is consistent with past studies (Salleh, 2008; Chong et al., 2011) which found learning and technological resources to be highly significant KM enablers.

Learning in KM is described by Stankosky (2005) as the acquisition of knowledge or skill through study, experience or instruction and social interactions. KM is a concept and practice that enables the organisation's employees to learn from each other as well as from prior experiences of former employees through the use of learning mechanisms. ICT infrastructures and KM technologies like communication networks, electronic mails, intranet, data warehousing and decision support systems are some of the basic elements necessary to support KM technology infrastructure (Stankosky, 2005).

4.2 Top Ten IC Items

Next, respondents were asked to indicate which IC items contributed to the value creation of their companies. They ranked 'employees' know-how/expertise/knowledge/ competence' as the most important (see Table 3). This top IC item is related to human resources, which implies that Malaysian companies regard human capital as vital to the value creation of their companies. This is consistent with the studies of Bukh (2003) and Eccles et al. (2001) who stated that more companies based their competitive strength and their company value on know-how and skilled employees, among other intangibles.

The other IC item relating to human resources which was ranked among the top ten items was 'employees' motivation.' According to Fitz-enz (2000), people, not cash, buildings or equipment, are the critical differentiators of a business enterprise. Lev (2001) too stated that the 21st century corporation is more dependent on its employees to succeed. Similarly, O'Regan et al. (2001) found that both CEOs and CFOs in Irish knowledge-intensive firms perceived that approximately half of the intangible value is derived directly from the people employed.

Table 3: Top Ten IC Items Contributing to Value Creation

Top Ten IC Items Contributing to Value Creation	Rank	Mean	Std. Dev.
1. Employees' know-how/expertise/ knowledge /competence	1	6.09	0.94
2. Customers' loyalty to your company/product e.g. repeat sales	2	5.98	1.152
3. Timeliness of product/service delivery	3	5.95	1.069
4. Market demands for products/services	4	5.93	1.142
5. Customer complaints and responses to complaints	5	5.93	1.042
6. Quality of product/service supplied	6	5.91	1.269
7. Customers' satisfaction (e.g. via survey) with company/product	7	5.88	1.192
8. Growth in business or service volume	8	5.86	1.017
9. Employees' motivation	9	5.80	1.166
10. Customer acquisitions (new customers)	10	5.80	1.034

Table 3 also reveals that out of the top ten IC items, eight items were related to customer capital and customer relationships. This implied that besides human capital, Malaysian PLCs also regarded customer capital as of paramount importance to the value creation of their companies. For instance, 'customers' loyalty,' 'timeliness of product,' 'market demands,' 'customer complaints and responses to complaints,' 'quality of products,' and 'customers' satisfaction' were all related to the development of customer capital. This finding is consistent with that of Abdel-Maksoud et al. (2005) who found that most UK companies also regarded 'timeliness' and 'number of complaints from customers' as critically important. This is in line with another study on Malaysian companies by Huang et al. (2011) that Malaysian managers do regard customer capital information as the most important, relative to human and structural capital.

4.3 Effect of KM and IC on Performance

When respondents were asked to indicate the effect of KM and IC on the performance of their organisations, the result revealed that IC and KM enhanced the performance of these companies. Overall, respondents agreed (an overall mean score of 5.27) that IC and KM did have an effect on corporate performance.

Malaysian PLCs perceived that there are increases in the numbers of skilled workers and expertise, levels of innovation and improved processes, number of new learning skills, numbers of new products or services, etc. (see Table 4 for details).

Table 4: Means of KM and IC on Performance

Effect of KM and IC on Performance	Mean	Std. Dev.
Increase in number of skilled workers and expertise	5.49	1.002
Greater levels of innovation and improved processes	5.46	1.087
Increase in number of individual's new learning skills	5.46	0.946
Increase in number of new products or services	5.25	1.199
Increase in amount spent on technology information processing system	5.25	0.851
Increase in number of suggestions implemented	5.04	1.117
Increase in number of research products and patents	4.95	1.381

4.4 Effect of KM and IC on Financial Performance Measures

On the whole, the respondents agreed (with an overall mean of 5.62 in Table 5) that the financial performance of the companies was influenced by KM and IC. The survey found that IC and KM increased customer satisfaction, shortened response time for customer complaints, increased market share and shortened time taken to market products or services. This could be due to a greater importance placed by Malaysian companies on customer capital as customer capital items are highly ranked in terms of value creation (as discussed earlier in section 4.2).

Table 5: Means of KM and IC on Financial Performance Measures

Financial Performance Measures	Mean	Std. Dev.
Increase in customer satisfaction	5.96	1.017
Shorter response time for customer complaints	5.70	1.017
Increase in average productivity per employee	5.68	1.121
Reduction in cost per business transaction	5.67	1.024
Increase in market share	5.47	1.12
Increase in return on investment	5.46	1.135
Shorter time to market products and services	5.42	1.101

4.5 Correlations Between IC and KM Strategies and Performance

This section analyses the associations between IC and KM strategies and performance. The result is shown in Table 6 below. The performance of Malaysian firms is associated with their IC and KM strategies. However, the associations between the increase in the number of research products and patents and IC (0.367), as well as KM (0.391), are not as strong as the others.

Table 6: Correlations between IC and KM Strategies and Performance

Performance	**KM**	**IC**
Increase in amount spent on technology information processing system	0.721** 0.000	0.691** 0.000
Increase in number of individual's new learning skills	0.664** 0.000	0.653** 0.000
Increase in number of new products or services	0.679** 0.000	0.792** 0.000
Increase in number of suggestions implemented	0.667** 0.000	0.756** 0.000
Increase in number of skilled workers and expertise	0.609** 0.000	0.691** 0.000
Greater levels of innovation and improved processes	0.593** 0.000	0.679* 0.000
Increase in number of research products and patents	0.391** 0.000	0.367** 0.000

**Significance (2-tailed)

4.6 Correlations between IC and KM Strategies and Financial Performance Measures

The associations between IC and KM strategies on financial performance measures were tabulated in Table 7. The findings indicate that KM and IC strategies of Malaysian firms were associated with their financial performance. It was thus implied that KM and IC strategies do create value for Malaysian firms.

Table 7: Correlations between IC and KM Strategies and Financial Performance Measures

Financial Performance Measures	KM	IC
Increase in average productivity per employee	0.721** 0.000	0.765** 0.000
Shorter response time for customer complaints	0.711** 0.000	0.770** 0.000
Shorter time to market products and services	0.697** 0.000	0.766** 0.000
Increase in customer satisfaction	0.676** 0.000	0.667** 0.000
Increase in return on investment	0.615** 0.000	0.686** 0.000
Reduction in cost per business transaction	0.604** 0.000	0.616** 0.000
Increase in market share	0.497** 0.000	0.521** 0.000

**Significance (2-tailed)

5. CONCLUSION AND RECOMMENDATION

This study has found support and commitment of top management and their leadership to be vital for the implementation of IC and KM programmes in executing the value creation strategies of the companies. Besides leadership, learning opportunities of employees and technology resources are equally important to the value creation of Malaysian firms. The study also found that Malaysian companies do perceive human capital and customer capital to be important to value creation. The result reveals that incorporating IC and KM into corporate strategies enhances the financial performance of Malaysian companies.

Besides these main findings, invaluable comments were received from the respondents. The following comments are from some key industrial players of Malaysian companies. The Chief Executive Officer of the News Straits Times Press (Malaysia) Berhad said that "there is no two ways about it - our business depends on KM and IC; and so does our economy." The Group General Manager (HR) of Kumpulan Perangsang Selangor Berhad also pointed out that "KM and IC are very important in today's economy. The companies of today are looking for value creators to ensure sustainable and optimum growth in financial and overall performance. However, the biggest challenge is to promote the KM and IC to these organisations." The Executive Director of Grand-Flo Solution Berhad added that "this is a very important step in the progression to high-income nation status, as knowledge-based securities will increase the overall

productivity of the nation." Specifically on KM, the Business Development Service Director of British American Tobacco emphasised that "KM is the last frontier to sustaining competitive advantage. Harnessing knowledge is a key to value creation." In addition, the senior manager of Nationwide Express Courier Service Berhad also agreed that "KM is the most strategic management tool that can drive an organisation to survive and thrive in the new world of uncertainty and risk." The Senior Manager of Bintulu Port Sdn Bhd too emphasised that "knowledge is crucial and we need knowledge to perform our task and continue our business to expand globally." Finally, the Executive Director of DPS Resources Berhad added that "knowledge and skills must be generating up to the high expectation for improvement in the future. Hope more research will get the best result in order to create a more valuable and intellectual generation."

One of the limitations of this study is its low response rate. Hence, care has to be taken when making generalised conclusions. Though the empirical evidence of this study does reveal the types of KM and IC components Malaysian companies should concentrate on to enhance their future value creation capability, this evidence is based mainly on perceptions only. More in-depth studies on the management of IC and knowledge in Malaysian companies should be conducted via interviews and case studies. Further studies on the challenges faced by these companies in managing IC and knowledge and also linking value creation to corporate strategies can also be conducted.

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CONSOLATION PRIZE

IFRS AND INVESTMENT EFFICIENCY

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IFRS AND INVESTMENT EFFICIENCY

ABSTRACT

The Accounting profession is sometimes seen as detached from the society at large because it is mainly associated with the business world. This paper highlights the contribution made by the profession to the society through the improvements in accounting standards. One critical feature of any economic development is the investment made by either the private or public sector. The introduction and adoption of International Financial Reporting Standards (IFRS) provided us with the opportunity to study the impact of the standards on investment efficiency. One of the arguments put forward in favour of IFRS is that its adoption improves information quality produced and relayed by firms. With better quality information, investors can make better decisions regarding investments. Efficient investment leads to optimal allocation of resources, hence enhancing the economic growth. The aim of this paper is therefore to provide evidence of the relationship between IFRS adoption and investment efficiency. Investment efficiency is measured by investment-cash flow sensitivity. A total of 240 observations from firms listed on Bursa Malaysia were analyzed. The investment efficiency of the sample was then compared between pre and post adoption of IFRS. The results suggest that there is an improvement in investment efficiency after the adoption of IFRS. Based on the results obtained, this study has provided evidence as to the benefits of having high quality accounting standards and the benefits extended to society at large.

1. INTRODUCTION

In order to create a uniform global system for financial reporting, the International Accounting Standards Board (IASB) was formed to serve as the global accounting standard-setting body. In 2001, the IASB promulgated the first iteration of IFRS, offering the possibility of a single set of high-quality accounting standards that could be used by all nations. Starting from 2006, firms listed on Bursa Malaysia were required to prepare their financial statements according to the new set of accounting standards which were based on IFRS. Sizeable studies have been dedicated to studying anticipated and actual economic consequences of IFRS adoption. However, only a few of these studies focus on investment efficiency and none in an emerging market. The information environment in the emerging market is different from that of the developed economy where most of the studies are done (Ball, Robin and Wu, 2003).

Investment efficiency has both firm-level and macro-economic implications. At firm level, investment is one of the determinants of the return on capital obtained by investors. At macro level, investment is one of the determinants of economic growth (Alfaro, Chanda, Kalemli-Ozcan and Sayek, 2004). If there were not enough investment, be it from public or private sectors, the economy may become stagnant. In any open economy that practices capitalism, investments by the private sector are even more important in determining the growth of the economy. Given the importance of investment, steps should be taken to encourage it. Investments should not only increase in quantity but steps should also be taken to ensure that the investments are made efficiently. Otherwise, the limited resources will not be optimally allocated. A firm is said to invest efficiently if it undertakes investments with positive net present value (NPV) under the scenario of no market friction such as agency costs or adverse selection. The firm is under-investing if it passes up investment opportunities that would have positive NPV. Correspondingly, it is over-investing when it invests in investments with negative NPV. In short, when a firm over or under-invests, given the resources that it has, it is not investing efficiently.

Previous studies on investment efficiency have identified that firms with high agency cost are faced with tighter financing constraints and hence rely more on internal funds (Fazzari, Hubbard and Petersen, 1988). Therefore, any shortage in the firm's internal cash flows leads to an underinvestment problem. However, investment can be sensitive to internally-generated cash flows not only because firms are financially constrained but also because firms might have excess cash that managers do not want to distribute to investors. In this situation, managers may make investments that are not beneficial to shareholders, such as growing the firms beyond optimal size (Jensen, 1986). This constitutes an over-investment problem. Under and over-investment signify investment inefficiency.

The study by Fazzari et al. (1988) indicates that one of the causes of investment inefficiency is the agency cost. Other studies (Biddle and Hilary, 2006; Biddle, Hilary and Verdi, 2009), show that investment efficiency is positively associated with accounting quality as well as disclosure level (Khurana, Pereira and Martin, 2006). In conclusion, these studies found that higher financial information quality leads to decreased information asymmetry and agency cost problems, subsequently increasing investment efficiency. This indicates that the quality of information produced and published by firms is important. Higher quality information, especially financial information will facilitate optimum decision-making by investors regarding their investments.

One of the purposes of setting accounting standards is to ensure that the financial information communicated to the users is of a certain quality. The Malaysian Accounting Standards Board (MASB) in its Conceptual Framework for Financial Reporting issued in November 2011 stated that fundamental qualitative characteristics of financial information are relevance and faithful representation. Relevant financial information is capable of making a difference in the decisions made by users. To be relevant, the information must have predictive and confirmatory value. Outdated information is lacking in both. To keep up with the changing business environment, the accounting standards must also evolve to cater for new problems and practices. This is among the reasons for the improvement in accounting standards which recently led to the introduction of IFRS. Barth, Landsman and Lang (2008) among others, demonstrate that IFRS adoption is associated with higher accounting information quality, such as less earnings management, more timely loss recognition, and more value relevance of accounting numbers. These studies suggest that adoption of IFRS resulted in higher quality financial information. To extend further, this higher quality information should be manifested in higher investment efficiency. The motivation of this study is to investigate whether or not adoption of IFRS increases information quality which translates into increased investment efficiency.

This study was conducted in an information environment different from previous studies. In an environment where information is already rich, any extra information announced by firms may not give much impact to investors' decision-making process. Malaysia provides a good setting as the legal system and capital market are well developed (Mohamad, Hassan and Ariff, 2007) but the information environment is not rich (Ball et al., 2003). Investment efficiency from 240 observations of firms listed on Bursa Malaysia was compared between pre- and post-IFRS adoption. The results provide evidence that investment efficiency post-IFRS adoption is higher than before the adoption of IFRS. This finding suggests that the IFRS is capable of increasing the quality of information produced and this is manifested partly in increased investment efficiency, lending support to its adoption. This indicates that accounting standard-setters can contribute to efficient corporate investment activity by improving the quality of countries' accounting systems. The introduction of IFRS is however, not without resistance. The changes require implementers to learn and adapt to the new requirements and this incurs costs. If benefits gained from the implementation of IFRS outweigh costs incurred, then resistance can be reduced.

This study has highlighted one of the benefits firms can have from implementing IFRS and this can be used by the appropriate authority in their efforts to reduce resistance and increase compliance. The findings should also be of interest to policy-makers in Asia Pacific in their contemplation of whether or not to adopt IFRS. It is important to note that, without appropriate knowledge of the impact of these changes, decision-makers could be misled into making sub-optimal decisions.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

In its website[18], MASB has stated its mission as: "to develop and promote high quality accounting and reporting standards that are consistent with international best practices for the benefit of users, preparers, auditors and the public in Malaysia." In achieving this mission, MASB is assisted by the Malaysian Institute of Accountants (MIA) which promotes and monitors the profession and its conduct. In order to be consistent with international best practices, MASB decided to adopt IFRS with the convergence exercise starting in January 2006, before its full adoption in 2012. One important reason for this move was so that the financial information produced by firms in Malaysia would be comparable to international information. Comparability is one of the important characteristics of information quality. Therefore, this move can be seen as an effort towards improving the quality of financial information produced.

The benefits from adoption of IFRS have been speculated on even before its implementation. For instance, a study by Armstrong, Barth, Jagolinzer and Riedl (2010), modelled the anticipated economic consequences of IFRS adoption before its actual adoption. Their results indicated that capital markets expected net benefits from IFRS adoption. This expectation however did not support earlier findings by Christensen, Lee and Walker (2007). Their findings suggest that not all firms anticipate the same benefits from the adoption of IFRS. These two studies illustrate that while users of financial information expected benefits from IFRS adoption, the practitioners at firm level were somehow sceptical. This is understandable because changing to new accounting standards is not without cost. Practitioners need to re-educate themselves about new requirements. This partly contributes to resistance towards the adoption of IFRS. If the cost was greater than the benefits, the resistance would have been even higher. With adequate knowledge, especially about the benefits associated with the adoption of IFRS, the resistance could be lowered.

[18] http://www.masb.org.my

A study by Daske, Hail, Leuz and Verdi (2008) investigated the impact of IFRS adoption in 26 countries on equity valuations, cost of equity and capital market liquidity. They showed an increase in equity valuations, an increase in market liquidity as well as a decrease in cost of capital around the adoption of IFRS. In addition, they found that these capital market effects existed only in countries with strong reporting incentives and legal enforcement. The effects were also stronger in countries that had greater differences between IFRS and local GAAP. In the context of Malaysia, Wan Ismail, Zijl & Dunstan (2009) found the adoption of IFRS was related to higher reported earnings quality. Similarly, Kwong (2010) provided evidence that IFRS was value-relevant for decision-making among investors within Malaysia. We complement this stream of the literature by focusing on investment efficiency, thereby indicating another advantage that is likely to flow from the adoption of IFRS.

Investment is essential to the growth of a firm. Firms may invest in technology that will increase their productivity, or diversify into related business or any other investments that will bring future benefits. Firms' investments constitute private sector investment that contributes to the development of an economy. Therefore, investments by firms are important in ensuring the economic growth of a country. A firm is seen as investing efficiently when it participates in investments with positive NPV. Studies on investment efficiency (for example, Fazzari et al., 1988) show that firms faced with financing constraints have higher investment-to-cash-flow sensitivity. These firms tend to under-invest due to inadequate resources. One of the determinants of financing constraints is lack of information. In other words, when investors know little about the firm, they will not invest in the firms, due to uncertainty regarding their returns. It has been documented that low levels of corporate disclosure can be associated with higher cost of capital for the firms (Embong, Mohd-Saleh and Hassan, 2012), making it costly for them to invest. The investors not only rely on the amount of information but the quality of information produced. High disclosure level of quality information will encourage investors to invest because with knowledge of the firms, investors will be more confident with their investments. On the other hand, when investors were less informed about the firm, they would be reluctant to invest due to the high uncertainty they face. When firms are unable to attract investors, they have to undertake investments using internal funds. This leads to high sensitivity of investment–to-cash-flow and may result in firms under-investing. Under-investment indicates investment inefficiency, meaning, given the resources the firm has and the opportunity to invest, the firm is not investing in the manner it should.

Under-investment is not the only phenomena. The firm may have extra cash flow and this may encourage managers to invest freely, even though the investment is not to the benefit of other stakeholders. The probability of this happening is higher when there is agency problem. The agency cost explanation introduced by Jensen (1986) suggests that monitoring difficulty creates the potential for management to spend internally-generated cash flow on investments that are beneficial from a management's perspective but costly from a shareholders' perspective. Harford (1999) for example, found that the number of cash-rich firms undertaking diversifying acquisitions was significantly higher than cash-poor firms. This was supported by Opler, Pinkowitz, Stulz & Williamson (1999). They found some evidence that companies with excess cash have higher capital expenditures, and spend more on acquisitions, even when they appear to have poor investment opportunities. These behaviours increase the sensitivity of investments to cash flows but, in this case, the sensitivity is due to having excess cash. In other words, there is a problem of over-investing. Both under- and over-investing signify investment inefficiency. One of the factors contributing to this problem is the availability and quality of information provided to the users, especially investors.

The agency costs theory posits that agency problem arises because some parties have privileged information that other parties do not have. This creates a situation of information asymmetry. Theoretical models demonstrate how information asymmetry problems lead to higher cost of external finance or capital rationing. For instance, Myers and Majluf (1984) illustrated a situation in which a firm is faced with opportunity to invest in a positive NPV. To undertake the investment, external financing is required. The managers of the firm have information about existing projects' profitability that is not available to potential investors. The information about the existing projects may be bad or good. Under this situation, managers are inclined to issue equity when the existing projects' performances are bad. In order to attract equity investors, managers will disclose only favourable information. This may lead investors into making sub-optimal decisions regarding the investment. On the other hand, Jensen and Meckling (1976) postulated that external financing decreases the amount of control held by managers. With the privilege of information, managers tend to reallocate wealth from outside investors to themselves, for example by investing in projects that bring benefits to them. Under this circumstance, investors demand higher return by adjusting the risk premium upward to compensate them for monitoring of managerial actions. This means higher cost of capital to the firm and in return limits the capability of firms to invest. The preceding discussions illustrate that the quantity and quality of financial information is crucial in determining the ability of firms to attract funding and consequently the investments made by firms.

Biddle and Hilary (2006) investigated the association between investment efficiency, measured by investment-cash flow sensitivity, and accounting quality measured through earnings quality and accounting timelines. They believed that if managers revealed high-quality financial information, investors would not ration capital because they could then make better estimates regarding returns on their investments. Furthermore, if higher accounting quality allowed perfect monitoring by potential investors, there would be no agency problem. Their arguments indicate that higher accounting quality overcomes the capital rationing or high cost of capital by mitigating either the moral hazard or the adverse selection problem. This consequently results in better investment decisions and is manifested in investment efficiency of the firm. Biddle et al. (2009) provided further support that accounting quality is associated with investment efficiency.

Previous findings provided strong evidence that accounting quality plays a vital role in increasing investment efficiency by alleviating agency problems and information asymmetry. The proponents of IFRS highlighted the quality of information as one of the benefits of adopting IFRS. This has been supported by studies such as Armstrong et al. (2010). Availability of high quality information in return enables investors to make better decisions regarding their investments. Firms at the same time will be able to attract more funding and this will enable them to invest more efficiently. The previous discussions therefore lead to this study's hypothesis stated as follows:

H_1: Investment efficiency is higher in the period after IFRS adoption

3. METHODOLOGY

Firms listed on the Main Board of Bursa Malaysia were considered as the population of this study. This was determined because Malaysia has more developed accounting and regulatory institutions compared to other member countries of the Association of Southeast Asian Nations (ASEAN) (Saudagaran, 2005). Moreover, Malaysia provides a good setting because the legal system and capital market are well developed (Mohamad, Hassan and Ariff, 2007) but the information environment is not rich (Ball et al., 2003). Hence the impact from changes in information environment, for example from improved accounting standards, should be more prevalent compared to the already information-rich environment that has been studied previously.

All firms listed on the main board are potential samples. This study covered a period of six years; 2003 to 2005 were considered as pre-IFRS adoption and 2007 to 2009 were considered as post-IFRS adoption. Year 2006 was not included because this was the transition period from MASB to IFRS. Since comparison of investment efficiency between pre- and post-adoption of IFRS was to be made, firms included as the sample needed to exist throughout the whole study period. In addition, the calculation of investment efficiency required capital expenditure data for the whole period of study. Firms in financial services were also excluded because they were subjected to different regulation. Previous studies (for example, Allayannis and Mozumdar, 2004), have also excluded firms with negative cash flow to minimize any possible bias in the cash flow coefficient as a result of financial distress. Given all these conditions, there were 240 final observations included in this study, consisting of 40 constant firms over a six-year period.

Investment efficiency was measured using the model proposed by Hovamikian and Hovamikian (2005). The model concludes investment efficiency by focusing on the sensitivity of investment (measured from capital expenditure) to cash flow. This model has been used by several studies such as Schleicher, Tahoun and Walker (2010). The model is based on a seminar paper by Fazzari et al. (1988), regarding under-investment. In order to investigate their hypothesis about under-investment, Fazzari et al. (1988) examined whether there was a difference in the investment activities of firms that were not financially constrained, and financially-constrained firms. They indicated that the capital investment of constrained firms was more sensitive to their internally-generated cash flows, compared to those without the constraints. A subsequent stream of studies found consistent results, such as Schleicher et al. (2010). These studies lend support to the use of investment-cash flow sensitivity as a measure of investment efficiency. This study adopted the same measure using the following model:

$$\text{Capital expenditure} = \alpha + \beta_1 \text{ current cash flow} + \beta_2 \text{ lagged cash flow} + \beta_3 \text{ MTB} + \varepsilon$$

calculated as follows:

$$\frac{I_{it}}{TA_{it-1}} = \alpha + \beta_1 \frac{CF_{it}}{TA_{it-1}} + \beta_2 \frac{CF_{it-1}}{TA_{it-1}} + \beta_3 \text{MTB}_{it} + \varepsilon_{it}$$

where:

I_{it} gross capital expenditures for firm i in year t.

TA_{it-1} the total assets for firm i in year t−1.

CF_{it} & CF_{it-1} represents cash flow to firm i in years t and t−1 respectively, and is measured by income before extraordinary items and before depreciation and amortization.

MTB_{it} market-to-book ratio of assets for firm i at the beginning of period t

The required data was obtained from annual reports of firms and website of Bursa Malaysia. In line with literature (e.g. Schleicher et al., 2010) for testing investment efficiency, we emphasis the coefficient of one-year lagged cash flow term, $\frac{CF_{it-1}}{TA_{it-1}}$, because it is more suitable than the use of current cash flow. Previous studies such as Schleicher et al. (2010) suggested that the average time between the investment decision and the completion of the investment project is around one year. Thus, a one-year lagged cash flow term seems the most appropriate specification and any changes in completed investments are expected to be more correlated with changes in lagged cash flow.

Beside investment-cash flow sensitivity, there were two other frequently used models to measure over- or under-investment; the one applied by Richardson (2006), and another one by Biddle et al. (2009). Richardson (2006) used expected investment level method. This method is based on a regression consisting of financial statement items where the residual from the regression represents over- or under-investment. Biddle et al. (2009) on the other hand, divided the sample by firm-specific characteristics, cash and leverage, which were shown to be associated with over- and under-investment respectively. We chose the investment-cash flow sensitivity model because this method is based on cash flow and hence was easier to interpret.

4. RESULTS AND DISCUSSIONS

To appreciate the data, descriptive statistics of the variables are presented in Table 1 below. The data before and after the adoption of IFRS was analyzed and the statistics are given in Panel A and Panel B.

Table 1: Descriptive Statistics

	Capital expenditure	Current cash flow	Lagged cash flow	Market-to-Book
Panel A: Pre-IFRS				
Mean	0.0683	0.1080	0.0957	1.0792
Median	0.0401	0.2647	0.0806	1.0830
Maximum	0.5680	0.3977	0.6990	1.1362
Minimum	0.0000	0.1050	0.1117	1.0204
Std. Dev.	0.1467	0.0893	0.1094	0.0210
Panel B: Post-IFRS				
Mean	0.1244	0.0822	0.0632	1.0671
Median	0.1136	0.0833	0.0776	1.0737
Maximum	4.7444	0.2569	0.2065	1.1006
Minimum	0.0000	0.1746	0.6425	0.9937
Std. Dev.	0.6747	0.0802	0.1219	0.0247

Capital expenditure, current and lagged cash flows were scaled down to total assets. The results show that in the pre-IFRS period, on average around 6% of total assets is capital expenditure. This percentage increased dramatically in Post-IFRS era to more than 12%. The mean for market-to-book value before and after IFRS adoption were almost the same, which is 1.07 and 1.06 respectively. This indicated no major change in the opportunity to invest for the firms included in this sample.

In order to calculate investment efficiency, the data on capital expenditure was regressed against current cash flow and lagged cash flow. Market-to-book ratio was included as a control variable in the regression. The coefficients β_1 and β_2 obtained from regression indicate the sensitivity of investment to cash flow. Since we were more interested in the lagged cash flow, β_2 was therefore the coefficient of interest. This β_2 shows sensitivity of investment to lagged cash flow. The more sensitive investment to cash flow, the less efficient the firm is in their investment. In other words, higher value of β_2 indicated lower investment efficiency. All observations in the sample were regressed and coefficients obtained were compared to pre- and post-IFRS adoption levels.

Table 2 presents the coefficients β_1 and β_2 that were obtained from the regression of capital expenditure against current and lagged cash flow. P-values (two-tails) are presented in brackets. The regressions were performed separately for pre- and post-IFRS adoption and the coefficients were compared. Running two separate regressions did not pose any problem because the same firms were included in both periods.

Table 2: Regression Results for Investment-Cash Flow Sensitivity

Variable	Pre-IFRS	Post-IFRS
Current cash flow	0.115312 *(0.0329)*	0.163550 *(0.0261)*
Lagged cash flow	**0.111546** ***(0.0100)***	**0.096820** ***(0.0129)***
Market-to-book	0.020911 0.0398 *(0.1175)*	0.552143 0.0729 *(0.0939)*
R-squared	0.125790	0.102938
Adjusted R-squared	0.087840	0.086288
Durbin-Watson stat	2.398426	2.040265

The results in Table 2 show that the coefficient on the one-year lagged cash flow, in the pre- and post-IFRS period are 0.11 and 0.09 respectively, and statistically significant at 5% level. These results suggest that in the pre-IFRS period, the investment of firms is more sensitive (higher coefficient) to lagged cash flow in comparison to the period after the adoption of IFRS. Higher sensitivity indicates lower investment efficiency. In other words, the results support our hypothesis that investment efficiency is higher after the adoption of IFRS.

5. CONCLUSION

This study investigated the consequences of the adoption of IFRS in Malaysia. One of the proposed benefits of IFRS is its ability to increase information quality. Information quality is gauged through, for example, earnings quality and value relevance of accounting numbers. Information quality could also be manifested in the form of lower information asymmetry that may result in lower cost of equity and investment efficiency. This study focused on investment efficiency, being motivated by the fact that investment is an important element in the growth of an economy. Investment by private sectors is a significant contributor to the total investment in an open economy. When firms invest efficiently, this will result in optimal resource allocation. Therefore the role of the private sector cannot be underplayed.

The findings of this study show that those responsible for the development and enforcement of business practices, particularly in Malaysia, indirectly contribute to the development of the country. This study provides evidence that accounting standards play a significant part in determining how the business world conducts itself.

This study highlights another benefit of IFRS adoption, that is, in terms of investment efficiency. The results however, should be interpreted with caution for the following reason: the small number of firms included as our sample. This was so due to our limited resources. Further study should be done to include a larger number of firms. Another limitation is that Malaysia has been implementing accounting standards based on the International Accounting Standards (IAS). It will be interesting to study the same impact on countries that switch from a completely different base of accounting standards, for example, the Philippines, which has agreed to switch to IFRS from previous standards that are very much based on US GAAP. Such study will provide more knowledge regarding benefits of IFRS as well as difficulties faced in connection with the changes.

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CONSOLATION PRIZE

EVIDENCE ON THE USEFULNESS OF MANAGEMENT ACCOUNTING SYSTEMS INFORMATION IN MALAYSIAN MANUFACTURING FIRMS

Dr. Kamisah Ismail

Associate Professor Dr. Che Ruhana Isa

EVIDENCE ON THE USEFULNESS OF MANAGEMENT ACCOUNTING SYSTEMS INFORMATION IN MALAYSIAN MANUFACTURING FIRMS

ABSTRACT

Escalating global competition and drastic changes in manufacturing technologies have resulted in a more volatile and challenging business environment. In this new environment, firms need to continuously re-examine appropriate strategies and reinvent their business processes in order to remain competitive. The adoption of more advanced manufacturing techniques such as lean manufacturing is one of the strategies that help firms to sustain their competitiveness and achieve the desired outcomes. In such environments, traditional management accounting systems (MAS) may be incapable of providing adequate and timely information for effective decision-making. The systems must be modified to ensure they remain relevant and capable of meeting the current information needs of today's managers. Being equipped with the right information on a timely basis will enable managers to make effective business decisions which will then lead to enhanced business performance. Hence, the question remains as to whether more sophisticated MAS will enable firms to improve performance.

The main aim of this study is to investigate the role of sophisticated MAS information in the relationship between lean manufacturing and performance. Sophisticated MAS (hereafter the MAS) information is defined as information which is broader in scope, more timely, integrated and aggregated. Lean manufacturing comprises two prominent practices in the manufacturing environment: Just-In-Time (JIT) and Total Quality Management (TQM). A questionnaire survey of manufacturing firms listed in the Federation of Malaysian Manufacturers (FMM) Directory 2009 was used to collect the data. The results of the study reveal that the direct relationship between lean manufacturing and performance is positive but not significant. However, the results show the relationship between lean manufacturing and performance is indirect through the MAS. This implies that in the intense lean manufacturing environment, sophisticated MAS play a very significant role in ensuring managers are provided with broader scope, and timely, aggregated and integrated information in order to make effective decisions. This provides evidence that the use of broader scope, more timely, integrated and aggregated MAS information in a lean manufacturing environment facilitates firms' improvements in organisational performance.

The results of this study have implications to both theory and practice. The results provide valuable empirical evidence of the importance of MAS information for the managers in enhancing organisational performance, particularly in lean manufacturing firms. The results of this research imply that the relationship between the types of manufacturing practices adopted by firms, and performance, could be improved through the use of MAS information.

1. INTRODUCTION

Malaysian firms are facing unprecedented challenges to survive and sustain their market positions because of advances in technology, proliferation of new products, intense price wars, efficient marketing and globalisation. In these environments, managers need to be aware of the market faced by their firms to appropriately plan and design the control systems for their organisations (Khandwalla, 1972; 1973). Malaysian business organisations face competition on three fronts: (1) From within the country itself; (2) From members of ASEAN countries such as Indonesia, the Philippines, Singapore and Thailand; (3) From countries other than ASEAN ones, particularly the more technologically advanced and economically successful developed countries such as the United States, Japan, Taiwan, Germany, France, the United Kingdom, Italy, South Korea and Australia.

To manage the turbulent and uncertain competitive environment, firms all over the world adopt various manufacturing strategies such as lean manufacturing. According to Taj (2008), lean means "manufacturing without waste" as the main purpose of adopting lean manufacturing is to eliminate waste (*muda*) and non-value added activities. Taj (2008, p. 219) defined waste as "anything other than the minimum amount of equipment, materials, parts and working time that are essential to production." The origin of lean manufacturing is the Toyota Production System that was developed after World War Two (WWII). Toyota had created a fast and flexible process that could give customers what they wanted, at the time they wanted it, at the highest quality and at an affordable cost (Liker, 2004). The main goal of Toyota was to increase profit by reducing cost and removing non-value added activities, while at the same time getting higher capital turnover ratio and increased productivity through the process of continuous improvement (Monden, 1983).

As explained above, the main objectives of implementing lean production are to increase productivity, reduce costs, improve quality and enhance performance. However, past empirical studies by various researchers such as Balakrishnan et al. (1996), Fullerton et al. (2003), and Hofer et al. (2012) show that the implementation of lean manufacturing did not necessarily result in improved performance. This anomaly could be due to the inability of the traditional MAS to meet the information needs of lean manufacturers. The adoption of modern practices such as lean manufacturing requires appropriate, and timelier, information to facilitate their implementation. Researchers have concluded that managerial use of appropriate MAS is useful in assisting firms to improve performance. For example, Mia and Clarke (1999) showed that benchmarking and monitoring MAS information help firms to face competition and improve their performance. Mia (2000) also found that the use of MAS information in JIT firms could assist an organisation in improving its profitability. Fullerton and Wempe (2009) also demonstrated that the use of broad-scope MAS that provides non-financial information on manufacturing performance assists firms improve financial performance in lean manufacturing environments. Using a sample of Malaysian manufacturing firms, Ismail and Isa (2011) demonstrated that the use of broad-scope MAS information led to better performance among companies with higher-level Advanced Manufacturing Technology (AMT).

Based on the foregoing discussion, this study aims to investigate whether managerial use of MAS information is associated with enhanced performance among firms that adopt lean manufacturing. The findings will contribute to our understanding of the role of MAS in assisting firms to gain better performance in the context of lean manufacturing environment. In addition, the review of prior literature on lean manufacturing and performance (e.g.: Balakrishnan et al., 1996; Fullerton et al., 2003; Fullerton and Wempe, 2009; Yang et al., 2011; Hofer et al., 2012) shows inconclusive results pertaining to whether lean manufacturing does indeed lead to enhanced performance, which warrants further investigation.

The remainder of this paper is structured as follows: Section 2 provides the development of the research framework. Section 3 discusses the methodology used in the study. Section 4 provides a discussion of the results of the data analysis from a questionnaire survey. Finally, discussion, limitations and conclusions are presented in Section 5.

2. DEVELOPMENT OF RESEARCH FRAMEWORK

2.1 Lean Manufacturing

Lean manufacturing has been identified as one of the strategies to minimise the adverse effects of the turbulent competitive environment. To compete successfully in such environment requires firms to continuously reinvent their business processes to manage and control product quality and manufacturing costs. By adopting lean manufacturing, firms will be able to eliminate waste and non-value added activities, which will then enable them to eliminate unnecessary costs and subsequently, enhance organisational performance.

Russell and Taylor III (1995), for instance, highlighted four distinctive competences that an organisation should pursue in order to compete in the marketplace. The distinctive competences are cost, quality, flexibility and speed. Competing on cost means the elimination of all waste, which is similar to Just in Time (JIT) philosophy. Competing on quality refers to an opportunity to please the customer, which is the objective of Total Quality Management (TQM). Competing on flexibility means a variety of choices to be offered to the customer, which is one of the criteria of JIT. Finally, competing on speed refers to a reduction in the time required for the product to enter the market. This time-based competition is crucial in lean manufacturing, especially in JIT environment. Based on these four distinctive competences, we can conclude that lean manufacturing comprises these four competences in order to gain competitive advantage.

The literature has identified two main components of lean manufacturing: JIT and TQM. JIT is a philosophy based on the idea of producing the necessary products in the necessary quantities at the necessary time (Sugimori et al., 1977), while at the same time, eliminating waste in operations to ensure continuous improvement. According to Foster and Hongren (1987), JIT is a philosophy that focuses on four important aspects: the elimination of all activities that do not add value to a product or services, a commitment to a high level of quality, a commitment to continuous improvement in the efficiency of an activity, and emphasis on simplification and increased visibility to identify activities that are non-value added. TQM is an integrative philosophy of management for continuously improving the quality of products and processes to achieve customer satisfaction by eliminating waste, improving quality, doings things right the first time, developing skills and reducing product costs. Thus, the customer is the focus of all the

efforts to improve the product and process quality. Initially, it was limited to factory floors, but it is now applicable to all areas of organisation (Dean and Snell, 1991).

Thus, JIT and TQM adoptions are expected to enhance business performance. JIT, for example, may improve performance by eliminating waste and reducing inventory handling costs while TQM assists firms in improving performance by continually focusing on quality. However, past studies examining the relationship between these manufacturing practices and performance showed mixed results. For example, in a cross sectional study, Fullerton et al. (2003) found that only JIT manufacturing practices had a positive relationship to performance. However, in a longitudinal study, JIT quality and JIT unique practices outperformed JIT manufacturing practices. Balakrishnan et al. (1996) found that performance of JIT firms fell significantly less compared to the non-JIT firms after three years of JIT adoption. In contrast, Maiga and Jacobs (2009) showed that successful adoption of JIT resulted in enhanced firm performance over a five-year window.

The study of Hendricks and Singhal (1997), and Kaynak (2003) showed that TQM positively affected performance. Dean and Snell (1996) also found that only TQM had a positive direct relationship with performance, while integrated manufacturing practices were not significantly related to performance. A more recent study by Banker et al. (2008) demonstrated that world class manufacturing that comprises JIT and TQM, among others, mediated the relationship between Activity Based Costing (ABC) and plant performance, suggesting the capabilities of these manufacturing practices in enhancing performance. Similarly, Yang et al. (2011) found that lean manufacturing, which consists of JIT, quality management and employee involvement, had a positive association with both market and financial performance.

2.2 Lean Manufacturing, MAS Information and Performance

Lean manufacturing aims to reduce waste by eliminating non-value added activities. Successful lean manufacturing implementation should lead to reduction in costs, increase in productivity, and improved quality (Monden, 1983; Cooper, 1995; Karlsson & Åhlström, 1996; Liker, 2004), which subsequently will result in improved financial and non-financial performance of an organisation (Fullerton and Wempe, 2009; Rahman et al., 2010; Taj and Morosan, 2011; Yang et al., 2011). As a result of lean manufacturing adoption, inventory turnover and leanness would increase, and the resulted reduction of waste should lead to lower costs and efficiency, which implies a higher profit (Fullerton et al., 2003; Hofer et al., 2012). A successful implementation

of lean manufacturing means that lower costs can be transferred to customers via a lower price for a higher quality product. Reduction in price and improvement in quality will lead to satisfied and loyal customers, which will in turn lead to increased profit (Whiting, 1986).

It has been argued that sophisticated MAS are capable of providing appropriate managerial information on a timely basis. MAS information refers to the information provided by management accounting systems in an organisation (Chenhall and Morris, 1986). For the past few decades, the use of MAS in organisations has been very limited. MAS have been traditionally viewed as having narrow scope because they are expected to only provide financial, historical and internal information (Mia, 1993). However, MAS have been changing to adapt to the new environment to meet managers' need for more accurate, relevant and timely information. Thus sophisticated MAS may be argued as playing a critical role in providing adequate information about the major impact on a company's performance. Following Chenhall and Morris (1986), the sophisticated MAS information used in this study was defined as information, which is broader in scope, more timely, integrated and aggregated.

While a traditional MAS focuses on internal information within the organisation, financial information and information that is based on historical data, a sophisticated MAS provides a broader scope concentrating on external, non-financial and future-oriented information. This transformation is necessary to overcome the claims made by Johnson and Kaplan (1987), among others that the traditional MAS information is obsolete and should be changed in order to adapt to a new business environment. The timeliness of MAS information refers to the ability to respond immediately to the needs of an organisation, a department or manager. This includes both the frequency and speed of reporting. When the information is reported in a timely manner, it will lead to efficient control systems and an effective decision-making process. Aggregation consists of various forms. It may refer to the provision of raw or unprocessed input, periods of time, areas, or summation in formats in analytical or decision models such as CVP and discounted cash flow (DCF) analyses. Aggregated information may assist managers in the planning process, especially in conditions of high uncertainty. Integration concerns the interaction of different sections within a subunit. The decisions made by one unit may affect other units. It focuses on precise targets for activities as well as their interdependence and reporting within the subunit.

Earlier research (e.g.: Mehra and Inman, 1992; Inman and Mehra, 1993; Powell, 1995; Balakrishnan et al., 1996; Hendricks and Singhal, 1997; Terziovski and Samson, 1999; Claycomb et al., 1999; Boyd et al., 2002; Kinney and Wempe, 2002; Fullerton et al., 2003; Kaynak, 2003; Ahmad et al., 2004; Arawati, 2005) have found a mixed result of the relationship between components of lean practices to performance, but much of the earlier research has not used lean manufacturing as a total concept. Due to the fact that lean practices are regarded as world-class manufacturing, the inconclusive results in the relationship between lean practices and performance, thus, warrant further investigation.

In addition, there could be other factors that could influence the relationship between lean manufacturing and performance. Managers' use of MAS information could be an important factor that could explain the inconclusive findings between lean practices and performance. Mia and Clarke (1999) suggest that managerial use of the MAS should be examined in other circumstances, including the application and evaluation of new manufacturing technology such as CAD/CAM and JIT manufacturing systems. The use of the information provided by the MAS may assist managers in the adoption and implementation of manufacturing practices more efficiently and effectively. The application of new manufacturing technology is expected to change the way managers use MAS information. Broad-scope MAS, timeliness, integration and aggregation are expected to be useful to managers in lean manufacturing environments. Chenhall (2003; 2007) proposed that TQM was associated with broadly based MCS including timely and externally-focused information. He also proposed the association of advanced JIT technologies with broadly based MCS. Recently, Mia and Winata (2008) found that JIT was positively associated with the use of broad-scope information. Therefore, similar to the studies discussed above, as well as other studies such as Sim and Killough (1998), Mia (2000), Fullerton and Wempe (2009) and Ismail and Isa (2011), this study also postulates the influence of MAS information. Specifically, this study postulates the mediating effects of MAS information in the relationship between lean practices and performance. Consistent with the discussion above, the following research framework is proposed. Figure 1 shows the research framework of this study, which proposes that the implementation of lean manufacturing influences managers' use of the MAS information to improve performance. As asserted by Haldma and Laats (2002), this research framework is based on the contingency theory which postulates the existing link between context, the use of the MAS and, consequently, improved performance.

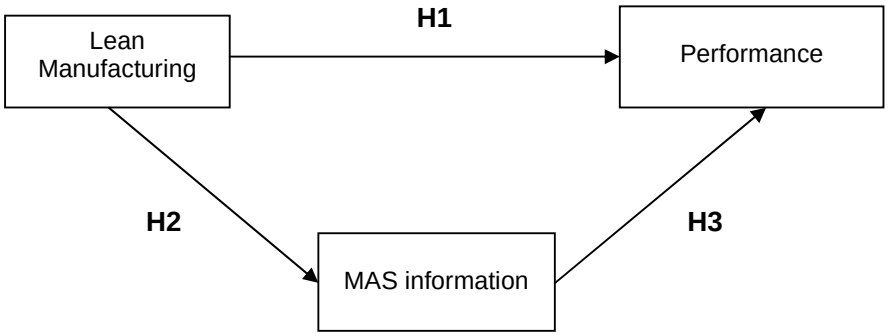


Figure 1: Theoretical Framework of the Research

Based on the above framework, the following hypotheses are proposed:

H1: There is a positive relationship between lean manufacturing and performance.

H2: There is a positive relationship between lean manufacturing and managerial use of MAS information.

H3: There is a positive relationship between managerial use of MAS information and performance.

3. METHOD

3.1 Sample and Data Collection

Questionnaire survey technique was used for data collection for this study. The questionnaire was distributed through e-mail or postal mail to respondents. The questionnaire was sent to the manager in charge of the business unit.

The population of interest was all manufacturing firms operating in Malaysia. The sample of firms was selected from manufacturing firms listed in the Federation of Malaysian Manufacturers (FMM) Directory year 2009. There were over 2000 firms registered as members of FMM, which came from various sectors and located all over Malaysia. The sample consisted of 1000 manufacturing firms randomly selected from the FMM Directory.

The survey data was analysed using Partial Least Square (PLS), which is a type of Structural Equation Modelling (SEM). One of the advantages of SEM is that it can examine multiple relationships simultaneously in one model at the same time (Hair et al., 1998). This study used SmartPLS software as a method for data analysis.

3.2 Measurements of the Variables

3.2.1. Lean Manufacturing

In this study, lean manufacturing was defined to include two practices: JIT and TQM. The measurement for lean was adopted from Snell and Dean (1992). The same measurement was utilised in the study of Dean and Snell (1991), Snell and Dean (1994), Sim and Killough (1998) and Abdel-Kader and Luther (2008). Each individual respondent's score was determined by taking the mean of the respondent's scores for lean manufacturing.

3.2.2 MAS Information

MAS information refers to the extent of MAS information being used by manufacturing firms in Malaysia. This study utilised the perceived usefulness of MAS information introduced by Chenhall and Morris (1986), which consisted of four dimensions: scope, timeliness, integration and aggregation. All dimensions for MAS information were measured on a five-point Likert scale. The scale for scope, integration and aggregation ranged from "not used at all" to "extensively used," whereas the scale for timeliness ranged from "strongly disagree" to "strongly agree." A respondent's overall score for use of the MAS information was the overall average of the respondent's scores for the four dimensions of MAS information.

3.2.3 Business Unit Performance

This study used business unit performance similar to Mia and Clarke's (1999) study. The business unit performance was defined as the extent to which the unit is successful in achieving its planned targets based on nine dimensions of performance: productivity, costs, quality, delivery, service, sales volume, market share, profitability and overall performance. The managers were required to indicate their perceived business unit performance on a five-point likert scale where 1 represented "poor performance" and 5 represented "excellent performance."

4. RESULTS

4.1 Profile of Firms and Respondents

Table 1 indicates the sample firms representing various industries. More than a quarter (28.2%) of the sample firms were from the electrical and electronic sector, followed by transport and automotive parts and components (15.5%), and rubber and plastic products (10%). Most of the sample firms (80%) had been in operation for more than ten years and most of the firms were either locally-owned (45.5%) or foreign-owned (46.3%). Examination of firm size based on number of full-time employees, total gross assets and annual sales turnover revealed that the sample firms comprised small to large companies.

Regarding the profile of the respondents, the majority (86.4%) of the respondents were male while 13.6% were female. Most of them (38.2%) were between 40 to 49 years old, followed by 31.8% of respondents aged between 30 to 39 years; 18.2% aged 50 years and above, and 11.8% were between 20 to 29 years old. The majority of them (94.5%) were Malaysian, whereas 5.5% held other nationalities such as Japanese, British, Filipino, German or Belgian.

The majority (90.9%) of the respondents had work experience in their present job of at least three years, and only 7.3% had work experience of less than three years. This information indicated that they were experienced personnel. As such, the information provided by them can be assumed to be reliable.

Table 1: Profile of Sample Firms and Respondents

Demographic Information	Categories	Frequency	Percentage
Type of Industry	• Building materials/ cement/ concrete/ ceramics/tiles	3	2.7
	• Chemical and adhesive products	6	5.5
	• Electrical and electronic products	31	28.2
	• Food, beverage and tobacco	9	8.2
	• Furniture and wood-related products	1	0.9
	• Gas and petroleum products	3	2.7
	• Household products and appliances	2	1.8
	• Iron, steel and metal products	9	8.2
	• Machinery and equipment	3	2.7
	• Paper, printing, packaging and labelling	3	2.7
	• Pharmaceutical, medical equipment, cosmetics and toiletries	3	2.7
	• Rubber and plastic products	11	10.0
	• Textile, clothing, footwear and leather products	3	2.7
	• Transport and automotive parts/ components	17	15.5
	• Others	5	4.6
	• No information provided	1	0.9
Years in Operation	Less than 5 years	6	5.5
	5 to 10 years	15	13.6
	More than 10 years	88	80.0
	No information provided	1	0.9
Ownership Structure	Local (more than 50% local equity)	50	45.5
	Joint venture	8	7.3
	Foreign (more than 50% foreign equity):		
	- Anglo American	15	13.6
	- Asian	32	29.1
	- Others	4	3.6
	No information provided	1	0.9
Number of Full-Time Employees	Not exceeding 150	27	24.6
	151 to 250	15	13.6
	251 to 500	24	21.8
	Above 500	43	39.1
	No information provided	1	0.9
Total Gross Assets	Less than RM50 million	31	28.2
	RM50 to RM100 million	18	16.4
	RM101 to RM150 million	14	12.7
	Above RM150 million	45	40.9
	No information provided	2	1.8
Annual Sales Turnover	Not exceeding RM25 million	16	14.6
	RM26 to RM50 million	11	10.0
	RM51 to RM100 million	24	21.8
	Above RM100 million	56	50.9
	No information provided	3	2.7
Gender	Male	95	86.4
	Female	15	13.6
Age	20 to 29 years	13	11.8
	30 to 39 years	35	31.8
	40 to 49 years	42	38.2
	50 years and above	20	18.2
Nationality	Malaysian	104	94.5
	Others	6	5.5
Length of service	Less than 3 years	8	7.3
	3 years and above	100	90.9
	No information provided	2	1.8

4.2 Hypotheses Testing

The purpose of this analysis was to examine the relationship between the variables in the model (Figure 1) of the study. Prior to analysing the relationships, the adequacy of the measurement model was assessed by examining convergent validity, discriminant validity and reliability.

Table 2 tabulates the value for composite reliability (ρ_c), AVE, square root of AVE and latent variable correlations. All main constructs were found to be reliable and valid. The composite reliability exceeded the threshold of 0.70, which indicates that all constructs were reliable (Hair et al., 1998; Chin, 1998; Das et al., 2000; and Henseler et al., 2009). The AVE value above 0.50 for all constructs satisfied the second test of convergent validity (Fornell and Larcker, 1981). To fulfil the second test of discriminant validity, the value of AVE for each construct should be higher than its highest squared correlation with any other construct, or the square root of AVE should be higher than its correlations (Fornell and Larcker, 1981). All shaded numbers on the leading diagonals in Table 2 are the square roots of AVEs while the off-diagonal elements are the latent variable correlations. A comparison of the square root of AVEs with the latent variable correlations in the lower left of the off-diagonal elements found that no correlations exceed the square root of AVEs between any pair of the constructs, thereby indicating that discriminant validity was achieved.

Table 2: Composite Reliability, AVE, Square Root of AVE and Correlations

Construct	Composite Reliability	AVE	LEAN	MAS	Perf
LEAN	0.890681	0.802914	0.896055		
MAS	0.887612	0.664921	0.649522	0.815427	
Perf	0.896729	0.812797	0.560594	0.697141	0.901553

Note: LEAN = Lean manufacturing

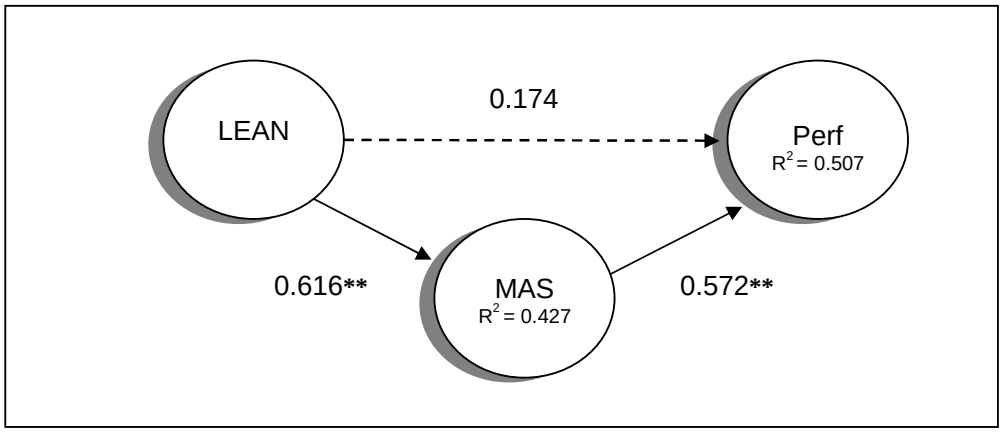
MAS = Management accounting systems

Perf = Performance

AVE = Average variance extracted

Figure 2 summarises the results of the PLS analysis for the model, including the path coefficients (β estimates), path significance (p-values), and the variance explained (R^2 values) for dependent variables.

Figure 2: The Path Model



** Significant at p<0.01

Note: LEAN = Lean manufacturing
MAS = Management accounting systems
Perf = Performance

Figure 2 shows that the relationship between lean manufacturing and performance was positive but not significant (β = 0.174, p > 0.05). As such, hypothesis 1 is not supported. Both hypothesised paths from lean manufacturing to MAS, as well as from MAS to performance were positive and significant at the 1% significance level with β equal to 0.616 and 0.572, respectively, thus providing support for hypotheses 2 and 3. Lean manufacturing explained 42.7 per cent of the variance in MAS whereas 50.7 per cent of the variance in performance was explained by MAS and LEAN.

To test the mediating effects of MAS in the relationship between lean manufacturing and performance, similar procedures to those recommended by Baron and Kenney (1986) and utilised by Bass et al. (2003) were used. Evidence for *full mediation* is present when the following conditions are met: A path from the independent variable (i.e., lean manufacturing) to the dependent variable (i.e., performance) is not significant but paths from the independent variable to the mediator (i.e., MAS) and from the mediator to the dependent variable are significant (Wold, 1985). *Partial mediation* is present when all paths are significant. In this study, the results indicated that MAS fully mediated the relationship of lean manufacturing with performance.

Following the procedure utilised by Bass et al. (2003), who used PLS, the indirect effect can be determined by multiplying the path coefficients (β estimates) from LEAN to MAS, as well as from MAS to performance. Including MAS as a mediator, the indirect effect of LEAN on performance was 0.352 (0.616 x 0.572). This shows that the indirect effect of lean manufacturing on performance (0.352) was greater than the direct effect (0.174). Furthermore, according to Billings and Wroten (1978), in order for the data to support the theory, any path in excess of 0.05 is deemed to be meaningful. Lau et al. (2008) also recognised the use of indirect effects that are greater than 0.05. Since the indirect effect of lean manufacturing on performance is greater than 0.05, it is deemed to be meaningful. Overall, these results support the expectation that the effects of lean manufacturing on performance are mostly indirect via MAS, rather than direct.

5. DISCUSSION, LIMITATIONS AND CONCLUSION

The rapidly changing business environment has led to intense and dynamic market competition. To survive and prosper in such an environment, manufacturing firms have to cope with an increase in product range, a decrease in product life cycles (Mia and Clarke, 1999) and changes in manufacturing technology, as well as drastic changes in their cost structure, control and process, by adopting lean manufacturing practices. The findings of this study suggest that the MAS information influences the relationship between lean manufacturing and performance, consistent with the findings by Sim and Killough (1998), Mia (2000) and Fullerton and Wempe (2009). Sim and Killough (1998) showed that the use of inappropriate management accounting systems by firms is an important factor that contributes to the unsuccessful implementation of TQM or JIT. Mia (2000) found that JIT firms which had a higher amount of MAS information performed better compared to those firms that had a lower amount of MAS information. The findings of Fullerton and Wempe (2009) suggest that the use of MAS information in terms of non-financial measures is a key factor for financial success from the implementation of lean manufacturing. Therefore, the information provided by the MAS assists managers to adopt and implement manufacturing practices more efficiently and effectively. The results show that the use of MAS information by managers could help firms to achieve the ultimate outcome of every organisation, i.e., improved performance. This is consistent with the contingency theory, which states that the nature of control systems such as MAS is contingent upon the context in which the organisation operates.

In this study, it was found that firms adopting lean manufacturing need to use MAS information in order to improve performance. In other words, the performance of these firms was contingent upon the use of MAS information by managers. Consequently, the findings provided evidence that supports the argument that today's firms need broader, more timely, aggregated and integrated information to sustain their performance.

There are several limitations to the study that need to be highlighted. First, the sample was drawn only from manufacturing firms operating in Malaysia. The implementation of lean manufacturing and the use of MAS information may be different in other industries such as service industries or public sector organisations, as well as other countries. Therefore, the findings from this study cannot be generalised across other industries and countries. Future studies could extend this research for other industries and countries.

Second, since this study used the business unit as the unit of analysis, only one respondent was selected from each firm. The responses given by him/her might be biased and not represent the actual scenario. Furthermore, the respondents held different managerial positions such as Production Manager, Accountant, Financial Controller, Engineers, etc. Therefore, their nature of work and responsibilities were different. Consequently, their perceptions of lean manufacturing, MAS and performance might also be different.

Third, the small sample size and low response rate of 11% received in the survey may have affected the results of the study. The findings may be different if a larger sample is obtained. Even though it is common for the survey to get low response rate, future study should try to obtain a higher response rate for more meaningful results.

Finally, the scales employed in this study were based on individuals' perceptions. Therefore, they may not reflect objective reality. Future studies could replicate the current study by utilising different methodologies such as case studies. In addition, the use of cross-sectional data in the current study might be biased and not represent the actual situations. Thus, adopting a longitudinal approach might produce more meaningful results.

Apart from these limitations, the results of the study have implications for theory and practice. For example, this study provides evidence of the importance of MAS information for the managers. The results from this study suggest that the relationship between the types of practices adopted by the firms and performance could be improved through the use of MAS information. The results provide empirical evidence that support the view that MAS should be adopted in order to assist managers to achieve some desired company outcomes or goals. This also might explain why previous studies (e.g.: Balakrishnan et al., 1996; Dean and Snell, 1996; and Fullerton et al., 2003) failed to find a significant positive relationship between these practices and performance.

Overall, this study also shows that the use of relevant, appropriate and sophisticated MAS information is still relevant in managing firms in the current economic situation. The information provided by the traditional MAS has been changed to cope with the changes in the environment. In adjusting to the increasing competition and advanced technological environment, manufacturing firms in Malaysia use broader-scope information that focuses more on external, non-financial and future-oriented information; emphasise timely reporting; and are concerned with integrated and aggregated information in making managerial decisions. The review of recent literature on MAS shows that the research on the role of MAS remains significant and continues to attract scholars' attention (e.g.: Ahrens and Chapman, 2007; Malmi and Brown, 2008; Mia and Winata, 2008; Patiar and Mia, 2008; Faÿ et al., 2010; Williams and Seaman, 2010; Weißenberger and Angelkort, 2011; Hoque, 2011) in various ways.

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CONSOLATION PRIZE

MATERIAL FLOW COST ACCOUNTING (MFCA) IN MALAYSIA: A SME'S EXPERIENCE DISCOVERING ITS HIDDEN TREASURES IN WASTE

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MATERIAL FLOW COST ACCOUNTING (MFCA) IN MALAYSIA: A SME'S EXPERIENCE DISCOVERING ITS HIDDEN TREASURE IN WASTE

ABSTRACT

SMEs can have a profound impact on the environment, contributing 64% of the industrial pollution in Europe (European Commission, 2010). Given that SMEs in Malaysia, comprise 97.3% of total business establishments (DOS, 2011), the impact of Malaysian SMEs on the environment may also be significant. The introduction of a new environmental management accounting (EMA) tool, material flow cost accounting (MFCA) (ISO 14051), has the potential to address this problem. MFCA allows firms to trace, quantify and value material losses within their processes. Further improvement activities can then be undertaken to reduce these losses leading to cost savings as well as reduction in wastage. This paper examines how MFCA was implemented in an automotive SME in Malaysia. The company achieved significant cost savings and waste reduction concurrently. Influencing factors that have facilitated its success are also discussed. Additionally, potential barriers are also highlighted to enable other SMEs to learn from the mistakes of the SME of our case study.

1. INTRODUCTION

A recent report published by the European Commission in 2010 indicates that approximately 64% of the industrial pollution in Europe is contributed by their SMEs (Constantinos et al., 2010). In Malaysia, the Environmental Quality Report (EQR) for 2010 shows that there has been an overall increase in air pollutant emissions, water pollution and scheduled waste over the years (DOE, 2010). In fact from 2009 to 2010, there was a 10% increase of the scheduled waste and that the automotive industry is among the top five industries generating these wastes. Additionally, given that SMEs make up 97.3% of the total business establishments in Malaysia (DOS, 2012), the impact of their activities on the environment may well be significant. Accordingly, how SMEs address environmental matters is indeed an interesting issue to pursue.

In Japan, material flow cost accounting (MFCA), an environmental management accounting (EMA) tool that has recently become an ISO standard, has helped many Japanese companies to increase profits and at the same time be environmentally responsible. This is possible by primarily focusing on the reduction of material waste.

MFCA's main objective is to support organisations in improving both their environmental and economic performances, concurrently. The 'traditionalist' views the relationship between environmental performance and economic performance as uniformly negative (Wagner et. al., 2002). Accordingly, there is always a tradeoff between additional costs and profitability (Friedman, 1962). The 'revisionist' on the other hand, perceives environmental protection activities as a source of competitive advantage and economic opportunity. This is because environmental protection activities would lead to cost savings and increased sales due to more efficient processes, lower costs of compliance and new market opportunities (Porter and van der Linde, 1995). MFCA takes the stance of a revisionist, because its ability to trace material input and output throughout the process enables the firm to identify and visualise its material losses.

MFCA has its origins in Germany during the 1990s and expanded to Japan in 2000 (Kokubu, Campos, Furukawa and Tachikawa, 2009; Nakajima, 2006, 2009; Anandaraj, 2011; MPC, 2011). In 2011, MFCA became an ISO standard (ISO 14051 - "Environmental Management-Material Flow Cost Accounting-General Framework"). Its use as a tool to address material waste is fast expanding as evidenced by published articles in countries such as the Czech Republic (Kovanicova, 2011; Hyrslova, Vagner and Palasek, 2011) and Vietnam (METI, 2011).

In Malaysia, MFCA was introduced in 2010 in five SMEs through a project organised by the Malaysia Productivity Corporation (MPC) in collaboration with the Asian Productivity Organization (APO) and the Japan Productivity Centre for Socio-Economic Development (JPC-SED). This project is also under the bigger umbrella of the Green Productivity (GP) concept conceived in the 1992 Earth Summit and then launched by APO in 1994 (Anandaraj, 2011).

The objective of this paper is to explain how MFCA can help address the potential environmental problem from SMEs and share the MFCA implementation experience from an SME in the automotive industry. The remainder of the paper is structured as follows: Section 2 details the main concepts and elements of MFCA. This is followed by a discussion on the experiences encountered by the SME case company (Alpha) in their implementation of MFCA in section 3. Our study is based on a qualitative approach. Accordingly, very detailed discussion is provided at this stage to enable other SMEs to emulate or avoid when implementing MFCA. Interviews were conducted with Alpha's MFCA team members, relevant documents were reviewed and meetings were attended for the purpose of this study. Section 4 focuses on the results while section 5 concludes.

2. MATERIAL FLOW COST ACCOUNTING (MFCA)

MFCA is an environmental management accounting (EMA) tool that quantifies the material flows into the process and the final product and byproduct (material waste) outputs both in physical and monetary terms (Kokubu et. al, 2009; MPC, 2011). Fundamental in MFCA is determining the boundary. The boundary of the MFCA activity can be a single process, multiple processes, a single product, multiple products, the entire plant, the whole company and even the supply chain (ISO 14051, 2011).

MFCA actually helps the firm to identify any productivity or material inefficiency problems, and then work on the possible improvement or Kaizen solutions. Once resolved, this will lead to waste reduction, productivity improvement and cost savings (Kokubu et al., 2009; MPC, 2011). The basic concept of MFCA is that both finished goods and material losses (also called positive and negative products) are given their equivalent costs. The unique and pertinent aspect of MFCA here is on the costs attached to material losses. One important element in MFCA is the quantity centre (QNC). Once the boundary is determined, we will then select a part or parts of a process, the inputs and outputs of which we can quantify in both physical and monetary terms. This is called quantity centre. For example, to produce a plastic component, the mixing stage can be considered as one quantity centre. Another important element is the concept of material balance (also referred to as eco-balance or mass balance) (ISO 14051, 2011; Jasch, 2009). Material balance states that total output mass must always equal the total input mass. For example, a material input of 100 kilograms that goes into the quantity centre for processing must have the same total mass in its output of finished goods (80 kilograms) and waste (20 kilograms).

While material balance focuses on the physical aspect, another element, material flow cost calculation, combines both physical and monetary aspects. Figure 1 presents the illustration. The material inputs of 100 kilogram costing RM100 goes into the quantity centre along with energy costs RM20, system costs RM50 and waste management costs RM30, with an overall total of RM200. These costs are then traced to the positive and negative products. As a result, the total cost for the finished goods is RM136 (i.e. 68% of total costs), whereas for material loss, it is RM64 (i.e. 32%). For the top management, this 32% material loss is critical because this is where the hidden profits are. This is certainly an eye-opener and the firm will now need to identify the improvement initiative to reduce these losses and materialise the hidden profits.

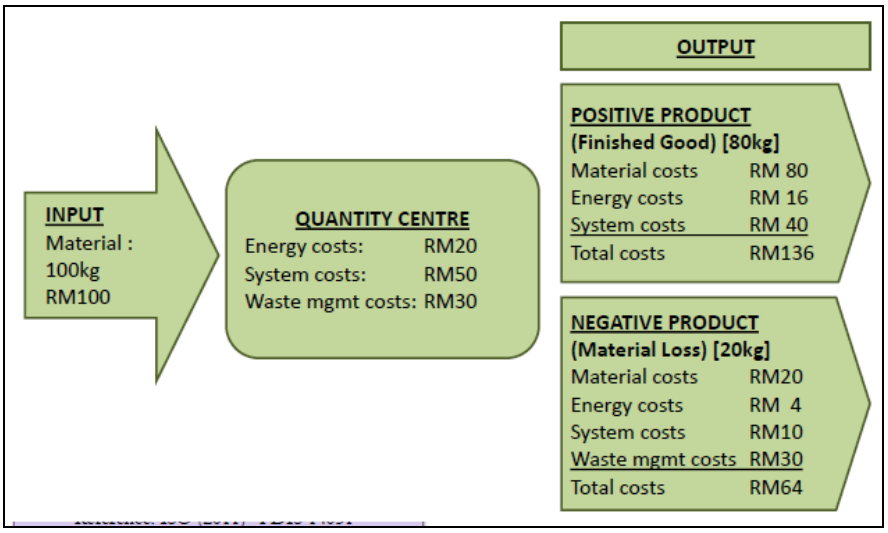

Figure 1: Material flow cost calculation illustration (Adapted from ISO 14051, 2011)

An illustration of how conventional cost accounting works is shown in Figure 2. Using the same earlier figures of material input of RM100 and processing costs of RM100, all of these costs are assigned to the product. As a result, the total cost of the product is RM200 and no costs are attached to waste; only the mass is recorded.

The main difference with MFCA here is that material losses under conventional cost accounting are not given their equivalent costs. Without this information, it will be difficult to convince management of the benefits of any improvement initiative because they will not be able to visualise where and how much the losses are, to justify any investment in improvement programmes. For MFCA all losses are quantified and given monetary value (i.e. costs). It is visualised through a combination of the material flow model as per Figure 3 and the material flow cost calculation as in Figure 1. The material flow model will present the overall material flow in and out of each quantity centre within the boundary chosen for the MFCA analysis, while the material flow cost calculation will reveal the costs for material losses in each quantity centre (ISO 14051, 2011).

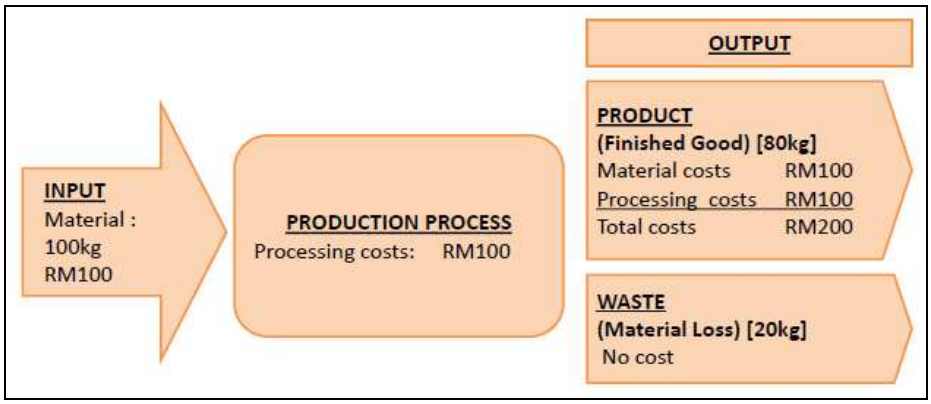

Figure 2: Conventional cost accounting illustration (Adapted from ISO 14051, 2011)

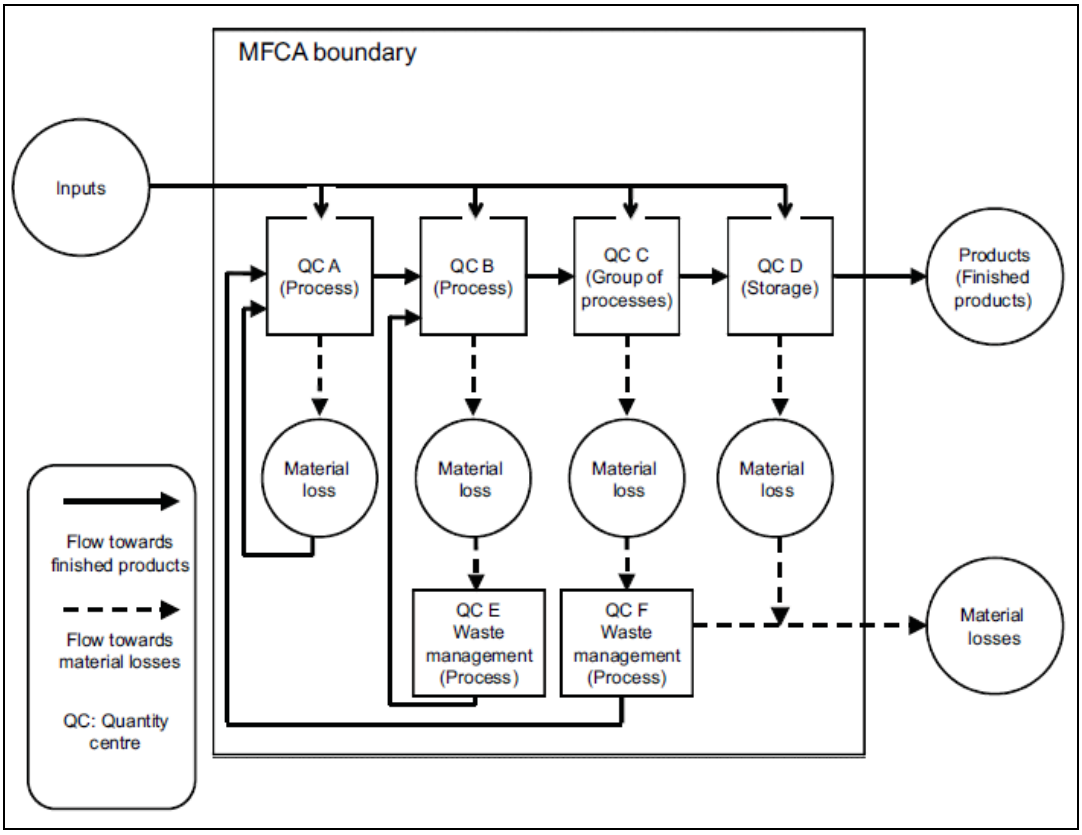

Figure 3: Material flow model illustration (Extracted from ISO 14051, 2011)

The following discussion on the case study will help clarify the issues just elaborated.

3. THE CASE

3.1 Discovering the Map

The case company, Alpha, is an SME which was established on 12 March 1988 with an authorised and paid-up capital of RM5 million. It has 270 employees and the turnover for its financial year ending June 2010 was RM74 million. Its main business is manufacturing automotive metal stamping parts. Alpha serves two major customers in automotive assembly, Epsilon and Gamma.

Alpha's organisational structure is made up of three groups: manufacturing, marketing, and procurement and vendor development (PVD); and finance and administration. Within the manufacturing group, there are various divisions such as operations (normally referred to as production), quality, engineering and various other departments. The PVD group consists of the vendor development division, purchasing department, marketing section and cost management section. Meanwhile, the finance and administration group comprises human resources, accounts and information technology (IT). The MFCA team members included those from production, engineering, purchasing and costing departments. Alpha had an annual scrap volume of 1.8 tonnes equivalent to RM7.2 million. Alpha also has had significant experience with various management tools or systems implemented in the organisation such as ISO 14000 on Environmental Management Systems (EMS), the technical standard, TS 16949 for the automotive industry, lean production system (LPS) and total quality management (TQM).

In addition, Alpha also implemented Budomari, a tool used primarily to reduce waste. Budomari was introduced by Gamma, whose engineers will join the team in Alpha to discuss improvements to reduce scrap. Unfortunately for Alpha, Gamma insists that it will take up all the cost savings generated from Budomari initiatives. This is financially taxing on Alpha because most of the improvement tasks are performed by Alpha, while Gamma is only involved at the earlier stages. This difficult-to-resist demand creates the need for Alpha to seek alternative ways to keep their cost savings to themselves.

Epsilon, Alpha's other major customer also has strong bargaining power, demanding that Alpha reduces costs on its own by imposing an annual sales cut on Alpha. According to the MFCA team leader,

> The issue with Epsilon is that even if they have the idea to reduce cost, they will leave it to the vendor to perform it. They will just reduce their purchases from the vendor by 3% the following year […] "Whatever way you do it, I will cut your sales by 3%" *(mimicking Epsilon's representative)* (Head of Operations Division)

The strong bargaining power of Gamma and Epsilon pressured Alpha to accept their demands, creating a financial burden for Alpha. Hence there was an urgent need for Alpha to reduce their costs by whatever means possible. When MPC offered to help Alpha embark on the MFCA project, Alpha saw the potential of MFCA in helping to address the current issue with Epsilon and Gamma. More importantly, given Alpha's daily scrap generation of 30% of the material input, a tool such as MFCA would assist the firm's efforts to address material waste. What they needed to do at the initial stage was to map the material flow. Next was to examine the map and try to find the spot marked 'X'. This is where the hidden treasure lies.

3.2 Finding the Spot Marked 'X'

MFCA is analogous to an explorer finding the 'X' spot. It helps the company to visualise where the wastages and hidden profits are. Alpha began its MFCA implementation with a management meeting on 23 March 2011. The meeting was necessary to introduce MFCA's benefits, discuss MFCA's future direction in the company and obtain the approval from top management. This was the first important step of the MFCA implementation process because top management support allows easier access to resources, manpower and budget allocation (Maliah, 2012). Without this, the project will likely face many obstacles. Then they continued with the team member set-up, prepared their master schedule and the material flow model analysis. This was then followed with the setting up of the work flow and the standard operating procedures (SOP) of MFCA. Subsequently, an MFCA Kaizen activity was undertaken. Finally, a report was prepared and the results presented to top management.

The steps on management approval, team set-up and material flow model analysis are clearly stated in ISO 14051. However, steps such as the master schedule and SOP are for documentation purposes so that knowledge transfer runs smoothly in case of staff movement.

Meanwhile the conduct of Kaizen is necessary if the firm wants to actually realise its hidden profits. In the explorer analogy, this is similar to that of excavating the treasure from its hiding place. This is because it is the Kaizen activity that will reduce the losses and realise the hidden profits. Kaizen activities can include, for example, a change in the process activity flow, a change in the material input design or any other activity deemed appropriate as long as the quality of the finished goods remains intact.

As for results presentation it allows the team members to communicate to management, other organisation members or even external parties, the outcome of the project and the lessons learned.

Alpha chose the small press stamping process as its first MFCA project. The general material flow model is depicted in Figure 4. Material flows for the specific products that go through small press stamping may differ slightly. In analyzing the material flow model, MFCA was able to draw the team's attention to several types of material losses such as metal scrap, cotton gloves, gas emissions and wire strips. All these are wastages that have potential for cost reduction. However, they decided to focus on metal scrap because it had the most significant volume and value.

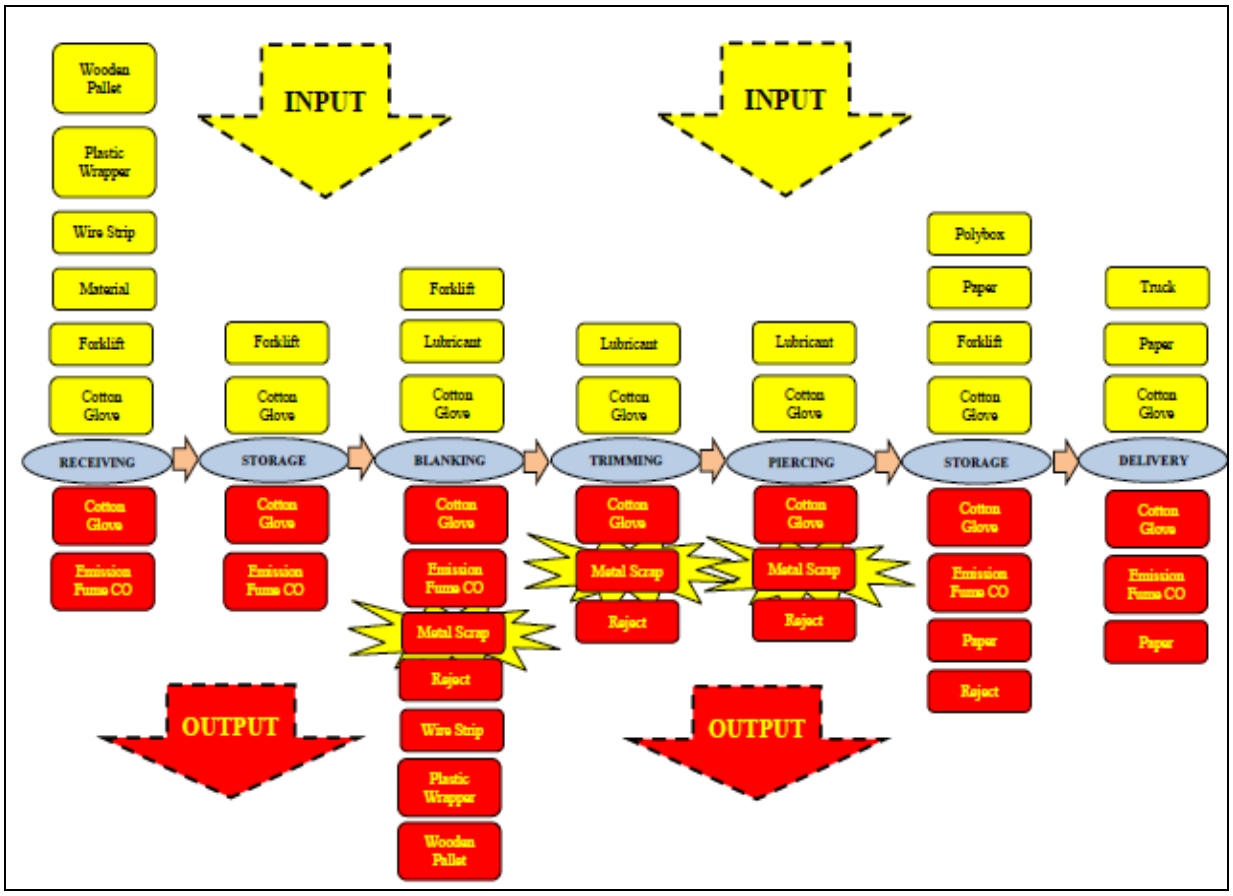

Figure 4: Material flow of small press stamping process

Alpha has many products processed via small press stamping. In this paper, only one product, product A, will be shown for illustration. Figure 5 shows the material flow analysis for product A, which highlights the volume of material input and scrap produced from the processes. From the analysis, material input of 300 grams goes through processes 1, 2 and 3. These are the drawing (or blanking), piercing and trimming processes, respectively. The final product (positive) output is 165 grams. Thus, the total scrap arising from the whole process is 135 grams (45% of input material). Given the material input price per kilogram of RM2.50 and for a production batch of 10,000 units, total material losses amounted to RM3,375. Imagine: if each product under small press stamping had a similar scrap percentage and cost, and if there were 100 products, the overall material losses for the company would be a whopping RM340,000!

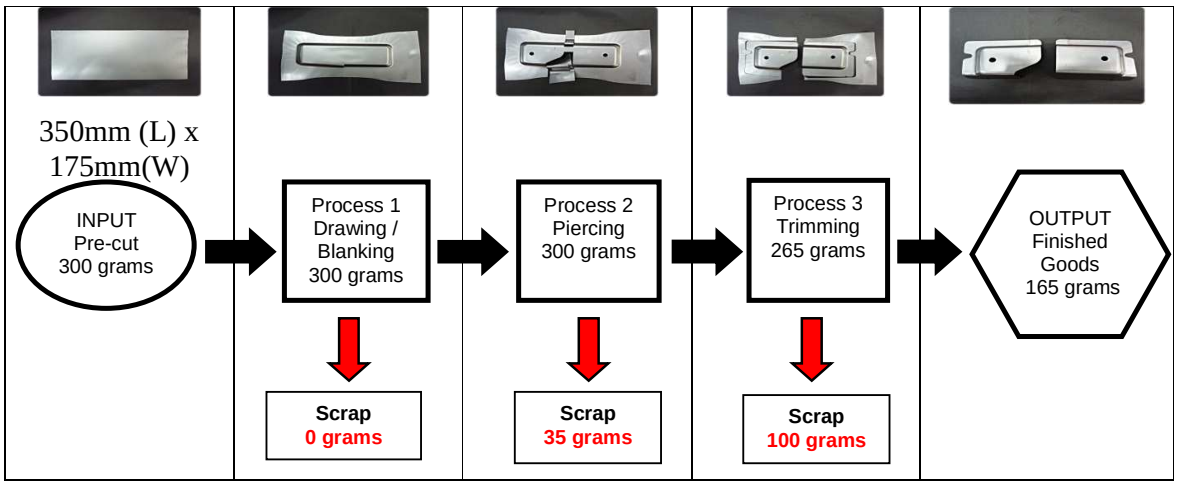

Figure 5: Product A material flow before MFCA Kaizen activity

3.3 Excavating for the Hidden Treasure

Figure 5 demonstrates how MFCA enabled Alpha to visualise where the material losses lay. In order to have a greater impact, such material losses had to be converted to monetary values. It is only when environmental issues are measured in dollars and cents will it capture people's attention (Maliah and Nik Nazli, 2006, 2007). The objective was to highlight to management that there are significant potential cost savings from material losses. Given the large ratio of by-product output (45%), the MFCA team will then propose a possible Kaizen or improvement activity. The Kaizen activity may sometimes involve significant capital investment and at other times may not require any monetary commitment at all. However, employee skills, knowledge and time are a must. The objective of the Kaizen activity for Alpha was to manufacture Product A with a reduced pre-cut material size. The original size was 350mm (L) x 175mm (W). The MFCA and Kaizen team involved expertise from production and planning, engineering, purchasing, costing and quality control. The shop floor supervisors and plant workers were also involved. Their discussions revolved around possible alternatives to use a reduced pre-cut material size without compromising the product quality. After detailed discussion, they decided to adjust the panel guide on the die. For trial purposes they adjusted it manually and used two pre-cut input sizes, 340mm (L) x 165mm (W) and 310mm (L) x 155mm (W). After the trial runs and confirmation with quality control, it was found that the pre-cut input size of 310mm (L) x 155mm (W) resulted in better material usage efficiency.

The material flow analysis for Product A was re-performed as shown in Figure 6. The material input weight was now reduced to 267 grams, thus giving a scrap of 102 grams. This reduced the scrap percentage to 38%. At a given price of RM2.50 per kilogram of material and a production batch of 10,000 units, the loss was reduced to RM2,550. Consequently, this resulted in cost savings of RM825 per batch.

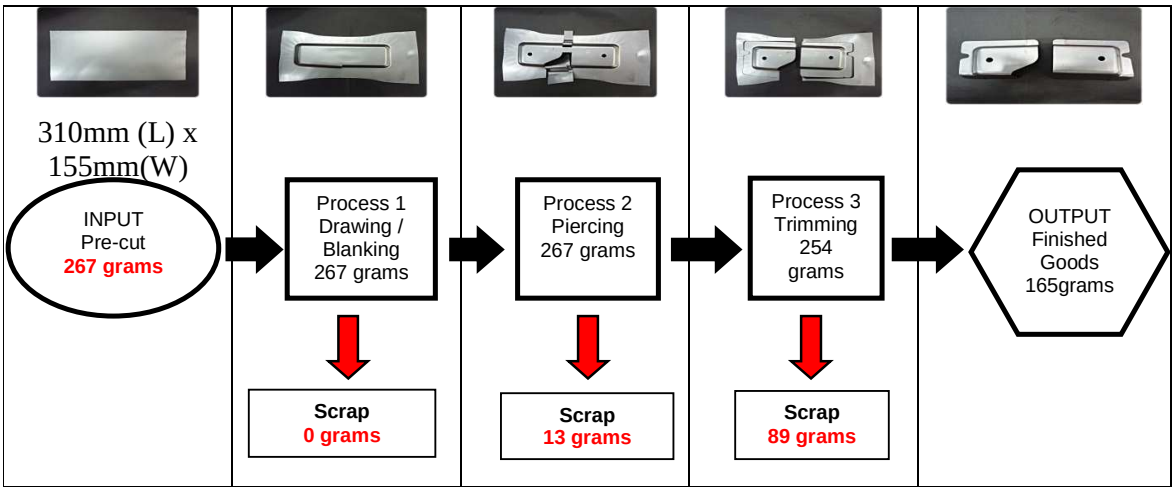

Figure 6: Product A material flow after MFCA Kaizen activity

Having analysed the trial results, the team proceeded with reporting to management. At this stage, further approval to modify the die's panel guide, requests for new material size orders from suppliers and the running of actual production using the reduced pre-cut material size were obtained. Subsequently, the team analysed the material waste of other products which used small press stamping process and discussed the possible Kaizen activity. The cycle then continued.

4. FINDINGS AND DISCUSSION

4.1 The Hidden Treasure

MFCA was able to help Alpha to discover its hidden treasure (cost savings) from its waste. Indeed, the cost savings boosted Alpha's financial performance. A summary of the costing before and after MFCA and Kaizen is provided in Figure 7 (the detailed calculation is attached in Appendix A). The summary shows that material losses in mass and costs were reduced by 24%.

This resulted in cost savings of RM825 for a production batch of 10,000 units. Figure 8, on the other hand shows the reduction in material loss percentage of 7% (which also means the product composition is higher). This indicates that production operations are now adding value to the product.

For a 10,000unit production batch:	**Before (350mm x 175mm)**	**After (310mm x 155mm)**	**Difference**
Product (kg)	1,650kg	1,650kg	- Nil -
Product (RM)	RM4,125	RM4,125	- Nil -
Material Losses (kg)	1,350kg	1,020kg	↓ 330kg (↓ 24%)
Material Losses (RM)	RM3,375	RM2,550	↓ RM825 (↓ 24%)

Figure 7: Summary of results for Product A

	Product (%)	Material Losses (%)	Total (%)
Before (350mm x 175mm)	55%	45%	100%
After (310mm x 155mm)	62%	38%	100%
Difference	↑ 7%	↓ 7%	

Figure 8: Reduction in material loss percentage for Product A

Furthermore, Alpha was also able to contribute positively to the natural environment by reducing its waste. This is where implementing MFCA enables organisations to achieve both financial and environmental performance. In recent times, with increasing importance being placed on environmental protection and social responsibility (IFAC, 2006), companies need to be more pro-active on environmental issues (Maliah and Norsyahida, 2010). Potential benefits from implementing environmental initiatives to the company may include achieving competitive advantage and leadership, enhancing reputation, achieving trust and respect, and improvement of internal processes (GRI, 2008). Therefore, tools such as MFCA may seem very attractive to the business community.

4.2 Other Treasures to Cherish

Apart from the cost savings and waste reduction, the MFCA team members pointed out that other treasures worth cherishing include improvement in labour skills and positive behavioural aspects such as gaining new knowledge, new experience and increase in self-esteem. As the Executive of Stamping Production Section commented,

> "if there were any other positive outcomes, it was the enhancement of labour skills. This was because during the improvement activity, several adjustments were needed to avoid defects and cracks. This was when they learned how to adjust the guide and the stopper…it was positive in that aspect."

Another positive response came from the Assistant Manager of the Purchasing Department:

> "We acquired knowledge and it feels great! Sometimes we may think we cannot perform a certain task, but when we think about it and brainstorm within the team, it will work out."

Finally, the Executive in the Engineering Division added,

> "[…] we become more experienced. We also become more efficient and quick in learning about dies. I feel great also because I have done something, others have approved it and it actually gets to enter production. Even though I am new here, I can also do it, and it feels great!"

The above positive outcomes of MFCA have not been included in the list of benefits discussed in its ISO 14051 standard, the guidebook or training materials. However, it is important to present it here to further highlight the advantages of adopting MFCA. This, it is hoped, may give an additional push for the business community to embark on MFCA.

4.3 MFCA Practicalities

There were several factors that facilitated the smooth implementation of MFCA and the improvement activities. These included the relative advantage of MFCA itself, its compatibility with Alpha's existing work environment, team composition and communication channels used. MFCA was considered practical and simple. One possible reason was the boundary determination. The company could determine the extent of its MFCA-performing capabilities. At the initial stage, a company could start adopting MFCA for small, simple processes.

Gradually, larger and more complex processes may be attempted. Furthermore, during Alpha's implementation of MFCA, there were Japanese technical experts assisting them. However, for future implementation of MFCA, firms can seek guidance from the ISO 14051 standard, the MPC and also the Malaysian external consultants who were also involved in the MPC-MFCA project. Given Alpha's involvement with ISO 14000 (EMS), TQM, LPS and Budomari, implementing MFCA and Kaizen may be less challenging.

The appropriate team composition also played an important role in Alpha's implementation of MFCA. Firstly, a dedicated team leader enables it to become a more routine activity. As highlighted by the team leader during the MPC- MFCA project,

> "Before this, I was a team leader for MFCA but I was also in charge of Safety. So the progress had been rather slow. It was two months for one part. Now, there is a dedicated person […] it is two weeks for one part." (Head of Operations Division).

Secondly, the team members comprised multiple relevant units. This is important because there are many aspects of the material flow analysis and Kaizen activity which encroach on different units at the same time. For example, the production unit contributes to the mechanical and operational aspects; the engineering division to machine design and process design aspects; the costing unit team member contributes in terms of the costs involved for each material input, while the purchasing unit contributes towards supplier relations (either relating to the new material size purchase orders, or the die modification).

Effective communication channels were also important for the implementation of MFCA in Alpha. Their effective communication included constant meetings for improvement efforts and ensuring all team members agreed on the details of each MFCA Kaizen activity.

A process of change within an organisation has its own barriers. For Alpha, this primarily concerned the performance management system (PMS) which involves the issues of rewards, key performance indicators (KPI), performance evaluation and bonus distribution. Currently their PMS is only a potential barrier. Their current PMS does not include measures for MFCA activities either in terms of rewards, KPI targets or bonus distribution. PMS is an important issue to address especially if management wants to maintain the employees' motivation for excellent performance. Three out of the five team members interviewed highlighted that this issue was very important to them. Thus, firms wanting to implement MFCA should pay particular

attention to such issues as these may become potential barriers to MFCA implementation. The Executive in the Stamping Section had this to say,

> "…if there are cost reductions involving material usage, there must be some rewards…for instance pay rise or bonus. However, this is not happening now. In my opinion, there must be a reward system because the cost reduction is high…yet there are no "returns" for the employees. The task is not easy. It involves thinking. Just saying thank you is not enough. It does not work because sometimes people may not be motivated to continue doing it."

Another critical barrier concerned vendor constraints. Before the new production run, Alpha needed to get their vendors to agree to supply the new pre-cut material size. An agreement between Alpha and the vendors had to be achieved because this affected their mother coil supply, distribution and prior order stocks. Sometimes the delay in procuring the new pre-cut material can be as long as three months, whereas the MFCA activity analysis and trial runs were completed within two weeks. This barrier was taken into account during Alpha's new production planning because the vendors themselves also had their own constraints and these were beyond Alpha's control.

> "When we change to a new material size, it will affect their mother coil. This is the reason they cannot give us the new material immediately. They will perform their own analysis, and if they were to bring in a new coil, it will actually take them about two to three months." (Assistant Manager, Purchasing Department).

4.4 Role of Accountants

In Alpha, the accounting function seems to be a supportive role. The closest they involved accounting was to have the costing executive provide costing data for operational and material flow costing analysis. This task is minimal compared to the overall functions of accounting. Moreover, the executive did not have an academic qualification in accounting. The role of accountants in this situation requires further research because professional literature indicates the importance of accountants in addressing environmental sustainability issues.

According to IFAC (2011), sustainability and social responsibility have been identified as emergent key issues for the accountancy profession. With the increasing interest in environmental protection (IFAC, 2006), the environment is closer to becoming its own business function (Maliah and Norsyahida, 2010). Accountants are in a unique position that allows them to advance the environmental agenda of the company (Maliah and Norsyahida, 2010). This is because accountants are particularly good at integrating varied business functions. They understand the cost accounting systems and have access to various divisional managers (Maliah and Norsyahida, 2010). Furthermore, with their skills in information collection, analysis and reporting, accountants have the capabilities necessary to provide a more complete information package of environmental sustainability issues for business decision-making (IFAC, 2006). However, they need to ensure they are fully equipped with the knowledge and training specific to environmental issues (IFAC, 2006; Spence, Agyemang and Rinaldi, 2012). Subsequently the accountants can then help incorporate environmental sustainability issues into the organisation's strategic planning and implementation (IFAC, 2006).

4.5 Future of MFCA in Malaysia

As for the future potential of MFCA in Malaysia, one of the MFCA team members of Alpha strongly encouraged other companies to embark on MFCA, saying

> "I think MFCA needs to be implemented by other companies too, especially those without any particular system. Companies without ISO, TS may actually produce small parts, but the scrap is huge. They may not have many managers and they may lack exposure. Alpha for example receives many site visits from external parties such as MPC, so it may have better exposure. However, they *(other companies)* may not know how to begin *(to reduce scrap).* Therefore if they embark on MFCA, they will see that profits are enhanced." (Executive, Costing Section)

Thus, the existing and potential barriers of MFCA just discussed may help other companies to improve the MFCA implementation process. As for environmental awareness, it is still not apparent among the team members, but suffice it to say that with the concurrent outcomes of cost savings and waste reduction from MFCA, its implementation will still help improve environmental sustainability.

5. CONCLUSION

Collectively, SMEs in Malaysia can cause a significant impact on environmental sustainability due to their major composition in the business community. Hence, encouraging SMEs to embark on environmental initiatives is crucial. However, the traditional view that investment in environmental initiatives will reduce financial performance may hinder these SMEs from doing so, especially since SMEs usually have limited financial resources.

The latest managerial innovation such as MFCA may help to solve this problem. As experienced by Alpha, an automotive company, the MFCA has helped them to generate significant cost savings and waste reduction. Alpha was primarily motivated to implement MFCA by its need to reduce cost. Ideally, environmental protection would have been a better motivator for environmental sustainability advocates but in the case of MFCA implementation, both outcomes are possible. Intangible benefits such as labour skills improvement and positive behavioural aspects were also apparent.

The MFCA had been smoothly implemented in Alpha due to team composition, communication channels used and the various Kaizen activities undertaken. However, one key factor that may hinder the successful implementation of MFCA is the vendor. Learning from Alpha's experience, companies wanting to embark on MFCA must provide a link between the performance measurement system to the MFCA and Kaizen activities so as to reward employees accordingly. Finally, to be proactive on environmental issues, companies must realize that there is a need to put in place a tool such as MFCA so that good environmental management can provide opportunities for reducing costs, enhance environmental performance and improve the bottom line. Perhaps Dato' Hajah Rosnani Ibrahim, the Director General at the Department of Environment, sums up best when she said,

> "Doing well and doing good are not separate ideas. Corporations can deliver superior returns to shareholders by getting actively involved in the social and environmental spheres of business."

6. APPENDICES

Appendix A: Detailed Calculation for Costs of Material Loss (BEFORE and AFTER)

Costing of Material Loss (BEFORE)					
Cost	**Material**	**Energy**	**System**	**Disposal**	**Total**
Product	165g x 10,000 units = 1,650 kg	-TBD-	-TBD-	-TBD-	165g x 10,000 units = 1,650 kg
	@ RM2.50 per kg				@ RM2.50 per kg
	= RM4,125				= RM4,125
	(55%)				**(55%)**
Material Loss	135g x 10,000 units = 1,350 kg	-TBD-	-TBD-	-TBD-	135g x 10,000 units = 1,215 kg
	@ RM2.50 per kg				@ RM2.50 per kg
	= RM3,375				= RM3,375
	(45%)				**(45%)**
Total	300g x 10,000 units = 3,000 kg	-TBD-	-TBD-	-TBD-	300g x 10,000 units = 3,000 kg
	@ RM2.50 per kg				@ RM2.50 per kg
	= RM7,500				= RM7,500
	(100%)				**(100%)**

Appendix B:

Costing of Material Loss (AFTER)					
Cost	**Material**	**Energy**	**System**	**Disposal**	**Total**
Product	165g x 10,000 units = 1,650 kg	-TBD-	-TBD-	-TBD-	165g x 10,000 units = 1,650 kg
	@ RM2.50 per kg				@ RM2.50 per kg
	= RM4,125				= RM4,125
	(62%)				**(62%)**
Material Loss	102g x 10,000 units = 1,020 kg	-TBD-	-TBD-	-TBD-	102g x 10,000 units = 1,020 kg
	@ RM2.50 per kg				@ RM2.50 per kg
	= RM2,550				= RM2,550
	(38%)				**(38%)**
Total	267g x 10,000 units = 2,670 kg	-TBD-	-TBD-	-TBD-	267g x 10,000 units = 2,670 kg
	@ RM2.50 per kg				@ RM2.50 per kg
	= RM6,675				= RM6,675
	(100%)				**(100%)**

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