



Lincoln University Digital Thesis

Copyright Statement

The digital copy of this thesis is protected by the Copyright Act 1994 (New Zealand).

This thesis may be consulted by you, provided you comply with the provisions of the Act and the following conditions of use:

- you will use the copy only for the purposes of research or private study
- you will recognise the author's right to be identified as the author of the thesis and due acknowledgement will be made to the author where appropriate
- you will obtain the author's permission before publishing any material from the thesis.

**Mandatory Disclosure of Interim Reporting
by Malaysian Companies**

A thesis
submitted in partial fulfilment
of the requirements for the Degree of
Doctor of Philosophy in Accounting

at
Lincoln University
by
Norhayati bte Alias

Lincoln University
2011

Abstract of a thesis submitted in partial fulfilment of the requirements for the Degree of Doctor of Philosophy in Accounting

**Mandatory Disclosure of Interim Reporting by
Malaysian Companies**

by

Norhayati bte Alias

Interim reporting has become an important medium that allows listed companies to communicate with their stakeholders. In Malaysia, accounting standards and listing requirements regulate disclosures for interim reports. This study analysed the quarterly reports issued by 60 listed companies in Malaysia during 2005-2007. It established the timeliness of these reports and the level of disclosure compared with those mandated by Financial Reporting Standard 134 *Interim Reporting* and Paragraph 2.22 of the listing requirement specified by the Malaysian Stock Exchange. An unweighted disclosure index model was developed to determine the level of disclosure. Independent variables of company size, leverage, profitability, liquidity and industry are considered to be associated with the level of disclosure and timeliness. Both univariate and multivariate analyses were conducted to explore the relationship between the dependent and independent variables.

Findings for timeliness in this study reveal that: (a) some companies filed reports after the due date or allowable period had passed; (b) the length of time taken to file the report for the fourth quarter was longer than for other quarters; (c) the mean times for the filing of quarterly reports were 51 days for Q1 in all three years, 50 days for Q2 and Q3 in all three years, and 50 days for Q4 in 2005 and 2006, and 56 days for 2007; and (d) the average mean time taken to file reports for each quarter was between 50 to 56 days. The result of the Friedman test implies that there are statistically significant differences in the mean rank for timeliness across years. However, a mixed result was found regarding the mean of timeliness between quarters. No industry effect was observed for the mean of timeliness.

With regard to disclosure, this study found that the compliance level was between 87 and 97 percent for all three years. In other words, none of the companies fully complied with all the disclosure requirements! Results of one-way repeated analysis of variance revealed that there

was a significant difference in the means of the level of disclosure within the 2006 year. However, no significant differences could be observed for these means between quarters and across industries. Furthermore, there was a significant difference in the means of the level of disclosure for two groups of companies, those that “comply with the Reporting but not with the Listing” and those with “non-compliance with both requirements”.

The regression analysis revealed that there was a mixed association between the levels of disclosure. For example, an association could be found for level of disclosure and company size for Q1 and Q3, profitability for Q3, and liquidity for Q2 and Q4. Similar results were observed for the determinants of timeliness, such as the company size for Q1, Q2 and Q3, profitability for Q1, Q3 and Q4, and liquidity for Q1 and Q2 had a relationship with the timeliness. In addition, no association was found between leverage and level of disclosure and leverage and timeliness for all quarters.

A further investigation was conducted against the notes of quarterly reports to determine the extent of disclosure, namely comments on seasonality and cyclicalities, review of the performance (quarterly and yearly), material changes in the profit before tax, company prospects (future and current), Board of Directors’ opinion, and profit forecast. The findings reveal that most of the companies chose to satisfy only the minimum requirement. In addition, the Board of Directors’ opinion and profit forecasts were frequently not made available. This study also revealed that no enforcement actions or penalties were imposed on the non-compliant companies.

Keywords: Interim reporting, level of disclosure, compliance, timeliness, characteristics, disclosure index

Acknowledgements

IN THE NAME OF ALLAH, MOST GRACIOUS, MOST MERCIFUL.

I AM THANKFUL TO ALMIGHTY ALLAH FOR HIS GUIDANCE AND BLESSINGS
ON THE SUCCESS OF MY EFFORTS DURING THE COURSE OF THIS STUDY.

Then I would like to express my deepest thanks to a number of very special individuals and organisations who have made a valuable contribution to this thesis.

First and foremost, I thank my sponsors, the Government of Malaysia and the University Technology MARA (UiTM), for awarding me the scholarship and providing financial support for my family, to enable me to pursue this doctoral programme at Lincoln University, New Zealand.

Secondly, special thanks and gratitude go to my supervisor, Mr Murray Clark, for his willingness to take up the role of my supervisor, and for his ideas and support through the thesis preparation. A special note also goes to my associate supervisor, Dr Jamal Roudaki, for his willingness to review and his assistance in helping me to complete the thesis. My appreciation also goes to the staff of the Faculty of Commerce, including Dr Baiding Hu, Dr Ramesh Baskaran, Mr Bert Ward, Eileen Seymour, Annette Brixton and Carmen Campbell, to name a few. I am also obliged to staff at the Student Learning Centre for their generous help in providing valuable information and continuous support.

To my father, Haji Alias Md Zain, and my mother, Hajjah Halimah bte Pa'wan, my brothers, Angah and Anjang, and my sisters, Alang, Atih Achik and Ika, I give thanks for their love, prayers and support in every aspect of my life. I am greatly indebted to my true friends, Raziah, En Arun, Albar, Timah, Peah, Faiz, Kak Meen and Lynn Honda, for all their support and prayers during my study.

Finally, I owe a debt of gratitude to my family. Without their sacrifice, tolerance and encouragement I would not have been able to undertake this journey. To my husband, Halim Shuhaimi, I give thanks for his love, support and sacrifice in allowing me to pursue my PhD. I thank my lovely children, who accompanied me during my study, Izzah, Farhana, Haziman Aiman and Farzana, for their love, understanding and assistance. Without the support of all of them I would not have been able to complete this thesis.

I dedicate this thesis to my loving family.

Table of Contents

Abstract	ii
Acknowledgements	iv
Table of Contents	v
List of Tables	viii
List of Figures	ix
Chapter 1 Introduction	1
1.1 Introduction	1
1.2 Why interim reporting disclosure?.....	3
1.3 Problem statement.....	5
1.4 Research objectives	6
1.5 Scope of the study	6
1.6 Contribution of the study	7
1.7 Outline of the subsequent chapters	8
Chapter 2 Legislation of Interim Reporting in Malaysia	10
2.1 Introduction	10
2.2 Half-yearly reporting (before 1999).....	10
2.3 Quarterly reporting (during and after 1999).....	11
Chapter 3 Literature Review	17
3.1 Introduction	17
3.2 Quality of disclosure	17
3.3 Compliance with the disclosure regulation	18
3.4 Timeliness	27
3.4.1 Reporting lag	27
3.4.2 Reporting frequency	30
3.5 The determinants of interim reporting disclosure	31
3.6 Summary	36
Chapter 4 Conceptual Framework, Variable Identification and Hypotheses Development	37
4.1 Introduction	37
4.2 Theoretical framework for corporate disclosure	37
4.3 Variable identification and development of hypotheses	39
4.3.1 Hypotheses for testing the mandatory disclosure for interim reporting among Malaysian companies	39
4.3.2 Hypotheses for testing the association between mandatory disclosures and company attributes	41
4.3.2.1 Hypotheses for testing the association between the level of disclosure and company attributes	41
4.3.2.2 Hypotheses for testing the association between timeliness and company attributes	46
4.4 Summary	48

6.4.7	Results from multivariate analyses	88
6.4.8	Diagnosis of the regression model	91
6.4.9	Association between timeliness and company characteristics	92
6.4.9.1	Univariate test for timeliness	92
6.4.9.2	Result of the nonparametric Mann-Whitney U test between reporting lags and company attributes	93
6.5	Extent of disclosure.....	96
6.5.1	Comment on seasonality and cyclicity	96
6.5.2	Review of performance	96
6.5.3	Material changes in the profit before taxation	99
6.5.4	Report on future prospects	100
6.5.5	Report on current progress	100
6.6	Board of Directors' opinion	101
6.7	Profit forecast.....	102
6.8	Conclusion	103
	Chapter 7 Conclusion.....	106
7.1	Introduction.....	106
7.2	Major findings of the study	106
7.2.1	Timeliness of quarterly reporting	106
7.2.2	Disclosure of quarterly reporting	108
7.2.3	Determinants of disclosure and timeliness of quarterly reporting	108
7.2.4	Extent of disclosure for notes of quarterly reporting	109
7.3	Implications of the research findings	110
7.4	Limitations of this study	112
7.5	Recommendations for future research	113
	References.....	114
	Appendix 1 Kilmogorov Value (Before and After Transformation)	120
	Appendix 2 Item in the Disclosure Requirement.....	122
	Appendix 3 Scoring Sheet for Level of Disclosure	124
	Appendix 4 Scoring Sheet for Extent of Disclosure.....	128
	Appendix 5 Regression Analysis for Each Quarter.....	130

List of Tables

Table 2.1	Interim reporting in Malaysia before 1999, during and after 1999	16
Table 4.1	Industries for Main Board, Second Board and MESDAQ	45
Table 4.2	Summary of the measurement of dependent and independent variables.....	48
Table 5.1	Reliability statistics.....	56
Table 5.2	Bi variate correlations for the reliability test	57
Table 6.1	Reporting within the allowable period (%)	62
Table 6.2	Reporting lag (days)	63
Table 6.3	Nature of disclosure compliance (%)	64
Table 6.4	Disclosure index (mean).....	69
Table 6.5	Comparison of average mean disclosure indices.....	70
Table 6.6	Summary of statistics for total asset, liquidity, profitability and leverage	71
Table 6.7	Number of companies by industry.....	72
Table 6.8	Comparison of means for timeliness (number of days) across years	74
Table 6.9	Comparison of means for timeliness (number of days) between quarters.....	75
Table 6.10	Comparison of means for timeliness across industries.....	76
Table 6.11	Means for timeliness between groups.....	77
Table 6.12	Comparison of means for the disclosure index between quarters for 2005 to2007	78
Table 6.13	Comparison of means for the disclosure index across years for Q1 to Q4.....	79
Table 6.14	Comparison of means for the disclosure index across industries.....	80
Table 6.15	Comparison of means for the disclosure index for Group 2.....	81
Table 6.16	Comparison of means for the disclosure index for Group 4.....	81
Table 6.17	Comparison of means for the disclosure index between groups	82
Table 6.18	Pearson’s correlation between the level of and each of the five independent variables for Q1 to Q4	83
Table 6.19	Correlation matrix of independent variables	87
Table 6.20	Tolerance and VIF for Q1 to Q4.....	88
Table 6.21	The effect of company attributes on mandatory disclosure for Q1 to Q4	88
Table 6.22	Nonparametric Spearman’s correlation between reporting lag and each of the five independent variables	92
Table 6.23	Result of the nonparametric test between reporting lag and corporate attributes..	94
Table 6.24	Comment on seasonality and cyclicity (%)	96
Table 6.25	Review of the quarterly performance (%)	97
Table 6.26	Review of the yearly performance (%).....	98
Table 6.27	Material changes in the PBT.....	99
Table 6.28	Company prospects (future)	100
Table 6.29	Company progress	100
Table 6.30	Board of Directors’ opinion.....	101
Table 6.31	Profit forecast.....	102

List of Figures

Figure 4.1 Theories of corporate disclosure.....	37
Figure 4.2 Conceptual model	39
Figure 5.1 Testing Goodness of Measures (forms of Reliability and Validity).....	54

Chapter 1

Introduction

1.1 Introduction

International Accounting Standard (IAS) 34 *Interim Financial Reporting* defines an interim financial report as a financial report containing either a complete set of financial statements (as described in IAS 1 *Presentation of Financial Statements*) or a set of condensed financial statements, as described in this Standard for an interim period. It further defines an interim period as a financial reporting period shorter than a full financial year. However, this standard does not specify which companies must publish such reports or how frequently they should be published. The interim report could be issued quarterly, half-yearly or for any other period, depending on the regulations of the country concerned. Examples of countries that provide quarterly reporting are the USA, Canada, Brazil, Mexico, China, Taiwan, Thailand and Saudi Arabia, while countries such as Japan, Australia, Singapore, New Zealand and the UK require companies to produce half-yearly reports. IAS 34 allows companies to produce either a full set of financial statements that comply with the requirements of IAS 1 *Presentation of Financial Statements*, or condensed financial statements consisting of a condensed balance sheet, income statement, cash flow statement, and a statement of changes in equity, together with selected explanatory notes. In Malaysia, publicly listed companies are also subject to the requirement of Financial Reporting Standard¹ (FRS) 134 *Interim Financial Reporting* and The Listing Requirements², Para 9.22.

Today, quarterly reporting has become one of the important mechanisms for management to communicate with investors. This importance is reflected in the actions taken by numerous national stock exchanges and securities regulators who have introduced interim financial reporting as a requirement for listing. The reason for such changes is because the interval between the annual financial statements is too long for investors to be without financial information from companies in which they have invested. In fact, data in annual reports have become historical or outdated on the day they are released to the public, and will lead to an

¹ The Financial Reporting Standard is a renamed version of the MASB standard beginning from 1 January 2005. It is equivalent to the International Financial Reporting Standard (IFRS).

² The Listing Requirement is a regulation for listed companies issued by Bursa Malaysia. Para 9.22 refers to disclosure made for periodic disclosures.

inaccurate prediction of a company's performance. Therefore, interim reports can help resolve this matter since they show the progress of a company within their yearly reporting cycle.

Financial analysts worldwide claim that interim financial reporting is an important source of information in making decisions (Deppe, 1994). At the same time, the importance of interim reports to stock market investors' decision-making is well documented in the literature (Mangena & Tauringana, 2007). It is believed that these reports provide investors with material information on the financial condition of publicly listed companies in a timely, relevant and reliable manner to assist investors in making informed investment decisions, particularly, in accurately forecasting earnings and share prices (Abdel-Khalik & Espejo, 1978; Allen *et al.*, 1999; Foster, 1977).

Furthermore, some countries (such as the USA and India) require companies to audit their interim financial reporting. Liming *et al.* (2006) reported that audited interim reporting helps to prevent managers from manipulating the earnings in the fourth quarter, thus increasing the credibility of the annual report. The benefits derived from quarterly reporting can be summarised as per Yee (2004):

- a) Improved timeliness of disclosure and more frequent reporting would help investors to monitor the performance of management and reduce agency frictions.
- b) By making stock prices impound interim reporting news more frequently, more frequent interim reporting would help improve the efficiency of capital allocation.
- c) By spreading news across more frequent interim earnings announcements, more frequent reporting may reduce information asymmetry between sophisticated and less sophisticated traders. Hence, this will improve market liquidity on earnings announcement dates.
- d) By reducing interim information asymmetry between insiders and the public, more frequent interim reporting may reduce wasteful redundant rent-seeking efforts by analysts trying to acquire undisclosed information.

However, there are several drawbacks, or criticisms, regarding the interim report. The interim report was once regarded as the "forgotten report" (Taylor, 1965), which has never been subjected to auditing, unlike the annual reports. This reduces its usefulness in the eyes of the investors. Furthermore, it can be costly to audit an interim report, since it needs to be produced either quarterly or half-yearly. The increased frequency of reporting will definitely increase the administration costs such as compiling and distributing (Yee, 2004). Yee further

explains that companies need more time and human resources to produce quarterly reports, since they have to be produced every three or six months. This will impose a burden on companies, especially on management, since they are responsible for both the annual report and the interim report. As such, this will lead to greater estimation problems (Reilly *et al.*, 1972) and exacerbates the short-term focus of the typical investor (Rahman *et al.*, 2007). The integrity of the interim report is also questionable when a country does not require interim reports to be audited, as in Malaysia. Moreover, the result of the fourth quarter will not be integrated into the annual report.

Manegold and McNicholas (1983), Butler *et al.* (2007) and Gigler and Hemmer (1998) believe that mandating interim reporting will not improve timeliness. In fact, Butler *et al.* and Gigler and Hemmer reveal that managers actually stop voluntarily disclosing information when interim reporting is mandatory. In other words, mandating frequent reporting can influence a company's propensity to issue voluntary disclosures that are potentially more precise indicators of a firm's value.

1.2 Why interim reporting disclosure?

Relating the above discussion to the Asian financial crisis that happened in 1997/1998, literature has suggested that a major contributing factor to this economic crisis was the lack of transparency, or inadequate disclosure, by corporate entities (Ho & Shun Wong, 2001; Rahman *et al.*, 2007). Thus, it prevents investors and creditors from receiving necessary and timely information that would be useful for their investment decisions. In addition, disclosure and transparency affect both a company's operations and its performance as an investment. Operationally, rigorous disclosure and transparency systems enable management and the board of directors to allocate resources rationally and to run the business in accordance with strategic plans. In this respect, disclosure and transparency are important to managers and directors, and have the capacity to influence the company's ability to generate the intrinsic value of cash flows.

Generally, corporate disclosure can be defined as a formal communication to inform the public about the performance of the company for a specific period. Specifically, disclosure is the communication of economic information, financial or non-financial, concerning a company's financial position and performance (Owusu-Ansah, 1998). It can be presented in many forms, such as interim reports, prospectuses, and employee reports, announcements to the stock exchange, other printed material, and electronic media. However, the most prominent disclosure to the shareholders is the annual report (Sighvi & Desai, 1971).

Corporate disclosures can be divided into two broad categories: required disclosures and voluntary disclosures (Marston & Shrikes, 1991). Required disclosures, also known as mandatory disclosures, are governed by the authorities who regulate the accountancy ‘laws’ and the financial market(s) for that particular country. On the other hand, voluntary disclosures are when management decide to disclose information that exceeds the mandatory requirements (Ahmet & Serife, 2007).

Research into corporate disclosures since the work of Cerf (1961) primarily focuses on the quality of the mandatory and voluntary disclosures. In general, disclosure studies can be divided into two schools of thought. One school of thought investigates the determinants of disclosure decisions (e.g. Chow & Wong-Boren, 1987). Results of these and similar studies have been mixed, which leads to the second school of thought, the inspection of the capital market implications of disclosure (e.g. Christine, 1997). Research in both schools of thought essentially analyses the mandatory and voluntary disclosures that appear in annual reports.

Previous literature indicates that users need information that will help them make better investment decisions, and this has been widely discussed following the many high-profile corporate failures that have occurred. Consequently, many countries have actively reviewed their capital market regulations and financial reporting systems. Malaysia is an example of an Asian country that has reviewed its capital market, resulting in the Securities Commission establishing a blueprint known as the Capital Market Master Plan (CMP). The CMP is a strategic blueprint charting the 10-year development of Malaysia’s capital market. The CMP has six objectives³, one of which is to strengthen the regulatory regime. The Plan provided recommendations to achieve this objective by further enhancing disclosures in the annual reports that are prepared by listed companies in Malaysia. In line with this, Bursa Malaysia Securities Berhad (BMSB)⁴ now requires quarterly reporting of financial statements, commencing March 1999.

The introduction of quarterly reporting is seen as one of the reform measures aimed at promoting greater transparency in the corporate sector (Capulong *et al.*, 2000) and helps increase investor confidence in the capital market. Thus, the objective of having transparent and quality financial information would be achieved. Such timely information will reduce the

³ The six objectives of the CMP are to be the preferred fund-raising centre for Malaysian companies, to promote an effective investment management industry and a more conducive environment for investors, to enhance the competitive position and efficiency of market institutions, to develop a strong and competitive environment for intermediation services, to ensure a stronger and more facilitative regulatory regime and to establish Malaysia as an international Islamic capital market centre.

⁴ Formerly known as the Kuala Lumpur Stock Exchange (KLSE).

uncertainties and accordingly improve the quality of decisions made by the users of the financial statements. Clearly, companies could just simply comply with the regulations, but it is also possible that companies that produce interim reports do so because they provide better quality information to the users. Ahmed and Nicholls (1994) showed that full compliance with mandatory disclosure requirements is not attainable in practice, especially in emerging economies. They cited, among others, less stringent regulatory and enforcement systems, and the high cost of employing professionally qualified accountants as contributing factors. Malaysia is an emerging economy, and it would be appropriate to examine the level of compliance achieved by Malaysian companies. In addition, the Financial Reporting Act 1997 (FRA 1997) was enacted and enforced in July 1997 to give legal backing to accounting standards. Malaysia-listed companies are obliged to comply with the approved accounting standards issued by the Malaysia Accounting Standard Board⁵ (MASB). To ensure companies comply with the regulations, the FRA 1997 Act also grants enforcement powers to the Securities Commission, the Central Bank and the Registrar of Companies. This study reports on how well Malaysian companies comply with mandatory disclosure requirements for interim reports and, in addition, examines the determinants of interim reporting disclosures.

1.3 Problem statement

Research on interim reporting was introduced in the U.S. with the earliest survey conducted by Taylor (1965), followed by Lipay (1972), Edwards *et al.* (1972), Beresford and Rutzler (1976), and Mc Ewen and Schwartz (1992), to name a few. One stream of research in this area discusses the effect of quarterly reporting on the accuracy of forecasted earnings and share prices, while another stream of research investigates the aspects of usefulness, reliability and timeliness of quarterly reporting from a user's perception. However, little research has been carried out to investigate the total compliance of mandatory disclosure for interim reporting. Further, these two streams of research were conducted when interim reporting was voluntary (see Marty *et al.*, 2007) and it is not conclusive (see Ku Ismail & Chandler, 2004, 2005a, 2005b, 2005c, 2007). Therefore, this study will provide a new dimension for a wider research area for interim reporting, because it is conducted under mandatory practices.

This study will contribute to the existing body of knowledge in the following ways. Firstly, the study is unique in that it will provide findings on the quality of interim reporting from the

⁵ The Malaysia Accounting Standard Board (MASB) is the sole body that formulates accounting standards in Malaysia. It was formed under FRA 1997, with the Financial Reporting Foundation as a body to oversee MASB activities.

‘adequacy’ perspective⁶. *Adequacy* refers to total compliance for mandatory disclosure of interim reporting among Malaysian companies from two aspects: the disclosure requirement for interim reporting, namely the FRS 134 Interim Reporting (hereafter Reporting), and the Listing Requirement Para 2.22 (hereafter Listing). Further, this study will look at the relationship between company attributes that influence compliance for mandatory disclosure of interim reporting across all quarters. This is done because many studies have been conducted to test company characteristics with the level of disclosure in annual reports, or the effect on interim reports for the third or fourth quarter. With all this in mind, the following research objectives were formulated.

1.4 Research objectives

This study is undertaken:

- To examine whether a company complies with the interim reporting requirement of Malaysian companies for the period 2005 to 2007;
- To investigate whether there is a significance difference between years and quarters on the level of disclosure and timeliness; and
- To explore the relationship between company attributes and the level of disclosure and timeliness.

To achieve these objectives, a number of specific hypotheses were developed and will be tested. Various statistical analyses were used to test the hypotheses with the aim of answering the following research questions:

- a) How well do Malaysian companies comply with mandatory disclosure requirements for interim reports as a consequence of implementing FRS 134?
- b) Are there any significant differences between year and quarter regarding the level of disclosure and timeliness?
- c) What company characteristics are associated with the level of disclosure and timeliness?

1.5 Scope of the study

Primarily, this study empirically investigates the ‘adequacy’ of mandatory information disclosure practices of the Malaysian companies. FRS 134 Interim Reporting permits a

⁶ The adequacy perspectives in this study adopt the meaning given by Owusu-Ansah (1998) with modification. This study investigates ‘adequacy’ with reference to the reporting requirement for interim reporting as compared to Owusu-Ansah’s study that investigated ‘adequacy’ with reference to the reporting requirements for annual reports.

complete set of financial statements or a set of condensed financial statements. However, this study only considers a set of condensed financial statements because the minimum disclosure requirement is subject to the requirements of FRS 134 and Para 9.22 Bursa Malaysia. This means if company chooses to present a set of condensed financial statements, it is not required to comply with all the Financial Reporting Standard's disclosures. In addition, the study does not consider the disclosure practices of regulated companies, such as banks and MESDAQ Market, since these companies are subject to different regulation requirements.

This study adopts the adequacy measurements outlined by Qwusu-Ansah (1998) , and therefore does not investigate the accounting recording systems or the other measurement aspects of financial accounting standards. It does not focus on the adequacy of other areas of accounting, such as cost and managerial accounting, or accounting information systems. No attempt was made to assess the accounting principles employed and/or the estimates made by management when preparing the financial statements of the sample companies. Further, this study does not investigate press releases or any other form of communication that is or could be associated with interim reporting.

1.6 Contribution of the study

This study will contribute to the body of literature mainly concerning Malaysia and its policy makers. The contribution can be seen from three aspects. Firstly, this study will look in detail at the regulations, namely the disclosure requirement, that govern interim reporting in Malaysia. Therefore the results of this study are sufficiently interesting to warrant an extension to the research area on mandatory disclosure, particularly in the area of interim reporting either in Malaysia or other countries and conducted for larger sample sizes. This is because the disclosure requirement used in this study refers to FRS 134 Interim Reporting and Listing requirement. As for the FRS 134 Interim Reporting, this standard is equivalent to IAS 34 Interim Reporting and this means this study can be adopted by other countries. However, the Listing Requirement needs to be modified to suit the Securities Commission regulation under which the study is to be conducted.

Secondly, the findings of this study are unique and differ from those in other literature on interim reporting for disclosure because all aspects of mandatory disclosure, namely timeliness, level of disclosure, extent of disclosure and company characteristics were tested under one study. Further, the test of mandatory disclosure was carried out for all four quarters, unlike other studies of interim reporting that usually focused on either quarter 3 or quarter 4 and ignored what had happened in quarter 1 and quarter 2.

Thirdly, this study provides a new dimension of compliance by introducing the classification of the nature of compliance based on the disclosure requirement. This study discovered that the nature of compliance can be classified into the following four groups, namely:

Group 1- Comply with the Reporting and the Listing

Group 2- Comply with Reporting, but not with Listing

Group 3- Comply with Listing, but not Reporting

Group 4- Do not comply with Reporting and Listing.

Another significant contribution of this study as far as interim reporting is concerned, is the development of a checklist using thematic content to measure the extent of disclosure.

Fourthly, the prominent disclosure model, namely disclosure indices, has been used in this study as a basis for establishing the extent of disclosure and identifying the company's characteristics that influence the disclosure pattern that is widely used in annual reports. A self-constructed checklist was established as part of the research process. It is the first comprehensive checklist for an interim reporting study based on Malaysia disclosure requirements and issues of validity and reliability have been addressed (it can be used) . The checklist will provide guidance to future researchers concerning the collection of data relevant to disclosures related to interim reporting.

Findings of this study are also important for policy makers. The recommendation made in the blue print of the Capital Market Master Plan by the Securities Commission is to enhance disclosure of Listed Companies. The measure is carried out with the objective of strengthening the capital market regulation in order to prevent the effect of the Asian Financial Crisis. Further, users will always be the centre of attention in protecting their investment interest. Therefore, it is important for users to have timely and quality information for decision making. However, the findings reveal that there are still issues concerning compliance. Thus, the Securities Commission should identify the reasons companies do not comply with the reporting regulations and then take appropriate action to address this issue.

1.7 Outline of the subsequent chapters

The remainder of the thesis is as follows. Chapter 2 explains the legislation of interim reporting in Malaysia. Chapter 3 provides a review of literature relating to interim reporting. Chapter 4 elaborates on the conceptual framework, identifies the variables, and develops the hypotheses in this study. Chapter 5 describes the research methodology, sample selection

procedure, and data analysis technique. The results are reported and discussed in Chapter 6. The final chapter will summarise and conclude the analysis, and offer recommendations.

Chapter 2

Legislation of Interim Reporting in Malaysia

2.1 Introduction

In order to provide a context for this study, Chapter 2 will review the legislation relating to interim reporting in Malaysia. The discussion will focus on two reports: the half-yearly report and the quarterly report, which coincide with the periods pre- and post-1999. The post-1999 period is a formally regulated environment.

2.2 Half-yearly reporting (before 1999)

Interim reporting was first introduced in Malaysia in 1966. During the period 1966 to 1999, companies listed on the Stock Exchange of Malaysia and Singapore (now known as Bursa Malaysia) were subject to the requirements under the Listing Undertaking⁷. Directors of listed companies were encouraged to issue half-yearly reports as soon as possible after the end of the period, stating the profitability of and revenue from the company's activities, plus any material factors that may change the earning capacity of the firm (Lim, 1996). The Exchange also had the right to publish the half-yearly reports after they had been filed. The Stock Exchange of Malaysia and Singapore Gazette dated 7 February 1967 contained the first publication of the half-year reports from several companies. However, those reports were very brief and qualitative in nature – no figures on profitability and revenue were reported.

In 1987, the Kuala Lumpur Stock Exchange (KLSE) introduced its new Listing Manual. Under this regulation, company directors were required to submit a half-yearly report to the Exchange within three months after the end of the half-year period. The report should disclose company activities, profits and any material factors and/or exceptional circumstances affecting the earning capacity and profits of the company. In addition, companies were required to state whether or not the figures had been audited. Six years later, the Listing Manual was replaced with the KLSE Listing Requirement (Amendment 1993). Listed companies were then required to submit half-yearly reports on a consolidated basis to the KLSE, although the submission period and the audit requirement remained the same. However, fixed formats as set out in notes attached to the Listing Requirement for the half-

⁷ The Listing Undertaking supplements the Listing Manual in the Articles of Association. In 1966, the three important charters governing a company during its active life were the Companies Act, the Memorandum & Articles of Association, and the Stock Exchange Listings Undertaking.

year reports were made available. The companies were required to present the items similar to the income statement. Further, companies were required to disclose factors affecting their earning/revenues, earnings per share, deferred tax, pre-acquisition profit, profits on sale of investments and properties, details of shares issued, current year prospects, and details of dividends. In 1997, this Listing Requirement was replaced by the KLSE Listing Requirement (Amendment 1997), which did not change the periodic reporting requirement.

These regulations became more significant after the Malaysian Securities Commission issued the Policies and Guidelines on Issue/Offer of Securities in 1995. Under the Post-Listing Obligation of these Guidelines, listed companies were required to submit to the Securities Commission interim and annual financial reports immediately after the figures became available. These results were to be announced within the period stated in the listing requirements or the rules of the Stock Exchange on which the company was listed.

2.3 Quarterly reporting (during and after 1999)

In 1999, the KLSE announced that from 31 July 1999, all listed companies would be required to issue quarterly reports instead of half-yearly reports. It was intended that these quarterly reports would provide:

- Greater and more timely disclosure of information regarding company results;
- Improved enforcement of existing rules and regulations as part of the move towards making audit committees effective and promoting good corporate governance;
- An awareness of increased sanctions that could be imposed on company directors and listed companies for wrongdoing and poor internal control systems due to the lack of corporate governance; and
- Greater emphasis on the transparency and accountability of company directors, as the KLSE moves towards a full-disclosure regime.

This quarterly reporting can be found through the KLSE LINK⁸. Further, the KLSE Listing Requirement (Amendment 1999) (KLSE, 1999) required companies to file with the KLSE a quarterly report on a consolidated basis as soon as the figures are available, but not later than two months after the end of each quarter. The quarterly report comprises the balance sheet,

⁸ KLSE LINK is an internet-based electronic document management system that can be found on Bursa's websites.

income statement and explanatory notes. The year-to-date figures and comparative data from the immediately preceding year must also be disclosed.

The Listing Requirements were further strengthened when the revamped Listing Requirement took place in 1999 and was submitted to the Malaysian Securities Commission for approval. Issued in January 2001, it was the first revamp undertaken by the KLSE since the Listing Requirements were introduced in 1987. One objective of the revamp was to strengthen the provisions regarding disclosure, financial reporting, continuing listing obligations and corporate governance. The additional requirements were as follows:

- Quarterly reports must be prepared based on the accounting policies and measurement, which are consistent with those in the most recent audited annual accounts. Where an accounting policy in the quarterly report differs from that in the most recent audited annual accounts, the differences must be explained in the quarterly report (Section 9.22(2)(c)).
- The listed issuer must comply with the approved accounting standards of the Malaysia Accounting Standard Board (MASB) to the extent that the approved accounting standards are applicable to a quarterly report (Section 9.22(2)(d)).
- In circumstances where a change in an applicable accounting standard of MASB (or other legislation) becomes effective during a financial year and will be applicable to the preparation of the listed issuer's forthcoming annual audited accounts, the basis of preparation of the quarterly reports during the financial year must be consistent with that of the audited annual accounts (Section 9.22(2)(e)).

The revised Listing Requirement also strengthened the fixed format for quarterly reporting. Under this revised requirement, companies are required to disclose the consolidated income statement and the balance sheet, together with 21 explanatory notes covering *inter alia* accounting policies, the nature of exceptional items (if any), the status of corporate proposals and the nature of borrowing. In addition, the new requirements detail the contents of the quarterly report for closed-end funds.

In the same year, MASB issued its Draft Statement of Principles #4 (DSOP 4), *Interim Financial Reporting*. The DSOP provides guidance on the application of accounting principles and financial reporting practices of listed companies in the preparation of quarterly reports. In addition, application of the principles presented in DSOP 4 facilitates compliance with the KLSE Listing Requirement regarding quarterly reports. This Statement provides

guidance on best practice regarding the preparation of quarterly reporting. Among others, the statement suggests the use of the discrete method⁹ rather than the integral method¹⁰ for the preparation of quarterly reports. The Statement also encourages companies to publish either a complete set of financial statements or a set of condensed financial statements to meet users' needs. All this guidance cannot be found in the *KLSE Listing Requirement*. Therefore, the issuance of DSOP 4 to a Statement of Principles 2 (SOP 2) in July 2000 provided another milestone in the development of quarterly reporting in Malaysia. However, this Statement provides guidance only – in other words, the Statement does not have legal backing.

Therefore, MASB took a further step in March 2001 by issuing Exposure Draft 30 *Interim Financial Reporting* (ED30), which, after going through the due diligence process of standard setting, ultimately became MASB 26 *Interim Financial Reporting* in 2002. The Standard is essentially an adoption of IAS 34 *Interim Financial Reporting* issued by the International Accounting Standards Committee (IASC) in 1998. This Standard is an approved accounting standard (AAS). Approved accounting standards were granted legal backing under S.27 of the Financial Reporting Act 1997 (FRA 2007), which has now been replaced with S.26D of the Financial Reporting (Amendment) Act 2004 (FRA 2004), as follows:

“Where financial statements are required to be prepared under any law administrated by the SC, Central Bank or the Registrar of Companies, such financial statements shall be deemed not to have complied with the requirements of such law unless they have been prepared and are kept in accordance with the approved accounting standard.”

MASB 26 prescribes two additional statements as well as the existing Listing Requirement – a condensed statement showing either all changes in equity or changes in equity other than those arising from capital transactions with owners and distributions to owners, and a condensed cash flow statement. Thus, listed companies need to prepare five statements. In addition, MASB 26 does not specifically recommend the recognition principles for interim financial reporting. The Standard only provides examples of how to use the discrete and the integral approach, and in favour of the former.

⁹ The discrete method treats each interim period as an accounting period distinct from the annual cycle. The transactions reported in the interim period should reflect the economic activity of that particular quarter independent of the other quarters, rather than outcomes based on a forecast of the operations of the forthcoming year. Under this method, deferrals, accruals and estimates at the end of each interim period should be determined by the principles that apply to the annual periods.

¹⁰ The integral method regards an interim period as part of the larger annual reporting cycle. It considers that each interim period is affected by judgments made in the interim period as to results of operations in the annual period. Under this perspective, deferrals, accruals and estimates reported in each interim period reflect the accountant's belief as to what is likely to transpire relative to the results of operations for the entire year.

The enforcement body, namely the Registrar of Companies and Securities Commission, in Malaysia has also made amendments to the Companies Act 1965 and Securities Industries Act 1983 (SIA 1983), respectively in conjunction with the announcement of FRA 1997. For example, the Companies Act 1965 inserted subsection 1 to S.166A to refer to the approved accounting standard used in the Companies Act 1965. This change carried a similar meaning assigned thereto in section 2 of FRA 1997. Further, the Securities Commission came out with a new regulation for the Securities Industries Act 1983 that applies to the financial statements and accounts of listed companies, effective from 18 June 1999. This regulation may also be cited as the Security Industry (Compliance with Approved Accounting Standards) Regulation 1999. This regulation highlighted that “approved accounting standard” shall have the meaning assigned to the expression in Section 2 of FRA 1997 (S3 SIA 1983). In addition, the Act also laid out that failure to comply with approved accounting standard is an offence. Specifically, S.4 of this Act requires that:

- Every listed corporation, its directors and chief executive shall prepare and present or cause to be prepared and presented the financial statements, and if the listed corporation is a holding corporation for which consolidated financial statements are required, the consolidated financial statements, of the listed corporation in accordance with approved accounting standards (S4(1) SIA 1983);
- Every director of a listed corporation shall ensure that the accounts, and if the listed corporation is a holding corporation for which consolidated accounts are required, the consolidated accounts, of the listed corporation, when laid before the annual general meeting are made out in accordance with approved accounting standards (S4(2) SIA 1983); and
- Any person who contravenes sub-regulation (1) or (2) commits an offence (S4(3) SIA 1983).

Following the introduction of MASB 26, KLSE once again amended their Listing Requirements in July 2002 so that reports for quarters ending on or after 30 September 2002 must be prepared in accordance with MASB 26. The amendment also eliminated the fixed format that has been described in the previous listing requirement.

Beginning on 1 January 2005, the approved accounting standards were renamed Financial Reporting Standards (FRSs), in line with similar moves by other countries in the region. MASB also changed the numbering of the standards to correspond with the International

Accounting Standards. Hence, MASB 26 is now known as FRS 134 *Interim Financial Reporting*.

Today, companies listed on Bursa Malaysia are subject to the requirements of FRS 134₂₀₀₂ which become operative for financial statements covering periods beginning on or after 1 July 2002. FRS 134₂₀₀₂ applies if an entity is required or elects to publish interim financial reports in accordance with FRSs. MASB encourages all entities, which elect to provide interim financial reports, to conform to the recognition, measurement and disclosure principles set out in FRS 134₂₀₀₂. The Standard permits entities to publish either:

- A complete set of financial statements¹¹ (as described in FRS 101 “*Presentation of Financial Statements*”); or
- A set of condensed financial statements¹² (as described in FRS 134₂₀₀₂).

The objective of this Standard is to prescribe the minimum content of an interim financial report. FRS 134₂₀₀₂ does not mandate which entities should be required to publish interim financial reports, or how soon after the end of an interim period. However, the Standard encourages listed companies to make their interim financial reports available no later than 60 days after the end of the interim period, which is consistent with the Bursa requirement of two months. Currently, the disclosure requirements for quarterly reporting are subject to FRS 134 *Interim Financial Reporting* and Part A of Appendix 9B of the Bursa Malaysia Listing Requirement.

¹¹ Complete financial statements refer to an interim financial report that contains a complete set of financial statements; the form and the content of the interim report should conform to the requirement of FRS 101. It should not be described as complying with FRS, unless it complies with all the requirements of each applicable standard or each applicable interpretation issued by MASB.

¹² Condensed financial statements should include, at a minimum, each of the headings and subtotals that were included in the entity’s most recent annual financial statements and the selected explanatory notes required by FRS 134. Additional line items or notes shall be included if their significance in the overall context of the entity has changed since the most recent annual financial report and their omission would make the condensed interim financial statements misleading.

The development of interim reporting in Malaysia is summarised in Table 2.1.

Table 2.1 Interim reporting in Malaysia before 1999 and during and after 1999

	Before 1999	During and after 1999
Frequency	Half-yearly report	Quarterly report
Submission period	As soon as possible, and later changed to three months.	60 days or two months
Standard	No standard, only guidance.	Effective from 2002
Legal	No	Governed by FRA (Amendment) 2004
Purpose	Internal use	External user

In order to ensure that listed companies comply with the current regulations, the Securities Commission monitors listed companies through a financial reporting surveillance and compliance programme. The objectives of this programme are to ensure that listed companies comply with approved accounting standards in the preparation and presentation of their financial statements. When a listed company fails to comply with approved accounting standards, the Securities Commission has broad powers to direct the company and its directors, or chief executive, to take the necessary rectifying actions, or make the necessary announcements with respect to the non-compliance or rectification required. Such offences also carry a general penalty of a fine not exceeding RM1 million, or imprisonment for a term not exceeding five years, or both (Darus, 2005). This action shows the seriousness on the Securities Commission's part to carry out its duty as an enforcement body.

Chapter 3

Literature Review

3.1 Introduction

This chapter starts with a broad definition of the quality of disclosure that has been used in the literature, and then discusses previous literature from the perspectives of compliance with disclosure regulations, the timeliness and extent of disclosure of interim reporting.

3.2 Quality of disclosure

The quality of disclosure in corporate annual reports and accounts has been represented in the literature by several constructs: adequacy (Buzby, 1974), comprehensiveness (Barett, 1976), informativeness (Alford *et al.*, 1993), and timeliness (Curtis, 1976; Whittred, 1980) (as cited in Wallace *et al.*, 1994, p43). Nonetheless, the ambiguity of the meaning of quality of disclosure is still a relevant question emphasised in the literature. For example, Imhoff (1992) showed that it is difficult to come to an agreement as to the criteria of quality financial reporting. He suggests that “high accounting quality is closely associated with conservative accounting methods and full financial disclosures”. McEwen and Schwartz (1992) agreed that it is difficult to measure the quality of interim reports, and argued that the compliance with the minimum disclosure requirement, the presence of ‘settling up’¹³ in the fourth quarter, and accuracy of the reports, were to be associated with the quality of interim reports.

Research on the quality of corporate disclosure was conducted in several ways. Research studies have used earning variability or persistence, forecast accuracy and bias, predictability of future performance and content quality as proxies for disclosure. The quality measurement tool used for each of these research studies also varies from best annual report content, Association of Investment Management Research (AIMR) rating, auditor type checklist, Standard and Poor measurement, market reaction, and disclosure index approach. Content analysis with index of disclosure methodology is widely used in most of the disclosure studies.

Measuring the quality of interim reporting has been approached in a number of different ways in the literature. The quality of interim financial disclosures is either measured in terms of the

¹³ ‘Settling up’ in the fourth quarter refers to the practice whereby managers use the fourth quarter to perform the adjustments related to the first three quarters.

extent of disclosure (Robb, 1980; Schadewitz & Blevins, 1998; West, 1998), compliance with the disclosure regulations (McEwen & Schwartz, 1992; Samantha & Greg, 1997; Short & Palmer, 2003), or timeliness (Leftwich *et al.*, 1981; Robb, 1980). However, Robb integrated content of disclosure and timeliness in his measure of disclosure quality.

3.3 Compliance with the disclosure regulation

In 1910, the New York Stock Exchange (NYSE) advocated the preparation of interim statements (Taylor, 1965). In 1946, the Securities and Exchange Commission (SEC) required public listed companies to issue quarterly reports in response to the demand for more timely reports by external investors. Nine years later, companies were required to prepare unaudited income statements on a semi-annual basis to be filed on form 9K under the SEC's jurisdiction (Taylor, 1965). In 1962, the American Stock Exchange changed its listing requirements to require listed companies to publish quarterly income statements. Ultimately, in 1973, the Accounting Principles Board got into the act by issuing Opinion No 28, also known as APB No 28. Since the 1960s, interim reports have received considerable attention from researchers. A survey conducted by Waldron (1961) provided evidence that a number of British companies prepared half-yearly reports, while four large firms published simple quarterly profit statements. Three of these four companies had majority shareholders from America. This shows that interim reporting has been recognised as an important means of communicating information about company performance. The Waldron study argued the advantages and disadvantages of interim reporting and is descriptive in nature.

Taylor's (1965) research was one of the earliest studies in the USA to investigate interim reports. Six hundred companies were studied to determine the trend in and techniques used in publishing interim reports. His work is basically descriptive with no hypotheses tested. Taylor categorised the content of the interim report into income statement, balance sheet, textual material, and others. First, he found that the most common statement prepared by these companies was the income statement, and that 97% of them published comparative figures. In addition, 40% of the companies studied published both cumulative and quarterly figures. Second, Taylor reported that only 20% of the reports contained balance sheets with 78% publishing comparative figures. He explained that the low level of disclosures was due to the fact that the balance sheet was not required by all stock exchanges, or the SEC at that time. Third, textual materials were reported to contain the greatest level of variation, with more than 60% of the companies forecasting future income, and using textual material to explain the interim results. Taylor also discovered that management had a desire to change and improve their interim reports by suggesting that they change from semi-annual to

quarterly reporting, and from reporting to only the financial press to reporting to both the financial press and the stockholders. It can therefore be seen that the early studies of interim reporting were basically descriptive with no hypotheses testing.

Holmes (1971) carried out a survey on interim reports issued by the top 100 UK companies, where quarterly reporting is voluntary, to determine trends in published interim reports. His study can be considered as the most comprehensive empirical study on interim reporting during that time. Several findings are of particular interest. He provided evidence that a number of companies do not prepare either half-yearly or quarterly statements, with few companies publishing quarterly reports. Distribution methods also differed among companies, with newspaper or direct mail to individual shareholders being the most widely-used method. He also found that a large number of companies emphasised problems associated with the interpretation of half-yearly results, and that a large number of disclosures in the interim reports were very brief. In fact, none of the companies suggested that quarterly or half-yearly report figures could be used to provide moving annual totals. A closer inspection of 29 income statements revealed that the information disclosed was not consistent among companies. The most common items disclosed were total sales, total operating profit before tax, total tax, profit after tax, minority interests, and profit applicable to the holding company. Holmes also conducted interviews with officials of some of the companies to gain insight into why companies were not prepared to issue quarterly reports. The officials expressed concerns over the usefulness of quarterly reports, saying that issuing a quarterly statement would be misleading when their business was seasonal in nature.

Lipay (1972) conducted a study to determine interim reporting practices. Lipay sent 4000 questionnaires to the active members of the Financial Executives Institutes (FEI) in the US, and obtained 1214 (30.4%) responses. Looking at frequency, 91.3% of the respondent companies published their interim reports on a quarterly basis, followed by semi-annually (5.3%) and monthly (3.45%). With respect to reporting lag, the majority of the quarterly reporting companies took between eight and 28 days to publish their reports. The study also indicated that most respondents put greater emphasis on the presentation of the income statement as compared to presentation of balance sheet. However, the study noted that only 35% of the respondent companies published complete income statements. The comprehensiveness of the items published in the income statements varied, with the most prevalent income item reported being the amount of sales (or revenues), “net income before extraordinary items and taxes”, “extraordinary items”, “earnings per share”, or combinations of these. As for the balance sheet, only 19% of the companies provided a complete balance

sheet, with the majority disclosing only some specific balance sheet items, such as total current assets, property, plant and equipment, total current liabilities, long-term debt, stockholders' equity, and common shares outstanding. Other than these two statements, 6% of the companies published the statement of financial position and 4% disclosed forecast information. In addition, some companies provided segment information either using segment sales figures or segment net income figures. Other information such as an order backlog report, capital expenditure, new business, capital reconciliation, and production output were also presented by some of the companies.

Edwards *et al.* (1972) undertook a research study sponsored by the National Association of Accountants (NAA) with the objective of contributing towards the improvement of interim reporting. They interviewed users, specifically professional investors and creditors, as well as preparers, to determine the uses of interim reports. The interim reports of UK companies covering the 1968 and 1969 fiscal years for 250 companies were analysed. It was observed that the New York Stock Exchange (NYSE) and the American Stock Exchange (ASE) had made significant contributions to the increase in interim reporting. In other words, the changes made in the listing requirement witnessed a significant growth in the volume of such reporting. Nevertheless, this study suggests improvements for interim reporting, such as reducing the delay in publishing interim reports and greater disclosure including the provision of comparative data in the financial statements, forecast income statement data, a financial narrative section, and a statement by management in order to enhance the usefulness of such reports. Their major findings from the interviews include the following points:

- Interim reports were found useful since the interim reports are used in their analysis, although such reports did not usually represent the most important source of information.
- The study did not support the single purpose theory that interim reports are used to predict current year results. Instead, the respondents indicated that interim reports are used to forecast results for quarters in current and future years, as well as to forecast current and future annual results.
- The analysts complained that interim reports lack detail because of over-condensation. In order to better forecast annual results, they require not only sales and net earnings figures, but also the cost components such as cost of sales, and depreciation, research, advertising and interest charges. In addition, earnings before tax, extraordinary items, prior period adjustments, accounting policy changes,

product-line breakdowns, and forecasts by management would also be desirable. Other necessary information includes disclosure of balance sheet and funds flow information.

- The findings revealed that the analysts ranked textual materials second in importance to income statement data. However, many providers of interim reports interviewed did not favour the reporting of information about the prospects of the company. They contended that it was the responsibility of investors to develop their own expectations.
- The interviewees agreed with the position that the same accounting principles that govern annual reporting should be applied to interim reporting.

Beresford and Rutzler (1976) investigated the impact of the new SEC rules, the Accounting Series Release, ASR No 177, on quarterly reporting. ASR No 177 expands the requirement of Form 10Q quarterly reports to include the disclosure of current and comparative balance sheets, an income statement, the statement of changes in financial position, and the management's narrative. They examined the interim reports sent to shareholders for the first quarter of 1976, as well as Form 10Q quarterly reports that had been submitted to SEC. Their findings revealed that Form 10Q was found to substantially comply with the new requirements of SEC, though the incidence of explanatory disclosures was limited. The variation in the content and number of footnote disclosures suggested that more definitive guidelines might be necessary.

Maingnot (1982) observed and compared the disclosure pattern for interim reports with the minimum information prescribed by the London Stock Exchange (LSE). This study was carried out on 37 and 43 interim reports of UK companies for the years 1975 and 1979, respectively. The findings are divided into three sections: financial information, notes to the financial information, and ancillary information. For the first section, Maingnot concluded that there was no significant difference in disclosure, and companies tended to comply with the minimum disclosure requirements of LSE for both years. The pattern of disclosure implies that more disclosures were made in the latter year. For the notes to the financial information, the author highlighted that seven companies in 1975 and nine companies in 1979 did not state that the interim reports were unaudited. The majority of reports gave dividend information that shows an increase in the dividend paid. This section also reported no discussion centred on the sources and applications of funds, and no comments were made regarding the balance sheet. As for ancillary information, the study found that no company released its information

before week six in 1975. However, the ancillary information became available by week four in 1979.

McEwen and Schwartz (1992) conducted a study in the U.S. to investigate whether firms comply with the disclosure requirements specified in APB Opinion No 28 *Interim Financial Reporting*. A total of 76 firms for the year 1989 were the subject of this study. Specifically, the interim reports were examined for compliance with the minimum disclosure requirements for the following items: (i) sales or gross revenue, (ii) provision for income taxes, (iii) net income, and (iv) other required disclosures. They found that firms do not disclose all the information required by APB Opinion No 28. The higher compliance among these items can be found in “seasonal revenues, costs or expenses” and “primary and fully diluted EPS” under categories (i) and (iii), respectively, and the researchers concluded such non-compliance diminishes the usefulness of interim reports. They further suggested that auditor involvement and stricter enforcement are important for greater compliance, thereby enhancing the usefulness of the interim report. The study also reported that the extent of compliance with some of the disclosure requirements was difficult to determine from the reports. They noted that because of difficulties in distinguishing between possible non-compliance and unavailability of information, they were unable to conclude that firms do not disclose all of the information required. For example, the researchers had difficulty determining whether firms that failed to indicate seasonal operations did not have seasonal activities or were not complying with the disclosure guidelines. McEwen and Schwartz also performed the Friedman test to determine and compare the pattern of revenues for each firm. They discovered that the revenues were not constant from one quarter to another, and that the mean rank of revenue in the fourth quarter was significantly greater than the revenues in the other three quarters. Although the difference might be attributed to industry or economic factors, it was suspected that at least some of the firms might not be complying with APB Opinion No 28.

On behalf of the Institute of Chartered Accountants in England and Wales (ICAEW), Lunt (1982) undertook a comprehensive study of interim financial reporting in the UK. One part of his study was to examine interim reporting practices of a stratified random sample of 100 UK companies, selected from the Times Top 1000. A total of 50 companies were taken from the top half of the Times 1000 and the rest from the bottom half. They were classified as ‘large’ and ‘small’ groups, respectively. Lunt also took a further random sample of 17 non-industrial companies that covered banks, insurance and property companies, giving a total of 117 sample companies. The companies were asked to supply their most recent interim reports,

subsequent annual reports, and preliminary profit announcements. Lunt did not make any attempt to measure the overall disclosure for each company or apply any statistical test to measure whether there were any significant differences between companies, as had been performed in other disclosure studies. He believed that it is very subjective to determine the relative importance of each item, and smaller companies might have less relevant information to disclose. He found that most of the companies complied with the minimum requirement of the Stock Exchange in disclosing the income statement, though not all companies disclosed information that was required in the half-yearly reports. He also made a comparison between small and large companies, and revealed that disclosures were greater for larger companies for most of the items. Lunt also reported that there were a number of problems in establishing non-compliance. For some items, such as extraordinary items, non-disclosure may not represent non-compliance, but merely that the company did not have such an item at the half-year stage. For example, the greater amount of disclosure found for overseas taxation in the annual reports suggests that the information that ought to be disclosed in the interim report was not disclosed.

In Canada, Lambert *et al.* (1991) formed a study group sponsored by the Canadian Institute of Accountants (CICA) to review Section 1750 of the CICA Handbook, *Interim Financial Reporting to Shareholders*, to determine if changes in the Handbook were needed. They summarised their findings “Spotlight on Interim Reporting”. A survey of interim financial reports of 150 Canadian companies for the years 1989/1990 were used in this study. More than 100 types of interim data were analysed, including management reports to shareholders, operating summaries, and individual statement items. The research report addresses four major issues of interim reporting, namely, applicability, presentation and disclosure, measurement and recognition, and other matters. The study group concluded that the companies present much more information than that required by the Handbook, so they recommended that regulations be raised or amended to the level of current reporting practices.

Following the recommendations made by the Cadbury Report (1992) concerning interim information on balance sheets and cash flow statements, a working party was formed by Coopers and Lybrand to survey and examine the interim reports of the UK companies (Coopers & Lybrand, 1992). A total of 168 of the top UK companies were selected for the survey. The working party reported that the level of disclosure was still low for non-mandatory items, and that larger companies provided more disclosure than their smaller counterparts, particularly where the balance sheet, cash flow statement, segmental reporting and the notes were concerned. In this study, compared with the one undertaken by Lunt

(1982), there was an increase in the disclosures of balance sheet and cash flow information. These findings led to a proposal for the Accounting Standards Board (ASB) to include the balance sheet and the cash flow statement as a requirement in its standard on interim reporting.

Frost and Pownall (1994) have examined differences in interim disclosure practices between the UK and the USA by comparing the frequency and timing of accounting disclosures made by foreign and domestic firms listed in the USA and in the UK. They also investigated the influence of selected firm characteristics on disclosure practices between these two countries. Their samples were based on the periodic disclosures of 107 firms from 13 domiciles with equity securities traded on the USA and/or the UK exchanges during 1989. This research expands the international accounting literature on voluntary disclosures by extending the definition of accounting disclosures to include annual financial statements, interim reports, and media disclosures. The findings revealed inadequate compliance for both mandatory and voluntary accounting requirements and cross-jurisdictional disclosure for annual and interim reports for both countries. It was found that compliance disclosures in the USA were more frequent, and there was a shorter reporting lag as compared to the UK; but these differences can be explained by the different disclosure rules that apply to each country. Finally, the study also found that disclosure frequency is positively correlated with firm size, exchange listing, and domicile.

Hussey and Woolfe (1994) examined the disclosure and timeliness of interim reports of 61 UK companies that were reported in the Financial Times, and 223 interim reports that were sent to shareholders, in order to determine whether they complied with London Stock Exchange requirements. Generally, disclosures made are related to the profit, and the amount of information provided was extremely modest. Of the reports issued to the shareholders, 21% contained a balance sheet, and only 3.6% contained a cash flow statement. Overall, only a small percentage fully complied with the requirements.

The earlier study of interim reporting discussed above is only descriptive, and no hypothesis was tested. Therefore, during that time, no conclusion can be made to determine to what extent an individual company disclosed, or tried to associate it with some company attributes, although the information had been gathered. However, later research has conducted some hypotheses testing, and provides more insight into the nature of interim reporting.

In another study, Hussey and Woolfe (1998) compared the timing and reporting practices of interim reports for the UK companies prepared in 1992 and 1997. Analysis of variance

(ANOVA) and chi-squared test were employed in this study. The authors reported that there was a substantial growth in the publication of an auditor's review report in the interim report, although the review was not mandated in the UK. They also found that there was a substantial increase in voluntary information disclosed in the interim reports, particularly with regard to the balance sheet, cash flow statement, and total recognised gains and losses. Hussey and Woolfe also investigated the relationship of the presence of an auditor's review report in the interim report with four company attributes, namely, size, industry, reporting lag, and the publication of voluntary information. The results indicate that the presence of an auditor's review report is likely to be directly associated with the size of the company and the amount of voluntary information it disclosed. However, the type of industry has no influence over the publication of an auditor's review reports, and there is no evidence that the work involved in preparing the audit review would delay the release of the interim reports.

Tan and Tower (1997) examined the half-yearly reports issued by 89 Australian and 97 Singaporean companies to evaluate and determine the factors that explained the compliance for interim reporting practices. The statistical tools of ANOVA and t-test were employed, and a disclosure index based on financial statement and other information was established. The findings revealed that Singaporean companies had a higher level of compliance as compared to their Australian counterparts, although the Australian Stock Exchange (ASX) had a higher standard of disclosure. A closer examination of specific accounting requirements for both countries was also carried out. It was found that none of the items investigated had a similar level of compliance between Australian and Singaporean companies. For instance, in Australia, 33.7% of companies did not comply with the requirement to have a commentary by directors, whereas all Singaporean companies complied with this requirement.

West (1998) carried out a disclosure study of 40 interim reports for five leading sectors of the industry (excluding mining and insurance) for listed South African companies. The interim reports of the four largest and the four smallest companies from each of the sectors for 1995 to 1997 were studied. The overall disclosure levels for each company were measured using a disclosure index model with respect to the Companies Act and the Johannesburg Stock Exchange (JSE) Listing Requirements. They were also scored for their disclosure with respect to IAS 34, *Interim Financial Reporting*. This study hypothesised that the level of disclosure varies with the type of industry and size of the company. The ANOVA test performed on the type of industry and company size revealed that there was some variation in the level of disclosure. It is obvious that the disclosure level of commercial banks was significantly different from that of companies in other sectors. The study also concluded that the disclosure

levels for the four largest and the four smallest firms were significantly different within each industry. This study however, does not reveal the mean disclosure for each group under study, and therefore was not able to indicate the direction of these differences. It does not reveal whether banks have better disclosure as compared to other companies, or large firms have better disclosure as compared to small firms. In other words, it is not known where the differences lie.

Bagshaw (1999) performed a survey of 30 of the Financial Times Stock Exchange (FTSE) 100 UK companies to investigate interim statement disclosure practices. The interim statements inspected were dated between 30 June 1998 and 30 November 1998. With regard to the interim statement inspected, at least one primary statement was produced, in addition to the income statement required by the UK Listing Rules. It was noted that there were also wide variations in the volume and nature of narrative disclosures. The content of the interim reports have become lengthy and more detailed than before. It was also noted that 70% of the FTSE 100 involved their auditors in the publication of their interim reports.

More recently, Ku Ismail and Chandler (2005a) examined the extent of disclosure in the quarterly reports issued by Malaysian listed companies. The quarterly reports (to 30 September 2001) of 117 companies were the subject of this study. The study firstly observed the level of compliance of overall disclosure with respect to the Listing Requirements of KLSE. It then observed the extent of narrative disclosures with respect to comments on material changes, review of performance, and current year prospects. Next, the extent of disclosure was tested for association with profitability, growth and leverage of the company. Generally, the companies disclosed all the mandatory financial statements and relevant notes to the accounts, but the extent of mandatory narrative disclosures varied. Overall, the companies appeared to provide a minimum level of required disclosures.

Mangena and Taurigana (2007) examined the efficacy of agency-related mechanisms on the degree of disclosure compliance with the ASB Statement on interim reports under a voluntary environment. The conclusion was drawn using 259 interim reports issued by companies that were listed on the London Stock Exchange for the years 2001 and 2002. Three disclosure indices were produced, namely, an overall disclosure compliance index, a narrative disclosure compliance index, and a financial statement disclosure compliance index. The findings of the study show that although overall disclosure compliance is high with 74.5% of the items of information being disclosed, there are companies that do not fully comply with the ASB Statement on interim reports. This shows that “full compliance may not be attainable without appropriate regulations” (Mangena & Taurigana, 2007, p419).

From the above discussion, it is important to note that an effective enforcement mechanism is needed to improve company compliance with the relevant regulations. In addition, reporting regulations that have clear guidelines about interim reporting do enhance the quality of disclosure. Therefore, enforcement bodies should ensure that all companies understand the regulations concerning interim reporting. However, it should also be noted that some companies choose to report the minimum amount of information that is required. Such companies comply with the reporting regulations, but it poses the question as to why they would do this if the objective of having interim reports is to provide more information to investors and to help resolve transparency issues.

3.4 Timeliness

Timeliness can be defined as having information available to decision makers before it loses its capacity to influence decisions (Ku Ismail, 2002). This is important for users who need timely information to ensure they do not make decisions based on out-of-date information. For users, the failure to disclose information in a timely fashion would result in the inefficient allocation of resources. In 1954, the American Accounting Association observed that “timeliness of reporting is an essential element of adequate disclosure” (Dyer & McHugh, 1975, p204). Timeliness can be measured using frequency of reporting or the reporting lag. *Frequency of reporting* refers to how frequently interim reports are required to be issued, such as monthly, quarterly or half-yearly. Most of these studies were carried out under a voluntary disclosure environment and were market-based research studies. *Reporting lag* refers to the time taken before the interim report is published, measured as the number of days after the end of the (interim) reporting period. Most of the disclosure studies on the timeliness of interim reporting focused on the reporting lag, which will be discussed in the following section.

3.4.1 Reporting lag

Robb (1980) incorporated two factors that measure the quality of information in a report: the timeliness of the report, and the financial data disclosed. In his study of 40 New Zealand companies, Robb associated the quality of interim reporting with different sectors within which the companies operated. He found that companies in the finance sector issued the highest quality of half-yearly reports, while those in the manufacturing and service sectors seemed to have the lowest quality of reports. Robb posited that quality (Q) is a direct function of the extent of content of the reports (C) and an inverse function of the reporting lag (T), where $Q=(1/T)+ C$. In determining the level of content, only five items were considered:

sales, cost of sales, profits, certain balance sheet items, and directors' comments. A weighted disclosure method was used to determine the level of content with scores divided into four levels between 1 and 4, ranging from complete and comparative, ratio change, non-quantified, and no disclosure. He used the mean and standard deviation as statistical tools to measure the quality of information.

Lunt (1982) carried out a survey on the reporting lag of half-yearly interim reports issued by UK companies. He found that the interval between the end of the reporting period and the reporting date was between 61 and 90 days, with an average of 72 days. As for reporting lag, he found no statistically significant difference between the small and the large companies, even though the latter have to gather more information in order to prepare their reports. However, large companies tend to have more sophisticated information systems, which would reduce the amount of time needed to prepare the financial reports. Moreover, non-industrial companies produce their interim reports more quickly than industrial companies.

A similar survey on the reporting lag of the UK companies was conducted by Coopers and Lybrand (1992) ten years later, and they found that the average time lag had improved to 53 days. This is 67 days earlier than the allowable time of 120 days. In another study of the UK environment by Hussey and Woolfe (1998), it was found that more companies in the UK were issuing interim reports within 90 days in 1997 than in 1992. The average reporting lag improved from 68.7 days in 1992 to 62.4 days in 1997. The difference in results between the Coopers and Lybrand (1992) study and the Hussey and Woolfe (1998) study could be due to different samples being used. However, it is noted that the reporting lag reported by Hussey and Woolfe is close enough to the 60 days recommended by the ASB Statement, *Interim Reports*, that was issued in 1997 (Ku Ismail, 2003, p127).

Al-Bogami (1996), in his thesis entitled "*An examination of the usefulness of interim financial statements to investors in the Saudi Stock Market*", examined the timeliness of quarterly reporting by Saudi Arabian companies for the years 1987 to 1991. His study revealed that companies, on average, published their fourth quarter report and their first three-quarterly report within 108 days and 50 days after the quarter ended, respectively. He reported that the variation in reporting times was related to the industry sector within which the company operates. Agricultural companies had an average lag of 66 days, which was the maximum time lag during the five-year period. On the other hand, for all years, the banking sector was faster in issuing interim reports, compared to firms in other sectors. The banking sector took an average of 16 days to publish the reports for quarters one to three, while it took 64 days for the fourth quarter.

Ettredge *et al.* (2000) examined the earning release lag, namely the quarterly and annual reporting lags of companies with “timely reviews” or “retrospective reviews”. Under timely reviews, the quarterly reports have to be reviewed by the auditor at the end of each quarter. A retrospective review is where the review of the quarterly reports is deferred until the year-end audit. Ettredge *et al.* hypothesised that a change in earning release lags would occur when companies switched from retrospective reviews to timely reviews. A total of 331 companies were used in this study, and 114 companies were subjected to retrospective reviews covering a period from 1987 to 1989. The remaining companies had timely reviews. Their findings support the allegation made by opponents of the SEC regulation on timely reporting, who argued that timely reviews would increase the release of quarterly information. The study also indicated that the quarterly lag will increase about three days on average for companies switching from a retrospective review to a timely review.

Bagshaw (1999) studied timeliness issues among Financial Times Stock Exchange (FTSE) companies, and found that 67% of companies issued interim reports within 60 days of the end of the reporting period, as recommended by the ASB. The remaining 33% prepared their reports within the four-month period permitted by the Stock Exchange. This significant improvement from the previous surveys indicates that companies would have no difficulty in issuing their reports within 60 days if the Stock Exchange requirements were to be tightened.

Another timeliness study was undertaken by Annaert *et al.* (2002) of 64 Belgian companies from 1991 to 1998. The objective was to examine the relationship between the content of reports and the timeliness of earnings announcement. The content of the news was classified as good or bad and a chi-squared test was employed to analyse the data. They found no evidence to confirm that bad news is reported faster than good news. The authors also found no significant market reaction between good (bad) news that is reported earlier or later than expected. They also found that the reporting lag for Belgian companies was on average 57 days although the maximum allowable period was four months.

The timeliness study by Ku Ismail and Chandler (2004) examined the timeliness of quarterly financial reports published by Malaysian listed companies. An analysis of 117 quarterly reports ended on 30 September 2001 revealed that all companies except one, reported within the allowable reporting period of two months. On average, companies took 56 days to release their reports.

3.4.2 Reporting frequency

Leftwich *et al.* (1981) examined the frequency of interim reporting, and analysed reasons why companies chose a particular reporting frequency. They also investigated the economic incentives for managers to voluntarily provide interim reports. Data from 1948 were used to investigate the cross-sectional variations, while data from 1937 and 1948 were selected to observe the time series variation. Such data were used because interim reporting was provided voluntarily during the period. The study explored the incentives for voluntary disclosure as suggested by agency theory. Differences in capital structures, assets structures, and choices of other monitoring devices were predicted to influence the frequency of reporting. Specifically, this study proposed that reporting frequency is associated with ratio of assets in place, size of the firm, and leverage ratio of debt, leverage ratio of preferred stock, use of outside directors, reporting frequency ten years beforehand, and stock exchange listing. The same variables were also used by the researchers to analyse the time-series variations, and they proposed that the change in the frequency of external reporting is a function of the changes in those variables. A probit probability model and an ordinary least squares regression model were used to test their hypotheses. Although their results were not strong, they found that:

- a) Firms listed on the New York Stock Exchange (NYSE) in 1948 reported more frequently than firms listed on the American Stock Exchange (ASE);
- b) Firms that changed listing from other exchanges to NYSE or from other exchanges other than NYSE to ASE in the period 1937 to 1948 were more likely to increase their frequency of reporting in that period; and
- c) The reporting frequency of firms listed on the NYSE in 1948 was significantly associated with their reporting frequency in 1937.

Hemmer and Gigler (1998) investigated the relationship between three attributes of the financial reporting regime: the frequency of mandatory financial disclosures, the amount of information voluntarily disclosed by privately informed managers, and the resulting informational efficiency of stock prices. They hypothesised that the level of voluntary disclosures will decrease if more firms are required to report more frequent interim reporting. This eventually will lead to an increase in disclosure cost. They concluded that increased earnings timeliness is not associated with increases in reporting frequency, especially when such changes are non-discretionary. In another study that reported similar findings, Butler *et al.* (2007) examined the way interim reporting frequency affects the timeliness of earnings. A sample of 28,824 reporting frequency observations from 1950 to 1973 were used in this study.

They concluded that there is little evidence to support the claim that “firms forced to adopt more frequent financial reporting policies are likely to improve their earnings timeliness as much as firms freely choosing to report more frequently” (Marty *et al.*, 2007, p214). Butler *et al.* (2007) reported that firms that voluntarily increased their reporting frequency from half-yearly to quarterly experienced an increase in timeliness. However, firms whose increased reporting frequency was mandated by the SEC did not experience an increase in timeliness. Even though the study is controlled by self-selection, there is little evidence of differences in either intra-period or long-horizon timeliness between firms that report quarterly and those that report half-yearly. The study also found that bad news is recognised more quickly under increased reporting frequency for the voluntary environment from half-yearly to quarterly, but experienced no change in the timeliness of good news recognition.

The study conducted by Werner and Mensah (2008) empirically investigated the association of the frequency of interim financial reporting with stock price volatility. This study was carried out in the US and Canada (where quarterly reporting is required), and Great Britain and Australia (where half-yearly reporting is required). As expected, the trade-off between timeliness and the predictive value of the interim reporting will lead to lesser price volatility for half- yearly interim reporting after accounting for other potential influences.

From the above timeliness literature, it appears that most countries are able to produce their interim reports within the allowable timeframe. It also appears that the regulatory body in each country is efficiently monitoring compliance with submission deadlines. However, there are companies which tend to delay producing their reports until the end of the allowable submission period. Is it because the time given is not sufficient for companies to produce interim reports, or is it just a matter of delaying since companies have other things to do? The answers to these questions should be relevant to regulators, since interim reports provide important information to investors.

3.5 The determinants of interim reporting disclosure

In the US, Chambers and Pennman (1984) conducted an analysis of interim and annual earnings for 100 randomly selected NYSE firms over the seven years between 1970 and 1976. They provided descriptive evidence of the relationship between the timeliness of reported earnings and stock price behaviour surrounding the interim and annual earning release using an analysis of the pooled cross-sectional and time series data. Their study also attempted to determine the association between the reporting lag and firm size. They concluded that there is no significant relationship between reporting lag and the variability of stock returns

associated with interim and annual earnings release. Some of the findings of this study are as follows:

- a) There is an inverse relationship between firm size and reporting lag.
- b) There are smaller price reactions to the earnings reports for large firms as opposed to small firms.
- c) Timely interim reports of small firms which bring good news are associated with higher price reactions than are those with longer lag times. This is not observed for reports revealing bad news or reports for relatively large firms.
- d) Reports that are published before the dateline tend to have larger price effects than when they are published on time or later than expected. Therefore, the authors characterised unexpectedly early reports as showing good news, whereas unexpectedly late reports tended to bear bad news.

Bradbury (1991) examined the association between corporate characteristics and the disclosure of semi-annual earnings in an unregulated environment. His sample of 158 New Zealand firms was chosen from the period 1973 to 1976. This study incorporated methodological refinements suggested by Leftwich *et al.* (1981). Bradbury focused on an index of the level of interim disclosure rather than reporting frequency, as used in the Letwich *et al.* study. He established that there is a significant association between the level of interim earnings disclosure and the payment of an interim dividend. In other words, firms that pay interim dividends also have higher levels of interim disclosure, but this association is not significant in the Letwich *et al.* study. Bradbury also found that firms with high half-yearly earnings disclosures have more shares issued, have paid an interim dividend, carry less inventory, are in a more seasonal industry, and have greater earnings forecast errors.

In another study, Bradbury (1992) examined the interim earning disclosures of 172 New Zealand companies that voluntarily reported semi-annual earnings during 1973 to 1976. The study also investigated the relationship between interim earnings disclosures and earnings volatility, unexpected earnings and firm size. As predicted, there is no association between the levels of voluntary semi-annual earnings disclosures and earnings volatility. The study also reported that non-quantified interim disclosures are more prevalent for firms with larger annual forecast accuracy. For the wholesale sector, a greater incidence of 'quantified' interim disclosures (announcements which contained point estimates of earnings) can be found and was significant at the 0.01 level. However, companies in the financial, construction and other

manufacturing industries had a greater incidence of quantified interim disclosures at the 0.05 significance level, which reveals that there may be industry differences in the amount of information disclosed by these companies. Finally, the study concluded that firm size does not appear to affect the level of disclosure.

Ettredge *et al.* (1994) investigated the reasons that motivate companies to voluntarily purchase timely reviews for their quarterly data. Purchases of timely reviews mean the company hires an auditor to review the quarterly reports at the end of each quarter. The researchers also assessed the role of internal and external agency costs in motivating companies to purchase timely reviews. A sample of 371 timely reviews was used for the period 1987 to 1989. This study hypothesised that companies contracting for timely reviews are seeking a higher level of monitoring because of higher internal and external agency costs. Ettredge *et al.* concluded that companies with higher external and internal agency costs are more likely to purchase timely reviews. The result also indicated that timely reviews contribute to a higher level of monitoring by external accountants as opposed to retroactive reviews. Purchase of timely reviews is also positively associated with company size, issuance of securities, and financial leverage, but is negatively associated with the percentage of common stock owned by managers and directors.

Another study was carried out by Schadewitz and Blevins (1998) in Finland, where interim reporting is mandatory. They investigated the disclosure level of interim reports of the Helsinki Stock Exchange (HSE) companies during the period 1985 to 1993. The study also determined company attributes that are associated with the level of disclosure. A sample of 256 interim reports covering industries (except finance and insurance companies) was used to develop a disclosure index from items found in the interim reports submitted to HSE. This study developed a new measurement system for dichotomous procedure as 0.0/0.5/1.0, where a score of zero was given for non-disclosure, a score of one was given for full disclosure, and a score of 0.5 was given for anything in between. The disclosure index was regressed against 29 independent variables (classified under the eight company variables and maturity of the stock exchange) to determine the association. This study provides evidence that Finnish interim disclosures are positively associated with business risk, capital structure, company size, and market maturity. The study also supported the hypothesis that disclosure is inversely related to governance structure; specifically, the greater the institutional concentration of ownership of Finnish firms by other firms, the lower the degree of interim disclosure. Market risk, stock price adjustment, growth and growth potential variables appeared not to have any significant influence on interim disclosure.

Tan and Tower (1999) have used a compliance index to examine compliance practices of Australian and Singaporean listed companies. They found a significant country-effect on the half-yearly reporting compliance practices of these two countries. They further tested the association of three other variables (namely, industry type, company size and debt leverage) on compliance practice. A total of 186 half-yearly reports were examined for the two-year period from 1995 to 1996. The result of independent sample t-tests revealed that the compliance level of Singaporean companies was significantly higher than their Australian counterparts. Debt leverage and total assets were also shown to be significant in influencing compliance practices for both countries. However, company size and industry type did not show any significant difference in compliance practices between the two countries.

Yee (2004) examined the potential effects of increased interim reporting frequency on several aspects of the capital market using the Kyle model (1985). His findings support the conventional wisdom that more frequent interim reporting improves the information content of securities prices, reduces reporting day price volatility and trading volume, and enhances market liquidity. His primary findings include:

- Increased interim reporting frequency is likely to lead to a reduction in the total spending by analysts (on average);
- Aggregate spending by analysts, however, is likely to increase with an increase in interim earnings reporting frequency;
- An increase in reporting frequency is likely to lead to increased liquidity at the earnings announcement dates; and
- An increase in reporting frequency is likely to lower the price volatility on the earnings reporting dates.

Chen *et al.* (2002) conducted a study to explain why managers voluntarily disclose balance sheet information in quarterly earnings announcements. The analyses were performed on all earning announcements in the Wall Street Journal Proquest database from the fourth quarter of 1992 through to the third quarter of 1995. The study predicted that managers are more likely to voluntarily disclose balance sheet information when current earnings are relatively less informative, or when future earnings are relatively more uncertain. Generally, 52% of the firms included balance sheet earnings announcements. The relative frequency of this disclosure grew from 31% to 46% over the period being analysed. The study also found that balance sheet disclosures were more common among firms in high technology industries,

those engaging in mergers or acquisitions, and those that are younger and with more volatile stock return.

The Ku Ismail and Chandler (2005a) study also tested the association of the extent of disclosure with profitability, growth and leverage for quarterly reports (to 30 September 2001) of 117 companies. This study revealed that only leverage has an influence on the extent of disclosures. No significant association was found between the extent of disclosure and profitability and growth of a company.

Boritz and Liu (2006) employed an ordinary least squares (OLS) regression model to investigate the determinants of the timeliness of quarterly reporting in a Canadian environment. A sample of 266 financial statements in quarter one were used in this study. The study hypothesised that interim financial statements are released more promptly by companies that are in an environment of high transparency, as compared to firms that are in an environment of low transparency. In addition, they predicted that firms with more agency problems were more likely to delay the disclosure of their interim financial statements than firms with fewer agency problems. They also provided evidence that firms that have their financial statements reviewed by an auditor release their interim financial statements in a more timely fashion, as compared to firms that do not have their interim financial statements reviewed by an auditor.

Mangena and Taurigana (2007) empirically investigated the degree of disclosure of compliance with selected company-specific and corporate governance characteristics. They employed an ordinary least squares (OLS) regression model to establish the association, and found a positive association with all the variables tested. Specifically, there is a significant positive relationship between the degree of compliance and multiple listings, company size, interim dividend, and new shares issuance for company characteristics. For the corporate governance variable, their study found that the degree of disclosure compliance is positively associated with auditor involvement, audit committee independence, and audit committee financial expertise.

A more recent study of the determinants of disclosure was conducted by Rahman *et al.* (2007) in Singapore. They examined three issues pertaining to quarterly reporting (namely, benefits, drawbacks and determinants), conducted under a voluntary-disclosure environment with respect to reporting quarterly earnings. Results of their multivariate tests revealed that firms with high growth prospects, large size and having a technology orientation are likely to disclose earnings on a quarterly basis if left to their own discretion. In addition, quarterly

reporting is also found to be associated with higher analyst following on the benefits side. On the drawbacks side the level of disclosure is associated with high price volatility.

Overall, there is inconclusive evidence regarding the association of disclosure indices or timeliness with corporate attributes. The previous studies were conducted against the level of disclosure or reporting lag as dependent variables. However, many studies were conducted on the level of disclosure. They reveal either positive, negative or no relationships at all between disclosure compliance with independent variables such as audit committee, company size, and industry type. As for timeliness, the most common independent variables used were company size and profitability, and the results are mixed. The main reason for such differences could be due to having either a mandatory or voluntary reporting environment. Lastly, the period when the abovementioned studies were conducted also differed. However, this scenario gives more opportunity for researchers to explore this area.

3.6 Summary

A review of past literature indicates that there have been many research studies on quarterly reporting. The main purpose of this chapter is to review disclosure studies of interim reporting that are relevant to this research. Previous studies show that there has been a huge effort to measure the quality of disclosure for interim reporting, but researchers have not provided conclusive evidence as to why their study is superior to others. However, these studies do provide guidance for the way disclosure quality can be measured by looking at the level of compliance with regulation, timeliness, or corporate characteristics that influence the extent of disclosure. Based on this measurement of the quality of disclosure in interim reporting, the literature on interim reporting in this chapter was constructed.

Chapter 4

Conceptual Framework, Variable Identification and Hypotheses Development

4.1 Introduction

This chapter explains the theoretical framework for corporate disclosure that led to the development of the conceptual model that will be employed in this study. It also identifies variables that will contribute to mandatory disclosure practices of interim reporting. Further, it elaborates the literature on the nature and direction of the relationships, followed by the formulation of formal hypotheses for each variable that has been identified.

4.2 Theoretical framework for corporate disclosure

There are several theories for corporate disclosure, as illustrated by Owusu-Ansah (1998, p91) in the following diagram:

Diagram Removed

Figure 4.1 Theories of corporate disclosure

As Figure 4.1 shows, corporate disclosure theories can be divided into two broad spectrums, namely, regulation theory and free market theory. Since the focus of this study is on mandatory disclosure, regulation theory is more appropriate for this study. Regulation theory can be classified into public interest theory and interest group or capture theory, with the latter further subdivided into political scientists' and economists' versions.

Pergum (1965) outlines the regulation term in three ways. First, it is used in a generic sense to mean any form of behavioural control. The second meaning, social regulation, arises from legislative actions designed to limit the freedom of activity of business enterprise. These actions are meant to control the imperfection of the free market system and the failure of economic forces in achieving social objectives. The third, and the narrowest, meaning of regulation arises from controls imposed on monopolistic industries such as transport, communication and public utilities. Usually, they take the form of fixing minimum prices, limiting profits, and restraining discrimination. Generally, its purpose is to correct the perceived deficiencies of the free market system in fulfilling public interest. This is consistent with Wolk *et al.* (as cited in Darus, 2005, p88), suggesting it is necessary to regulate accounting information due to market failure. In other words, regulation is important to correct deficiencies that occur in the capital market. This is consistent with public interest theory views that regulating the disclosure of corporate information would enhance social welfare.

The aspect of the regulatory environment which is a concern of this study, is whether the introduction of mandatory disclosure requirements would enhance the adequacy of interim reporting. Existing literature indicates that companies do not comply with mandatory disclosure requirements unless stringent mechanisms are in place (see Mangena & Tauringana, 2007; Marty *et al.*, 2007; Owusu-Ansah & Yeoh, 2005). Thus, regulation is needed to ensure the adequacy of financial reporting. For this study, 'regulation' refers to disclosure requirements, namely FRS 134 *Interim Financial Reporting* and the Bursa Malaysia Listing Requirement Para 2.22.

Prior literature demonstrates that disclosure practices are motivated by agency-related costs (see Botosan & Harris, 2000; Lang & Lundholm, 1993). Agency theory states that these agency costs arise from the separation of ownership and control in companies (Jensen & Meckling, 1976). In public companies, shareholders appoint the board of directors with the objective of maximising shareholder wealth. Since the shareholders are not participating in the daily operations of the company, management are able to pursue their own interests at the expense of the shareholders (Jensen & Meckling, 1976). Therefore, the shareholders anticipate that managers would attempt to expropriate wealth; as such, they would prefer to enter into a contract in order to protect themselves (Karamanou & Vafeas, 2005) These contracts are costly, and corporate managers have incentives to reduce the costs. Disclosure is one way of reducing the agency problem by bridging the information gap between managers and shareholders (Karamanou & Vafeas, 2005). Thus, from an agency perspective, greater

disclosure can be achieved through best practices reporting statements. This will reduce the agency problem.

4.3 Variable identification and development of hypotheses

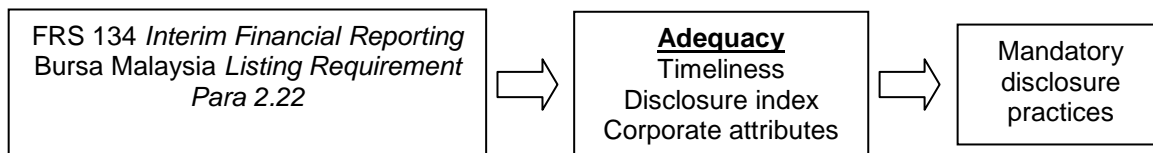


Figure 4.2 Conceptual model

As laid out in the conceptual model (Figure 4.2), this section explains the explanatory variables to be used in this study as determinants of mandatory disclosure. The explanatory variables, also known as independent variables, are formulated into regression equations and an empirical schema for this study. The independent variables will be tested against the dependent variables, namely, the disclosure index and timeliness. The relationship between the independent variables and the dependent variables and a set of hypotheses to be empirically tested is generated in this chapter, while the dependent variables used in this study will be explained in the following chapter.

4.3.1 Hypotheses for testing the mandatory disclosure for interim reporting among Malaysian companies

As mentioned earlier, the dependent variables for this study are the disclosure index and timeliness. The following null hypotheses are formulated and tested against each of the dependent variables in order to answer research question one: *How well do Malaysian companies comply with mandatory disclosure requirements for interim reports as a consequence of implementing FRS 134?* This study hypothesized there is no difference in the mean of timeliness because the disclosure requirement applies to all years and quarters included in the study and to firms in all industries examined in the study, which is why one could expect there to be no difference. In addition, there is a possibility that timeliness may be adversely affected in instances where firms/auditors require more time to prepare/audit financial statements.

a) Timeliness (no of days)

H_{1a} : There is no difference in the means of timeliness across the years for Malaysian listed companies

H_{1b} : There is no difference in the means of timeliness between quarters for Malaysian listed companies

H_{1c} : There is no difference in the means of timeliness between industries for Malaysian listed companies

b) Disclosure index

H_{2a} : There is no difference in the means of the disclosure index across the years for Malaysian listed companies

H_{2b} : There is no difference in the means of the disclosure index between quarters for Malaysian listed companies

H_{2c} : There is no difference in the means of the disclosure index between industries for Malaysian listed companies

In addition to the compliance aspect, the nature of compliance among the companies is also investigated. A pilot test involving the quarterly reports of 10 Malaysian companies for three years (four reports per year), totalling 120 reports, was conducted to determine the nature of compliance based on the disclosure requirements related to *Reporting* and *Listing requirement*. As discussed in Section 1.3, the disclosure requirements for interim reporting are, namely the FRS 134 Interim Reporting governed by the MASB and Listing Requirement Para 2.22 governed by the Bursa Malaysia. Based on the pilot test, this study concludes that total compliance refers to companies that have full compliance with the disclosure requirements. This group will be referred to as Group 1. It is also expected that there will be companies that will not comply with either *Reporting* or *Listing*, or both. These companies will be classified as non-compliant companies and are distinguished as follows:

Group 2 – Companies that comply with *Reporting* but not *Listing*

Group 3 – Companies that comply with *Listing* but not *Reporting*

Group 4 – Companies that do not comply with *Reporting* or *Listing*

Therefore, the following summarises the hypotheses in order to determine if there are any significant differences for timeliness and disclosure index for each group, between groups, across years and quarters.

c) Timeliness (no of days)

H_{1d} : There is no difference in the mean of timeliness between groups for Malaysian listed companies

d) Disclosure index

H_{2d} : There is no difference in the mean of disclosure index for each group for Malaysian listed companies

H_{2e} : There is no difference in the mean of disclosure index between groups for Malaysian listed companies

4.3.2 Hypotheses for testing the association between mandatory disclosures and company attributes

The majority of previous studies that investigated the statistical relationship between disclosure and company attributes concentrated on annual report disclosure, and only a handful of them analysed the interim reports (Darus, 2005). Specifically, the research findings suggested that corporate compliance with mandatory disclosure is influenced by certain company-specific characteristics (Owusu-Ansah, 2005). The most common variables associated with disclosure studies are structure (size and capital structure), performance (profitability and growth), corporate governance, and the culture of the company. The most frequently examined attributes have been corporate size, profitability, capital structure, auditor and listing status (Ahmed & Courtis, 1999). However, this study does not examine the auditor-type because this study is restricted to the largest firms and most of these firms are expected to have Big-4 auditors. In addition, this study also does not include corporate governance characteristics because corporate governance data is normally not readily available and involves a significant investment in time to hand-collect this data. Further, the notion of good corporate governance is subject to varying definitions. Therefore, this research attempts to identify the determinants of interim disclosure study, and only considers five variables (company size, industry, liquidity, profitability and leverage) to be relevant. The following sections discuss each of the independent variables that are hypothesised to be associated with the level of disclosure and timeliness.

4.3.2.1 Hypotheses for testing the association between the level of disclosure and company attributes

Previous studies of the relationship between the level of disclosure and company attributes for annual reports and interim reports were carried out under both the mandatory and voluntary

environments. The following sub-section will discuss the studies that are based on the relationship of the level of disclosure with company attributes, starting with company size and followed by leverage, liquidity, profitability and industry.

4.3.2.1.1 Company size

In previous disclosure studies, company size has consistently been found to be significantly positively related to mandatory and voluntary disclosures in annual reports (e.g. Ahmed, 2001; Cerf, 1961; Cooke, 1989, 1991, 1992, 1993; Street & Gray, 2002; Wallace *et al.*, 1994) and interim reporting disclosures (e.g. Lunt, 1982; Mangena & Tauringana, 2007; Rahman *et al.*, 2007; Samantha & Gregy, 1997; Schadewitz & Blevins, 1998; Tan & Tower, 1999). However, Bradbury (1992) and Leftwitsch *et al.* (1981) (for interim reports) and Ahmet and Serife (2007) (for annual reports) found an inverse relationship between company size and the level of disclosure.

Large firms are known to disclose more for several reasons (Botosan, 1997). Firstly, it has been suggested that large companies tend to engage in more disclosure activities due to economies of scale (Alchian, 1969; Stigler, 1961) and because they depend heavily on the securities market to finance their operations, as compared to small companies (Salamon & Dhaliwal, 1980). In addition, disclosing more information is not so costly for large companies compared to small companies, since they generally have an established database of information. This will enable them to provide any type of disclosure required. In contrast, small companies will most likely incur significant cost in providing the required information.

Even though the literature is in favour of a positive relationship between level of disclosure and company size, the focus of this study is to examine the compliance for mandatory disclosures for interim reporting by Malaysian listed companies. All listed companies, regardless of size, are subject to these requirements. Therefore, this study hypothesises that there is no relationship between the size of a company and the level of disclosure. Consistent with many prior studies, total assets will be used as a proxy for size (e.g. Buzby, 1975; McNally *et al.*, 1982; Samantha & Greg, 1997; Schadewitz & Blevins, 1998). The following null hypothesis tests this relationship in the Malaysian context.

H_3 : There is no relationship between company size and the level of disclosure for
Malaysian listed companies

4.3.2.1.2 Leverage

As financial disclosure is used for monitoring purposes, it is expected that highly leveraged firms would disclose more information in the quarterly reports (Ku Ismail and Chandler,

2005a). This expectation is consistent with agency theory perspectives that argued that as higher monitoring costs would be incurred by firms that are highly leveraged they would disclose more information in their financial reports (Jensen and Meckling, 1976). However, previous evidence shows that the relationship between level of disclosure and leverage is inconclusive. This mean finding of the previous study is not in line with the prediction of agency theory. For example some studies showed a significant positive relationship, such as those of Ahmed and Courtis (1999) and Hossain and Adam (1995) for annual reports, and Schadewitz and Blevins (1998), Tan and Tower (1999), and Ku Ismail and Chandler (2005a) for interim reports. Other annual report studies, such as those of Chow and Wong-Boren (1987), Ahmed and Nicholls (1994), and Wallace (1994) found no relationship. In addition, Meek *et al.* (1995) found a negative relationship between leverage and the level of disclosure. Because of these mixed results, this study does not predict any relationship between leverage and the level of disclosures. Consistent with measurements used by Naser (1998) and Schadewitz and Blevins (1998), the gearing ratio (long-term debt/total equity) is used to measure leverage

H_4 : There is no relationship between leverage and the level of disclosure for Malaysian listed companies

4.3.2.1.3 Liquidity

Liquidity is related to the going concern status of the company. From the audit point of view, going concern period refers to the period from the date of the financial period being audited to the next financial accounting period. If the going concern issues are related to signalling theory, a company that has suffered losses will tend to delay the submission of the interim report, or perhaps not produce the interim report at all, in order to protect its reputation. Companies will be more willing to make disclosures in their annual reports if they are able to meet their short-term obligations without having to liquidate their assets (Belkaoui & Kahl, 1978; Wallace & Naser, 1995). The studies of Owusu-Ansah (2005) and Belkaoui and Kahl (1978) are among those that support the hypothesised relationship between disclosure and liquidity. However, Wallace and Naser found no relationship. Given these mixed results, this study hypothesises that there is no association between liquidity and the level of disclosure. Liquidity is measured using the quick ratio.

H_5 : There is no relationship between liquidity and the level of disclosure for Malaysian listed companies

4.3.2.1.4 Profitability

It can be assumed that companies with a good reputation in terms of their bottom-line will willingly disclose mandatory information items in their annual reports. As argued by Cerf (1961), this is a benchmark for management in terms of their performance, and as such, the management of profitable companies are more likely to disclose information to support their positions and the performance-related compensation schemes that may be due to them. Further, Singhvi and Desai (1971) argued that higher profitability motivates management to provide greater information because it increases investor confidence, which in turn increases management compensation. The main reason companies are motivated to provide disclosures is because of the regulation requirement. This is consistent with the discussion in the liquidity section. Indeed, Lang and Lundholm (1993) noted that the association of profitability level and disclosure can be increasing or decreasing, depending on their performance.

Previous studies show mixed results on the association between disclosures and profitability. While a significant positive relationship was observed (for instance, by Singhvi (1968), Wallace *et al.* (1994), Owusu-Ansah (2005) and Ahmet and Serife (2007) in annual reports studies, and Tan and Tower (1999) in interim reports studies), no such relationship was reported by McNally *et al.* (1982), Belkaoui and Kahl (1978), Wallace and Naser (1995) and Ahmed and Courtis (1999) in annual reports studies, and Ku Ismail and Chandler (2005a) in interim report studies. Therefore, this study hypothesises that there is no association between company profitability and the level of disclosure. The profitability measurement used in this study is the ratio of net income to turnover (i.e. sales) as employed in the Ahmed and Courtis (1999) study.

H_6 : There is no relationship between profitability and the level of disclosure for Malaysian listed companies

4.3.2.1.5 Industries

To date, Bursa Malaysia has about 1200 companies classified into 13 industries listed on the stock exchange. These industries are spread over the Main Board, the Second Board, and the Malaysian Exchange of Securities Dealing and Automated Quotation (MESDAQ)¹⁴ as follows:

¹⁴ MESDAQ was launched on 6 October 1997 as a separate market, mostly for technology-based companies. It is part of Bursa Malaysia.

Table 4.1 Industries for Main Board, Second Board and MESDAQ

Main Board	Second Board	MESDAQ/Derivatives
Consumer product	Consumer	Rights
Industrial	Industrial	“A” Shares
Construction	Construction	Loan/debenture
Trading/services	Plantation	Preference share
Infrastructure project companies	Properties	TBR/Warrant
Hotels	Technologies	
Properties	Trading/Services	
Plantations		
Mining		
Technologies		
Real Estate Investment Trusts		
Close end funds		
Exchange Trade Fund		

According to Owusu-Ansah (1998), the level of mandatory disclosure varies across industries for several reasons. His first argument is that certain industries are subject to strict control or regulation because they are the main contributors to the country’s export earnings or national income. Secondly, certain industries such as oil companies may have difficulties in adequately reporting due to the nature of their business. Lastly, the type of product line, or the diversity of products, may contribute to differences in disclosure. Results from the literature show mixed evidence between industries and the extent of disclosure. For example, Stanga (1976) and Fekrat *et al.* (1996) found that industry-type is one of the most significant factors for the differences in the level of disclosure among companies. Specifically for interim disclosure, Ku Ismail and Chandler (2005a) found that there is a relationship between industries and the extent of disclosure.

Moreover, Botosan (1997) argued that different industries will have different disclosure practices, which would be consistent over the years. A possible explanation for this is that the differences are caused by the nature of the business and its operating cycle. Conversely, Cooke (1992) found no association between industry type and mandatory disclosure for Japan. Likewise the study by Tai *et al.* (1990) for Hong Kong. Similarly, Patton and Zalenka (1997) found that the extent of disclosure of companies in the financial or manufacturing industries in the Czech Republic was no different from other companies. However, the companies listed on Bursa Malaysia are subject to the same disclosure requirements, and companies that have other compliance requirements (such as foreign companies) have been excluded from this study to control for this effect. Since the empirical evidence is

inconclusive, the industry-type null hypothesis of this study posits that there is no association between industry and the level of disclosure.

H_7 : There is no relationship between industry type and the level of disclosure for Malaysian listed companies

4.3.2.2 Hypotheses for testing the association between timeliness and company attributes

Examples of previous studies that determine the association between timeliness and company attributes in interim reporting are Robb (1980), Lunt (1982), Chambers and Penman (1984), and Al-Bogami (1996). As mentioned earlier, timeliness is defined as the number of days taken to produce the (quarterly) report. This relationship is discussed in the following section.

4.3.2.2.1 Company size

One of the attributes that is often found to be associated with the timeliness of an annual or interim financial report is company size. For example, Chambers and Penman (1984) found an inverse relationship between reporting lag and size of the company. Similar findings were also found by Boonlert-U-Thai *et al.* (2002) for annual report studies. In contrast, Ettredge *et al.* (1994) found that purchase of timely reviews are positively associated with company size. Ku Ismail and Chandler (2004) reported the same findings that the timeliness of quarterly reporting is influenced by company size. Further, Lunt (1982), Al-Bogami (1996) and Courtis (1976) found no significant association between reporting lag and size of the company.

Therefore, this thesis tests the null hypothesis as follows:

H_8 : There is no relationship between company size and timeliness for Malaysian listed companies

4.3.2.2.2 Profitability

Profitability is one measure used by investors to evaluate the performance of a company. Companies with good profits will want to disclose their results faster than companies that suffer losses. This is consistent with the findings reported by Ku Ismail and Chandler (2004), namely, that companies with good news report faster than companies with bad news. In addition, Chambers and Penman (1984) showed that timely interim reports from small companies that report good news are associated with higher price reactions than are those with longer lag times. However, Courtis (1976) found that there was an inverse relationship between profitability and reporting lag. Based on the above discussion, this study tests the following hypothesis:

H_9 : There is no relationship between profitability and timeliness for Malaysian listed companies

4.3.2.2.3 Leverage

A review of literature reveals mixed findings between timeliness and leverage. According to Ku Ismail (2003), there are two schools of thought. The first suggests that firms with high leverage will report faster than their counterparts. The second suggests the exact opposite, namely, that firms with high leverage report more slowly than firms with low leverage. Examples of studies that support the latter view are Ku Ismail and Chandler (2004) for interim reporting and Boonlert-U-Thai *et al.* (2002) for annual reporting. Therefore, this study proposes the following hypothesis:

H_{10} : There is no relationship between leverage and timeliness for Malaysian listed companies

4.3.2.2.4 Liquidity

Liquidity is always related to going concern issues, and many studies have been conducted on the relationship between the level of disclosure and liquidity. These variables are also tested in the research area that used distressed companies as their sample. However, the association between timeliness and liquidity can be seen from the study by Boritz and Liu (2006). They found that quarterly reports are released in a less timely manner for firms without going concern disclosure. This thesis posits that there is no association between liquidity and timely reporting, as per the following hypothesis:

H_{11} : There is no relationship between company liquidity and timeliness for Malaysian listed companies

4.3.2.2.5 Industries

A number of studies found an association between industry and timeliness, with the earliest reported by Robb (1980). He found that companies in the finance sector issued the highest quality half-yearly reports, while those in the manufacturing and service sectors seemed to have the lowest quality half-yearly reports. In another study, Lunt (1982) found that non-industrial companies produced interim reports more quickly than industrial companies. Al-Bogami (1996) found that the banking sector published more quickly than other industries. However, to date, no studies can be used to conclude that there is either no relationship or an inverse relationship between industries and timeliness. Therefore, this study makes no assertion with respect to possible direction by formulating the following hypothesis:

H_{12} : There is no difference between industries and timeliness for Malaysian listed companies

4.4 Summary

From the above discussion, it is noted that the results from previous studies for each variable proposed are inconclusive. The dependent variables used to determine the association with company attributes are either level of disclosure or timeliness. For level of disclosure, the common independent variables used to determine the relationship are company size, profitability and industry type. For timeliness, the common measurement used is reporting lag, and the independent variables are company size and profitability. For this study, the proposed hypotheses not only look at the association of corporate attributes against the level of disclosure and timeliness, but also examine their relationship with the group established in Section 4.3. In addition, Table 4.2 summarizes the measurement of dependent and independent variables used in this study.

Table 4.2 Summary of the measurement of dependent and independent variables

Variables	Measurement	Formula
<i>Dependent Variables</i>		
Levels of disclosure	Disclosure indices	Disclosure Index Model
<i>Independent Variables</i>		
Company size	Total assets	Current assets + Long term assets
Industry types	Industry groups	
Liquidity	Quick ratio	(Current asset – Inventories) / Current Liabilities
Profitability	Sales	Net profit after tax and interest / Sales
Leverage	Debt to equity ratio	Long-term debt / Total s/holder equity Total shareholders equity = Share capital + Retained earnings – Treasury shares

Chapter 5

Research Methodology

5.1 Introduction

This chapter begins with a discussion on the sample is selected, followed by a discussion on the collection of data from the sample companies. The study involves three stages of data collection: measurement of timeliness, compliance with reporting requirements, and extent of disclosure. The disclosure index model that this study uses is developed and described, as are validity and reliability issues concerning the data collection methods used in this study.

5.2 Sample selection

To date, there are 1200 companies listed at Bursa Malaysia. It will be costly (time wise and financially) to collect data for the entire population of firms. With that in mind, a decision has been made to focus on a preliminary sample of the 100 largest, as these firms collectively constitute a large proportion of the total market capitalization of Bursa Malaysia and would be of more interest to regulators. This method is commonly used for voluntary disclosure studies because the selected companies are the most active stock traded on Bursa Malaysia; therefore, these are the companies that will more readily attract investors (Mohd Ghazali & Weetman, 2006). In addition, it is expected that these companies will be more willing to make greater disclosure in order to give a 'true' picture of their performance. It is further expected that they would more willingly disclose information in order to retain the attention of analysts or to attract more analysts (Eng & Teo, 1999). To relate this discussion with the method of determining sample size, this study is carried out under a regulated environment. First, if the company is willing to make greater disclosure and readily attract investors under a voluntary environment, then it may be assumed that the company would also endeavour to comply with the mandatory disclosure requirement. They would not take the disclosure requirement lightly since this regulation is made to help companies to be more transparent in the eyes of the stakeholders. Secondly, there is a legal backing for such action. Thirdly, sample selection bias does not exist because this study is carried out under a regulated environment. This means that each company should have the same compliance level. In addition, a rule of thumb suggests that sample sizes larger than 30 and smaller than 500 are appropriate for most research (Roscoe, 1975), as noted by Sekaran (2003, p295). Therefore, a minimum of 100 companies should be selected to ensure compliance with this rule of thumb, after considering incomplete data, if applicable.

For this study, due to the limited study period and the discussion on how sample size should be determined and selected, the top 100 companies were chosen from the list of market capitalisation as at 31 December 2004. Out of the 100, 18 companies were excluded because finance companies, trusts and close-end funds have different requirements with respect to quarterly financial reporting (that is, these companies do not fall within the scope of this study). Another 22 were excluded because they did not publish four quarterly reports in a year; in other words, their data was incomplete. The final sample, therefore, consists of 60 companies. The timeframe is three years, specifically, 2005, 2006 and 2007. These years were chosen because FRS 134 *Interim Reporting* applies to accounting periods beginning on or after 1 July 2002, and the financial year ending in 2004 is the transitional year (that is, the period when companies will adjust to the new requirements). Hence, 2005 is the first full year when all companies should be reporting under the new requirements.

5.3 Data collection

The data collection stage is divided into three phases: (1) measuring timeliness, (2) measuring compliance, and (3) the extent of disclosure. As reported in Chapter 3, the quality of interim financial reporting is measured either in terms of timeliness, compliance with the disclosure regulations, or the extent of disclosure. In the following sections, each phase is discussed in detail in order to determine the quality of interim financial reporting.

5.3.1 Phase 1 – Measuring timeliness

The objective of this phase is to determine whether Malaysian listed companies comply with the due date for interim reporting. There are two aspects of timeliness that have been discussed in the literature concerning interim financial reporting. One aspect refers to the frequency of interim reporting such as half-yearly, quarterly, or some other periodic basis. The second aspect refers to the reporting lag (that is, the period between the date of the accounting report and the date of its release). This study, however, considers timeliness from the perspective of that specified in the listing requirement, namely, (a) whether the quarterly reports are produced within the maximum allowable period (two months or 60 days), and then, (b) determining how many days were actually taken to submit the interim reports, what has been termed as the reporting lag, and whether there are any issues regarding late reporting. The findings of this study will establish whether or not timely information can be achieved.

In doing so, the end of each quarter was identified for each company. The Bursa Malaysia website was then searched for the date when the results were announced, allowing a simple

comparison with the latest date that would comply with the relevant regulation. The study also distinguishes between the initial report date¹⁵ and the amendment announcement date¹⁶, if applicable. Where a company has issued an amended report, the initial report date is taken as the actual reporting date. This conclusion is made after confirming with the Bursa Malaysia about the nature of the amendment made in the amended report by the company after the initial report. According to Bursa, the amendment usually involved reproducing a new interim report due to a wrong calculation or human error. This amendment, in Bursa Malaysia's opinion, is immaterial and insignificant and therefore does not affect the whole presentation of interim reporting. As noted previously, this study does not include press releases or any other form of media announcement made by the company.

5.3.2 Phase 2 – Measuring compliance

This study also aims to determine the adequacy of mandatory disclosures in quarterly reporting among Malaysian listed companies. A self-constructed checklist was used to determine the level of compliance with mandatory disclosures specified for quarterly reporting. This is consistent with prior compliance studies such as Tower *et al.* (1997), Street and Bryant (2000), and Street and Gray (2002). It is noted that a properly constructed index is seen as a reliable measurement device for corporate compliance (Marston & Shrives, 1991). The disclosure checklist was developed by considering the disclosure requirements specified in FRS134 *Interim Reporting* and Para 9, Listing Requirement of Bursa Malaysia. A total of 45 items are required from both sources, as listed in Appendix 2 (items 1 to 24 specified by FRS134, and items 25-45 specified in the Bursa Malaysia listing requirement). Both regulations complement each other, and there are no redundant items that appear in both lists. The scoring procedure assigns one point for each item disclosed in the quarterly report, as specified by the disclosure requirement. No point is assigned if companies do not disclose as required by the disclosure requirement. By applying the measuring instrument against the interim reporting of the sampled companies, their mandatory disclosure scores were obtained, and were used with other data specific to each sample company, to test the relational hypotheses.

¹⁵ Initial report date refers to the date that the company issues the quarterly report. It is the same as the announcement date.

¹⁶ Amendment announcement date refers to the date when the company issues an amendment to an earlier version of their quarterly report. An example of an amendment would include a new operating profit or changes in expenses amount.

5.3.2.1 Disclosure index model

The items disclosed in each quarterly report for each company were then used to calculate a disclosure index for that company for that quarter. The value derived from the disclosure index model was used to test the hypotheses summarised in Chapter 4. The disclosure index can be weighted or unweighted. An unweighted disclosure index assumes that each item of disclosure is equally important (Cooke, 1991), while a weighted disclosure index assumes that some items of disclosure are rated as more important relative to other items (Chau & Gray, 2002; Cooke, 1991). Since the disclosure regulations for interim reporting in Malaysia do not attach greater importance to some items, as compared to others, it was considered that an unweighted index would be more appropriate for this study. In addition, it is noted that recent studies tend to use unweighted indices as the measure of level of disclosure (see Haniffa & Cooke (2002), Botosan (1997), Hossain *et al.* (1995)). In contrast, weighted indices have limitations in that the assignment of weights is subjective and that similar items may be assigned different weights in different countries (see Cooke, 1989; Hossain & Adam, 1995). Unweighted indices avoid the subjectivity associated with the determination of the relative weights for each item (Ahmed & Curtis, 1999).

A major problem with this type of scoring is that some companies might be penalised by assigning a score of zero for an undisclosed item when it is not required to disclose that item. It is therefore necessary to use a relative scoring approach whereby the disclosure index for the company is assessed as being the ratio of the computed total disclosure score to the total number of items required to be disclosed by the company. The disclosure index (DI) for each company is then expressed as a percentage according to the following formula:

$$DI_{ijt} = \frac{\sum_{i=1}^{m_{jt}} d_{ijt}}{\sum_{i=1}^{n_{jt}} d_{ijt}}$$

Where

- d_{ijt} = The disclosure value of mandated information item i relevant to sample company j in period t . It is 1 if disclosed, or 0 if not disclosed.
- m_{jt} = The total number of mandated information items relevant to company j actually disclosed in its interim report in period t .
- n_{jt} = The total number of mandated information items that are required to be disclosed by company j in its interim report in period t .

In order to minimise subjectivity in scoring, suggestions made by Cooke (1989), Ahmed and Nicholls (1999), and Mangena and Taurina (2007) were also employed in this study. Firstly, interim reports for 10 companies were read thoroughly in order for the researcher to have a better understanding and to become familiar with the quarterly reporting disclosure. Each company has 12 quarterly reports (four reports per year, for three years). A total of 120 scorings for levels of disclosure were carried out. This procedure was performed by the researcher and a single coder and their scorings were then compared to ensure consistency, thereby minimising subjectivity. Further, in utilising the disclosure index, it is necessary to consider reliability and validity. The following sections address these issues.

5.3.2.2 Validity

Berelson (1952) and Krippendorff (1980) highlighted that the success of content analysis as a research technique depends on the reliability and validity of the procedures employed. According to Sekaran (2003), validity refers to whether the measuring instruments used measure the right object or capture the measures that they were intended to measure, and the measurement becomes invalid if they do not. He divided validity tests into three groups, namely, logical or content validity, criterion-related validity, and congruent or construct validity. These are briefly explained as follows:

a) Logical or content validity

This type of validity test captures to what extent the measuring instrument provides an adequate coverage of the subject matter. The validation is carried out by a group of experts.

b) Criterion-related validity

This validity is established when the measure differentiates among individuals on the criterion it is expected to predict (Sekaran, 2003, p206). It is divided into two types: concurrent validity and predictive validity. Concurrent validity is a measure of how well a particular test correlates with a previously validated measure. Predictive ability involves testing a group of subjects for a certain construct, and then comparing the results with those obtained at some point in the future.

c) Congruent or construct validity

This validity refers to how well the results obtained from the use of the measure fit the theories around which the test is designed. This is assessed through convergent validity and discriminant validity. Convergent validity is established when the scores obtained with two different instruments measuring the same concept are highly correlated. Discriminant validity

is established when, based on theory, two variables are predicted to be uncorrelated, and the scores by measuring them are indeed empirically found to be so.

5.3.2.3 Reliability

Reliability refers to a measurement as an indication of the stability and consistency with which the instrument measures the concept and helps to assess the goodness of the measure (Sekaran, 2003, p203). It is assessed from two points: stability and consistency of the measurement.

a) Stability

This refers to the ability of a measure to remain the same over time, despite uncontrollable testing conditions or the state of the respondents themselves, and is indicative of stability and low vulnerability to changes in the situation (Sekaran, 2003). There are two types of stability tests: retest reliability and parallel-form reliability. Retest reliability testifies to the reliability coefficient obtained with a repetition of the same measure on a second occasion. Parallel-form reliability is conducted when responses on two comparable sets of measures tapping the same construct are highly correlated.

b) Internal consistency

The internal consistency is typically a measure based on the correlations between different items on the same test. Consistency can be examined through the inter-item consistency reliability and split-half reliability tests. The most popular inter-item consistency reliability test is Cronbach's coefficient alpha (Cronbach, 1951) for multipoint-scaled items, and the Kuder-Richardson formula (Kuder & Richardson, 1937) for dichotomous items. Sekaran (2003, p204) illustrates the goodness of measure in the following diagram:

Diagram Removed

Figure 5.1 Testing Goodness of Measures (forms of Reliability and Validity)

Based on the foregoing discussion for validity and reliability, this research employed the content validity approach for the validity test. As for the reliability test, a parallel-form reliability test for stability and Cronbach's coefficient alpha for internal consistency are considered appropriate to measure reliability. The chosen test was performed, and the result is discussed in the following sections to show that the research instruments passed the two important tests.

5.3.2.4 Validity test

To validate the disclosure measuring instrument for this study, the scoring checklist was sent out to two financial reporting experts, Mr Danny Tan, Project Manager for the Malaysian Accounting Standard Board (MASB) and Associate Professor Arun Mohamed, lecturer in Financial Reporting at Universiti Teknologi MARA (UiTM). They were requested to review the disclosure item in the measuring instrument in the light of the disclosure requirement for quarterly reporting in Malaysia. Their comments were taken into account in revising the instrument. Amendments were made basically on the terms used and the sequence of the item in the scoring sheet so that it will be easily read with the quarterly reports. A pilot study was then carried out to ensure validity of the research instrument and the scoring process. Data was encoded by a single coder person, and then compared with the coding performed by the researcher. The detail of this process is also explained in Section 5.3.2.1. Discrepancies, if any, were resolved so that the researcher was better able to interpret and code the raw data, thereby ensuring consistent high quality data. The actual scoring was carried out by the researcher. A single coder was appointed and had undergone a sufficient period of training. From a pilot sample, she has shown an acceptable level of reliability to carry out the rest of the scoring. The same single coder was used throughout the whole study. This procedure performed falls under content validity, as illustrated by Sekaran (2003).

In addition to this, the data collection was also carried out by a research assistant. The research assistant was assigned to extract items 46 to 58 (as in Appendix 3) from the interim report since these items are factual rather than interpretative). This data will be used to test the effect of company attributes on mandatory disclosure. The research assistant was employed because it involved a high volume of data. Also, due to the large number of observations for each company reviewed in this study, the effect of any potential measurement error or bias would have been minimised with the help of the research assistant (Darus, 2005). However, as a precaution in case the research assistant was unfamiliar with financial statements, the reports were downloaded and sorted by the researcher. The job involved extracting the figures from the balance sheet to the checklist. The research assistant then transferred the data to the

Excel sheet prepared by the researcher. Next, the researcher compared the Excel sheet and the manual worksheet to ensure that no discrepancies were found. Therefore, there can be reasonable justification of the validity of the measuring instrument developed for this study.

5.3.2.5 Reliability test

In the context of this study, the reliability test refers to the way the constructed disclosure checklist consistently measures the mandatory disclosure practices of quarterly reporting. As such, two tests were conducted, namely, correlation analysis and the Cronbach’s alpha. The correlation analysis has been widely used in disclosure studies (see Owusu-Ansah, 1998; Wallace & Naser, 1995), while the Cronbach’s alpha has been used by Botosan (1997).

5.3.2.5.1 Cronbach alpha

Cronbach’s coefficient alpha (Cronbach, 1951) is a measure of internal consistency that uses repeated measurements to assess the degree to which correlation among the measurement is attenuated due to random error. As a general rule, an alpha of 0.8 indicates that the correlation is attenuated very little by random measurement error (Carmines & Zellner, 1979). Table 5.1 shows the result for Cronbach’s coefficient alpha for the scoring sheet.

Table 5.1 Reliability statistics

Cronbach's alpha	Cronbach's alpha based on standardised items	No of items
.968	.968	12

Even though the above result indicates that the internal consistency of measurement is more than 0.8, it could not be used to determine the reliability test, because the calculation posed a serious warning that stated that “it cannot calculate the inverse matrix”, indicating that there was a serious statistics calculation problem. It could not be calculated because the disclosure indices values used to calculate the inverse matrix were so close to each other and some of the values were overlapping so that the inverse matrix calculation could not be performed. Thus, this study cannot rely on the Cronbach’s alpha value to measure the internal consistency, as used by Botosan (1997) in her study. Therefore, this study will use the correlation analysis to measure the reliability test.

5.3.2.5.2 Correlation analysis

As mentioned in the validity test section (Section 5.3.2.4), a pilot test was carried out and a second coder appointed. Thus, a correlation test was performed on the researcher’s scores and the second coder’s scores for the 10 companies between quarters and across years. Table 5.2 presents the result of the correlation analysis. The coefficient of Pearson should be above 0.8,

indicating significant correlations between the scores of the two scorers. These results reveal that the scores obtained independently by both scorers were in substantial agreement, indicating minimal subjectivity in interpreting and scoring the mandatory disclosures in quarterly reporting. These values are comparable to studies by Owusu-Ansah (1998) and Chow and Wong-Boren (1987). Therefore, the reliability of the scoring sheet used in this study is justified.

Table 5.2 Bi variate correlations for the reliability test

	r1_05	r2_05	r3_05	r4_05	r1_06	r2_06	r3_06	r4_06	r1_07	r2_07	r3_07	r4_07
y1_05	.722*											
y2_05	.018	.723*										
y3_05	-.401	.639*	.693*									
y4_05	-.285	.696*	.719*	.906**								
y1_06	.722*	-.309	-.172	-.130	.722*							
y2_06	-.081	.723*	.679*	.913**	-.081	.723*						
y3_06	-.401	.639*	.693*	.794**	-.401	.639*	.693*					
y4_06	-.285	.696*	.719*	.906**	-.285	.696*	.719*	.906**				
y1_07	.099	-.421	-.347	-.334	.099	-.421	-.347	-.334	.819**			
y2_07	-.150	-.324	-.427	-.238	-.150	-.324	-.427	-.238	.760*	.704*		
y3_07	-.194	-.256	-.356	-.213	-.194	-.256	-.356	-.213	.745*	.701*	.788**	.
y4_07	-.352	-.406	-.552	-.190	-.352	-.406	-.552	-.190	.641*	.692*	.648*	.699*

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

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

5.3.3 Phase 3 – Measuring the extent of disclosure

After completing the compliance aspect, the analysis was further extended to determine the quality of disclosure. The scoring sheet was scrutinised to determine the item that will be used to measure the extent of disclosure. The following explanatory notes were selected as the subjects of investigation:

- Comment on the seasonality and cyclicalities
- Review the performance (current and year-to-date)
- Material changes in the profit before taxation
- Company's prospects (future and current)
- Board of Directors' opinion
- Profit forecast

The above explanatory notes were chosen for several reasons, as determined in the study by Ku Ismail (2003), and involved interpretation and comments from the management.

Specifically, this selected item has a different style of reporting that leads to different interpretation from the users' perspectives. Secondly, although the explanatory notes are compulsory, the amount of disclosure provided is at the discretion of the preparer. It is considered subjective and, hence, the amount of disclosure is subject to the interpretation of the preparer. Therefore, it is expected that the amount of disclosure is likely to vary between companies. Ku Ismail limits her analysis to three items to measure the quality of disclosure for interim reporting: (a) material changes in the quarterly results compared to those of the previous year; (b) review of company performance; and (c) comment on current year prospects. Her argument is that only the explanatory notes are common and could be disclosed by all companies. However, other explanatory notes that involved interpretations are not included in Ku Ismail's study since she argued that it is difficult to determine by mere observations of the reports. She further argued that non-disclosure may be due to the items being irrelevant or immaterial, and thus not subject to disclosure, or alternatively the company was not willing to disclose the item in question although it was relevant (Ku Ismail, 2003, p186). However, this study considers all explanatory notes as subject items, because this will give a better measurement for quality, by defining clearly non-disclosure and not applicable items. Further, this study considers every aspect of the disclosure requirement; leaving out one disclosure item will diminish the uniqueness of this study.

To measure the extent of disclosure in a report, prior literature was reviewed: studies show that content analysis approach is one of the techniques that may be used in analysing text. It is also one of the techniques that is most widely used in accounting research to reveal useful insights into accounting practices (see Guthrie & Abeysekera, 2006; Guthrie & Parker, 1990; Krippendorff, 2004; Milne & Adler, 1999; Smith & Taffler, 2000). It is a systematic method of categorising and analysing the content of text, such as the number of occurrences of words, or the number of words relating to a particular theme (Smith, 2003). Also, content analysis is a research technique for making inferences from texts (or other meaningful matter) to the context of their use (Krippendorff, 2004, p18). The potential contribution of content analysis is that it can enable researchers to go behind the text as presented to make valid inferences about hidden or underlying (or possibly unintended) meaning and messages of interest (Weber, 1990; Denscombe, 1998, as cited in Steenkamp & Northcott, 2007).

Content analysis involves codifying qualitative and quantitative information into pre-defined categories in order to derive patterns in the presentation and reporting of information (Guthrie & Petty, 2000). It involves the identification of coding categories, the unit analysis, and relevant data (Steenkamp & Northcott, 2007). In the context of this study, coding categories

refer to the themes and concepts identified as being related to the interim reporting. Accordingly, the category for this study is identified as extent of disclosure. Next, the appropriate unit analysis used in this study is determined. It can be words, phrases, sentences or themes that would be treated as data 'units'. This choice of appropriate units to be used with content analysis has been the subject of considerable debate in the literature (Tilt, 2000). A review of the literature shows that studies of corporate disclosure used either the number of words (Clatworthy & Jones, 2001), the number of sentences (Buhr, 1998; Guthrie *et al.*, 2006; Kohut & Segars, 1992), or the number of pages (Bartlett & Jones, 1997; Cowen *et al.*, 1987) and thematic content analysis within sentences (Short & Palmer, 2003) as their units of analysis. Nevertheless, no one method can be argued to be superior to the others, since the results of previous studies found a mixed result of correlation between disclosure index and appropriate unit (Ku Ismail, 2003). However, the relevant data for this study are the explanatory notes in interim reporting. As for this study, thematic content analysis within sentences is chosen since there is repetition of words involved in the disclosure. Furthermore, a review of the report shows that most of the wording used is verbatim from one quarter to another.

As such, a scoring sheet is established to capture the extent of disclosure in interim reporting in Malaysia. Ten reports for each quarter were randomly selected to establish the scoring sheet. At the same time, Ku Ismail's (2003) findings in the form of frequency items for the extent of disclosure were used as a guide to establish the scoring sheet. A proper scale was assigned for each of the disclosure items investigated for the extent of disclosure. The scale was developed after randomly reviewing the reports for 10 companies, for each quarter and year as shown in Appendix 4. The meaning of some of the scales will be explained here, and can be applied to all the disclosures being investigated. For example, "no information", "no projection", and "no comment" refer to no disclosure made by the company. As for "general explanation", "general projection", and "general comment", these refer to a qualitative comment with no specific reference to any performance indicators when commenting on the respective disclosure item. If the scale specifically mentions the name of the performance indicator (such as profit before tax), this means that only quantitative disclosure was made available. However, quantitative and qualitative comments can be found for the scale that mentions "the performance indicator together with explanation" or "projection with specific comment".

Further, the scoring sheet was sent for review to En Azhan Abu Bakar, Senior Auditor at Jamal, Amin and Partners, to ensure the validity of the scoring sheet. The wording was

refined to reduce the ambiguity of the scoring sheet, as suggested by En Azhan Abu Bakar. The final scoring sheet, as in Appendix 4, was used to capture the extent of disclosure.

5.4 Summary

This chapter started with the discussion of the sample selection, providing justification on how the sample was selected. It was then followed by the discussion on how data were collected, namely, “measuring timeliness”, “measuring compliance” and “measuring the extent of disclosure”. A clear definition of the initial report date and the amendment announcement date was provided under Section 5.3.1. Under data collection for measuring compliance (Section 5.3.2), a detailed explanation was provided on how the self-constructed checklist was developed. It further explained the way the disclosure index model was employed to calculate a disclosure index. Issues such as validity and reliability were also discussed and tested in this section. Section 5.3.3 discussed the choices for the explanatory notes used in this section. It also highlighted the differences in items used to measure the extent of disclosure employed in this study, compared with previous studies.

Chapter 6

Analysis of Findings and Discussion

6.1 Introduction

This chapter presents and discusses the results of various data analyses carried out in this study. Normality test results are reported first for the individual variables to guide the choice of appropriate statistical techniques for analysing the data, followed by descriptive and inferential statistics for all stages illustrated in Chapter 5. The statistical package used is SPSS version 15.

6.2 Normality test

The Kolmogorov-Smirnov (K-S) procedure was performed to test the null hypothesis that the sample data is drawn from a normal distribution, and the results are presented in Appendix 1. The dependent variable is the disclosure index (DI), and consists of company size, leverage, industry, quick ratio and profitability. All normality tests were performed on these variables except for industry, which was not transformed because it was coded to enable SPSS to read the data.

According to Pallant (2007), K-S with a significant value of more than 0.05 indicates that the distribution is normal at 5% significance level. With reference to the normality value (as in Appendix 5), only DI and some of the leverage values (Q1-Q4 2005) are normally distributed. Therefore, transformation of data was performed as follows: transformation using the log of assets for company size is necessary to reduce the skewness of the distributions, and the potential effects for the size of the variables on the regression equation (see, for example, Ahmed and Nicholls (1994) and Wallace and Naser (1995) for log transformation of total assets). Further, leverage, quick ratio and profitability were transformed using the Van Der Waerden¹⁷ approach. No transformation was used for disclosure indices because it is normally distributed. This was suggested by Cooke (1998), who proposed the normal scores method as the most appropriate in transforming datasets that reveal non-linear monotonic relationships between the independent and dependent variables.

¹⁷ The Van Der Waerden test is one of a number of normal scores tests which have been developed for evaluating data. Normal scores tests transform a set of rank orders into a set of standard deviation scores based on standard normal distribution.

6.3 Descriptive statistics

Descriptive statistics are divided into two sections: timeliness and disclosure index.

Descriptive statistics for timeliness are presented in two forms: (a) “reporting within allowable period” which refers to compliance as to whether or not the company produced the quarterly reporting within 60 days as required by the regulation; and (b) “reporting lag (days)” which refers to the length of time the company took to produce the quarterly report. It is then followed by the discussion on the nature of disclosure compliance and cross-tabulation results between non-compliant companies and groups. The descriptive statistics for the disclosure index and statistics for independent variables used in this study are also discussed in this section.

6.3.1 Descriptive statistics for timeliness

Descriptive statistics relating to the timeliness of quarterly reporting from 2005 to 2007 are presented in Tables 6.1 to 6.3. As mentioned in Chapter 4, there are two aspects of timeliness where quarterly reporting is concerned for this study. The first aspect is to establish whether the interim reports are produced within the allowable period, as required by the regulations, and the second aspect of timeliness is reporting lag.

6.3.1.1 Reporting within the allowable period

Table 6.1 Reporting within the allowable period (%)

Year	Q1	Q2	Q3	Q4
2005	100	100	93	93
2006	97	100	100	98
2007	98	100	98	98

Table 6.1 presents the percentage of Malaysian companies that published their interim reports within the allowable period of two months, as specified by the Bursa Malaysia Listing Requirements. It indicates that most Malaysian companies within quarters and across years complied with this requirement. Only 7% of the companies failed to comply with the requirement for Q3 and Q4 in 2005. However, the compliance rate improved for the same quarters in 2006. A closer inspection of this table shows that there is a slight decrease in the compliance rate from 100% in 2005 to 97% in 2006. For 2007, the compliance rate is 98% for Q1, Q3 and Q4 and 100% for Q2. From the results, it can be concluded that the compliance rate is very high and (essentially) constant over the years. This finding is consistent with statistics gathered by KLSE on the submission of quarterly reporting that shows a compliance rate of 98% for reports due on 30 September 1999 (KLSE, 1999). It should be noted that some

companies do not comply with the regulations, and submit their reports after the due date/allowable period. Although the non-compliance rate is low, the reasons for non-compliance may be of interest to the regulatory bodies, who may need to consider whether some form of action might ensure greater compliance. For example, requiring companies to disclose the reason or reasons for this non-compliance with reporting deadlines might incentivise companies to avoid such exposure, thereby achieving greater compliance with the regulators. In addition, the reasons for non-compliance need to be made known so that investors are able to understand the real reason for the non-compliance. This situation will help investors to evaluate the real performance of a company for their decision-making process.

6.3.1.2 Reporting lag (days)

Table 6.2 Reporting lag (days)

	Q1			Q2			Q3			Q4		
Year	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min
2005	52	76	26	51	61	13	50	61	19	55	73	36
2006	52	76	26	51	61	13	50	61	19	55	73	23
2007	52	73	23	51	61	19	50	86	19	56	85	36

Table 6.2 indicates the mean time taken by companies to publish their quarterly reports. It reveals that the mean time is 52 days for Q1 for 2005 to 2007, 51 days for Q2 and Q3 for the three years, while the mean for Q4 is 55 days for 2005 and 2006 and 56 days for 2007. Several conclusions can be drawn from these findings. Firstly, Malaysian companies submit their reports between five and 10 days before the due date. Secondly, the average number of days taken to produce quarterly reports gradually decreases from Q1 to Q3, but then increases for the last quarter of the year. Thirdly, it takes longer to produce the quarterly report in Q4. These findings are similar to those reported by Ku Ismail (2003), where the mean for Q4 was 55.7 days. However, a longer time for Q4 is intuitively reasonable, since companies are required to prepare the report for the fourth quarter as well as the full annual report, while in the first three quarters, only additional information is added to the previous report.

6.3.1.3 The nature of disclosure compliance

Further analysis was carried out to investigate the nature of disclosure compliance. Samples were divided into four subgroups based on their compliance with the reporting requirements (*Reporting*) and with the listing requirements (*Listing*), as follows: Group 1 – Companies that comply with both *Reporting* and *Listing*; Group 2 – Companies that comply with *Reporting*

but not *Listing*; Group 3 – Companies that comply with *Listing* but not *Reporting*; and Group 4 – Companies that do not comply with *Reporting* or *Listing*. The sample companies fall only into Groups 2 and 4. This was carried out by scrutinizing the disclosure checklists gathered during the phase 2 data collection and a remark was given to the company in the group in which they belong on those checklists.

Table 6.3 Nature of disclosure compliance (%)

	Q1		Q2		Q3		Q4	
Year	Group 2	Group 4	Group 2	Group 4	Group 2	Group 4	Group 2	Group 4
2005	11.7	88.3	13.3	86.7	10.0	90.0	10.0	90.0
2006	10.0	90.0	10.0	90.0	10.0	90.0	10.0	90.0
2007	11.7	88.3	11.7	88.3	11.7	88.3	11.7	88.3

Table 6.3 reports on the nature of disclosure compliance and the percentage rates based on the subgroups. The result reveals that there are quite a number of companies that do not comply with both listing and reporting requirements. This is surprising given that (a) the Reporting requirement is subject to legal backing, as follows:

“Where financial statements are required to be prepared or lodged under any law administrated by the Securities Commission, Bank Negara Malaysia or the Companies Commission Malaysia and approved accounting standards have been issued or adopted by the Board, such financial statement shall be deemed not to have complied with the requirement of such laws unless they have been prepared and are kept in accordance with the approved accounting standard.”

(S26D, FRA (Amendment) 2004)

and (b) the Listing requirement is subject to enforcement by the Securities Commission via a structured approach, namely, the financial reporting surveillance and compliance programme. The surveillance and compliance function is intended to ensure that listed companies comply with approved accounting standards regarding the preparation and presentation of their financial statements. Compliance with accounting standards is required by law, and there are severe penalties for non-compliance. The Securities Commission has broad powers to direct the company, its director(s), or chief executive officer to take the necessary rectifying actions, or make the necessary announcements with respect to the non-compliance or rectification required. Such offences also carry a fine not exceeding RM1 million, or imprisonment for a term not exceeding five years, or both.

The results in Table 6.3 also reveal that Malaysian companies fail to observe the requirements of the Act and other enforcement bodies. Another surprising finding from Table 6.3 is that only 10-12% of the companies fall into Group 2 (Compliance with Reporting but not Listing

requirements) for each quarter across the years. This shows that very few companies comply with the requirement of FRS 134. In other words, most of the companies belong to Group 4 (Non-compliance with both requirements).

Further analysis was carried out on an item-by-item basis to determine if there are any specific items that are not disclosed. The analysis shows that there are two items that the sample companies do not commonly disclose in their quarterly reports that result in non-compliance with the listing requirements, namely, the “Opinion from the Board of Directors” and the “Review of the performance of the company and its principal subsidiaries for the current quarter and financial year to date”. With respect to non-compliance with the reporting requirements, the common non-disclosure items are “Additional lines and items for the financial statement” and “Additional disclosure as required by FRS 3 *Business Combination* Para 66-73”.

6.3.1.4 Cross-tabulation results between the non-compliant companies and the group

This section shows the cross-tabulation of compliant and non-compliant (quarterly reporting produced after due date) companies and the group that they fall into (either Group 2 or Group 4). The results are shown in Panel 1 to Panel 7. It is noted that the total numbers of non-compliant companies vary from one quarter to another. Panels are prepared for the quarters when non-compliant companies exist, namely, Q3 and Q4 (2005), Q1 and Q4 (2006), and Q1, Q2 and Q3 (2007).

Panel 1: Quarter 3, 2005

			Gp_Q3_05		Total
			Group 2	Group 4	
Re_Q3_05	compliant	Count	49	7	56
		Expected Count	46.7	9.3	56.0
		% within Re_Q3_05	87.5%	12.5%	100.0%
		% within Gp_Q3_05	98.0%	70.0%	93.3%
		% of Total	81.7%	11.7%	93.3%
	non-compliant	Count	1	3	4
		Expected Count	3.3	.7	4.0
		% within Re_Q3_05	25.0%	75.0%	100.0%
		% within Gp_Q3_05	2.0%	30.0%	6.7%
		% of Total	1.7%	5.0%	6.7%
Total		Count	50	10	60
		Expected Count	50.0	10.0	60.0
		% within Re_Q3_05	83.3%	16.7%	100.0%
		% within Gp_Q3_05	100.0%	100.0%	100.0%
		% of Total	83.3%	16.7%	100.0%

Panel 1 for Q3, 2005 indicates that out of 56 companies that produce quarterly reporting within the allowable period, 49 companies fall into Group 2 and seven companies fall into Group 4. Then, out of four non-compliant companies, three fall into Group 2 and one into Group 4.

Panel 2: Quarter 4, 2005

			Gp_Q4_05		Total
			Group 2	Group 4	
Re_Q4_05	compliant	Count	49	5	54
		Expected Count	45.0	9.0	54.0
		% within Re_Q4_05	90.7%	9.3%	100.0%
		% within Gp_Q4_05	98.0%	50.0%	90.0%
		% of Total	81.7%	8.3%	90.0%
	non-compliant	Count	1	5	6
		Expected Count	5.0	1.0	6.0
		% within Re_Q4_05	16.7%	83.3%	100.0%
		% within Gp_Q4_05	2.0%	50.0%	10.0%
		% of Total	1.7%	8.3%	10.0%
Total		Count	50	10	60
		Expected Count	50.0	10.0	60.0
		% within Re_Q4_05	83.3%	16.7%	100.0%
		% within Gp_Q4_05	100.0%	100.0%	100.0%
		% of Total	83.3%	16.7%	100.0%

Panel 2 for Q4, 2005 reveals that one and five non-compliant companies fall into Group 2 and Group 4, respectively. The table also shows that there are 54 compliant companies, of which, 49 fall into Group 2 and five into Group 4.

Panel 3: Quarter 1, 2006

			Gp_Q1_06		Total
			Group 2	Group 4	
Re_Q1_06	compliant	Count	53	6	59
		Expected Count	52.1	6.9	59.0
		% within Re_Q1_06	89.8%	10.2%	100.0%
		% within Gp_Q1_06	100.0%	85.7%	98.3%
		% of Total	88.3%	10.0%	98.3%
	non-compliant	Count	0	1	1
		Expected Count	.9	.1	1.0
		% within Re_Q1_06	.0%	100.0%	100.0%
		% within Gp_Q1_06	.0%	14.3%	1.7%
		% of Total	.0%	1.7%	1.7%
Total		Count	53	7	60
		Expected Count	53.0	7.0	60.0
		% within Re_Q1_06	88.3%	11.7%	100.0%
		% within Gp_Q1_06	100.0%	100.0%	100.0%
		% of Total	88.3%	11.7%	100.0%

Panel 3 for Q1, 2006 shows that only one company is non-compliant, and it falls into Group 4. For compliant companies, 53 are in Group 2 and six are in Group 4.

Panel 4: Quarter 4, 2006

			Gp_Q4_06		Total
			Group 2	Group 4	
Re_Q4_06	compliant	Count	53	6	59
		Expected Count	52.1	6.9	59.0
		% within Re_Q4_06	89.8%	10.2%	100.0%
		% within Gp_Q4_06	100.0%	85.7%	98.3%
		% of Total	88.3%	10.0%	98.3%
	non-compliant	Count	0	1	1
		Expected Count	.9	.1	1.0
		% within Re_Q4_06	.0%	100.0%	100.0%
		% within Gp_Q4_06	.0%	14.3%	1.7%
		% of Total	.0%	1.7%	1.7%
Total		Count	53	7	60
		Expected Count	53.0	7.0	60.0
		% within Re_Q4_06	88.3%	11.7%	100.0%
		% within Gp_Q4_06	100.0%	100.0%	100.0%
		% of Total	88.3%	11.7%	100.0%

Panel 4 for Q4, 2006 indicates that out of 59 companies that produce quarterly reporting within the allowable period, 53 fall into Group 2 and six fall into Group 4. Only one company is non-compliant and falls into Group 4.

Panel 5: Quarter 1, 2007

			Gp_Q1_07		Total
			Group 2	Group 4	
Re_Q1_07	Compliant	Count	53	6	60
		Expected Count	52.1	6.9	59.0
		% within Re_Q1_07	89.8%	10.2%	100.0%
		% within Gp_Q1_07	100.0%	85.7%	98.3%
		% of Total	88.3%	10.0%	98.3%
	non-compliant	Count	0	1	1
		Expected Count	.9	.1	1.0
		% within Re_Q1_07	.0%	100.0%	100.0%
		% within Gp_Q1_07	.0%	14.3%	1.7%
		% of Total	.0%	1.7%	1.7%
Total		Count	54	7	60
		Expected Count	53.0	7.0	60.0
		% within Re_Q1_07	88.3%	11.7%	100.0%
		% within Gp_Q1_07	100.0%	100.0%	100.0%
		% of Total	88.3%	11.7%	100.0%

Panel 5 for Q1, 2007 reveals that only one non-compliant company falls into Group 4. The table also shows that there are 59 compliant companies, of which, 53 are in Group 2 and six in Group 4.

Panel 6: Quarter 2, 2007

			Gp_Q2_07		Total
			Group 2	Group 4	
Re_Q2_07	compliant	Count	52	7	59
		Expected Count	51.1	7.9	59.0
		% within Re_Q2_07	88.1%	11.9%	100.0%
		% within Gp_Q2_07	100.0%	87.5%	98.3%
		% of Total	86.7%	11.7%	98.3%
	non-compliant	Count	0	1	1
		Expected Count	.9	.1	1.0
		% within Re_Q2_07	.0%	100.0%	100.0%
		% within Gp_Q2_07	.0%	12.5%	1.7%
		% of Total	.0%	1.7%	1.7%
Total		Count	52	8	60
		Expected Count	52.0	8.0	60.0
		% within Re_Q2_07	86.7%	13.3%	100.0%
		% within Gp_Q2_07	100.0%	100.0%	100.0%
		% of Total	86.7%	13.3%	100.0%

Panel 6 for Q2, 2007 indicates that out of 59 companies that produce quarterly reporting within the allowable period, 52 companies fall into Group 2 and seven companies fall into Group 4. Only one company is non-compliant and falls into Group 4.

Panel 7: Quarter 4, 2007

			Gp_Q4_07		Total
			Group 2	Group 4	
Re_Q4_07	compliant	Count	52	7	59
		Expected Count	51.1	7.9	59.0
		% within Re_Q4_07	88.1%	11.9%	100.0%
		% within Gp_Q4_07	100.0%	87.5%	98.3%
		% of Total	86.7%	11.7%	98.3%
	non-compliant	Count	0	1	1
		Expected Count	.9	.1	1.0
		% within Re_Q4_07	.0%	100.0%	100.0%
		% within Gp_Q4_07	.0%	12.5%	1.7%
		% of Total	.0%	1.7%	1.7%
Total		Count	52	8	60
		Expected Count	52.0	8.0	60.0
		% within Re_Q4_07	86.7%	13.3%	100.0%
		% within Gp_Q4_07	100.0%	100.0%	100.0%
		% of Total	86.7%	13.3%	100.0%

Panel 7 for Q4, 2007 reveals that only one company is non-compliant and falls into Group 4. The table also shows that there are 59 compliant companies, of which, 52 are in Group 2 and seven are in Group 7.

Findings in Panels 1 to 7 lead to two important conclusions. Firstly, most of the non-compliant companies belong to Group 4, which is non-compliant with both Reporting and Listing. It means that these companies not only produced their quarterly reports after the allowable period, but that they also did not comply with the reporting and listing requirements. Nevertheless, there are non-compliant companies that belong to Group 2, but still produced their quarterly reports after the allowable period. This group of companies failed to observe the listing requirement but did comply with the reporting requirement. Secondly, the majority of the compliant companies belong to Group 2. This means that the companies failed to observe the listing requirement, although they managed to produce their quarterly reports within the allowable period. This finding reveals the serious offence against the disclosure requirement, and the two problems that will result from this offence: (a) for companies that do not produce the quarterly reports within the allowable period it could lead to doubt about “timeliness” characteristics; and (b) not complying with either the listing requirement or both requirements will lead to insufficient disclosure which will later affect investors in their decision making.

6.3.2 Descriptive statistics for the disclosure index

Table 6.4 Disclosure index (mean)

	Q1			Q2			Q3			Q4		
Year	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min
2005	0.89	0.97	0.82	0.87	0.97	0.79	0.89	0.97	0.80	0.89	0.97	0.79
2006	0.90	0.97	0.83	0.89	0.97	0.82	0.89	0.97	0.82	0.90	0.96	0.81
2007	0.90	0.97	0.82	0.90	0.97	0.79	0.90	0.97	0.79	0.90	0.97	0.79

Table 6.4 reports the means of the disclosure indices for all companies, as calculated according to the formula in Section 5.3.2. The range of the mean disclosure indices is between 0.87 and 0.90 for all quarters across the three years of the study. A closer inspection of this table reveals that the lowest mean of 0.87 occurs in Q2 of 2005, and all the other means are relatively stable at 0.89 and 0.90. The lowest minimum disclosure index is 0.79, which occurred in Q2 and Q3 in 2005 and Q2, Q3 and Q4 in 2007, while the highest disclosure index is 0.97 reported in Q3 and Q4 of 2007. Thus, it can be seen that full compliance with the reporting and listing requirements is not achieved in any of the periods studied. These

findings pose the question as to why the disclosure compliance index is moderately low under a regulated reporting environment. Several explanations are possible. It could be that companies have different interpretations as to what is required. It could also be that some companies may have disclosed items using other means of communication, such as management commentary and/or press releases rather than their quarterly reports. However, using media other than the formal quarterly reports does not form part of this study. These reasons might explain why the item was regarded as not being disclosed, which, in turn, will affect the disclosure compliance index. Further, other factors affecting compliance with mandatory disclosure requirements may be due to an inadequate regulatory framework and enforcement mechanisms (Ahmed & Nicholls, 1994).

Table 6.5 Comparison of average mean disclosure indices

Country	Average mean disclosure index
Malaysia (this study)	0.89
United Kingdom (Mangena & Tauringana, 2007)	0.75
Australia (Samantha & Greg, 1997)	0.84
New Zealand and neighbouring countries (Owusu-Ansah, 2005)	0.93
Singapore (Samantha & Gregg 1997)	0.95

From the comparison shown in Table 6.5 between this study and other previous studies, it can be concluded that the disclosure means for Malaysian companies are comparatively good. However, under the legal backing environment, this is not supposed to be the case for reasons highlighted earlier.

The descriptive statistics for the continuous independent variables examined in this study are presented in Table 6.6 (descriptive statistics for company size, liquidity, profitability and leverage) and Table 6.7 (descriptive statistics for industries).

Table 6.6 Summary of statistics for total asset, liquidity, profitability and leverage

	Year	2005				2006				2007			
Variables	Quarter Statistic	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Company size (total assets) (RM'000 000)	Mean	62.62	63.03	63.41	64.99	68.61	69.32	70.54	72.87	74.79	79.69	81.17	84.63
	Min	2.68	2.91	2.91	2.83	2.81	2.92	2.81	2.69	2.92	3.06	3.32	3.07
	Max	630.63	642.98	640.11	650.92	666.18	669.80	675.07	677.24	681.31	685.00	688.54	699.84
Liquidity	Mean	2.43	2.44	2.35	2.39	2.52	2.41	2.27	2.36	2.41	2.67	2.08	2.19
	Min	0.12	0.10	0.07	0.07	0.09	0.13	0.13	0.37	-3.67	-2.37	-2.71	-1.14
	Max	13.73	20.72	14.14	11.79	14.39	14.84	13.69	9.05	16.65	18.95	15.96	21.17
Profitability	Mean	0.23	0.18	0.15	0.05	0.25	0.16	0.18	0.31	0.20	0.18	0.17	0.10
	Min	-0.46	-0.45	-0.39	-3.48	-0.49	-0.45	-0.51	-1.37	-0.50	-0.43	-0.51	-2.21
	Max	3.52	1.85	1.12	0.88	4.98	1.22	1.44	9.11	2.58	1.89	1.70	1.99
Leverage	Mean	0.55	0.69	0.73	0.69	0.56	0.56	0.64	0.61	0.62	0.62	0.60	0.62
	Min	-0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Max	3.67	5.88	5.87	6.18	2.63	2.50	6.01	5.79	5.12	4.91	4.97	4.71

As shown in Table 6.6, the mean size for the sample companies is measured by their total asset value, which is from RM62.62 to RM64.99 million for year 2005, from RM68.61 to RM72.87 million for year 2006, and from RM74.79 to RM84.63 million for year 2007. For year 2005, the minimum total asset is from RM2.68 to RM2.91 million, and the maximum is from RM630.6 to RM650.92 million. For year 2006, the minimum total asset is from RM2.81 to RM2.92 million, and the maximum is from RM666.18 to RM677.24 million. For year 2007, the minimum total asset is from RM2.92 to RM3.32 million, and the maximum is from RM681.31 to RM699.84 million.

Liquidity is measured by the quick ratio. The mean liquidity ratio is from 2.68 to 2.91 for year 2005, from 2.69 to 2.92 for year 2006, and from 2.92 to 3.32 for year 2007. The minimum liquidity ratio lies between 0.07 and 0.12 for year 2005, between 0.07 and 0.13 for year 2006, and between 2.08 and 2.67 for year 2007. As for the maximum liquidity ratio, the value is from 11.79 to 20.72 for year 2005, from 9.05 to 14.84 in year 2006, and from 15.96 to 21.17 for year 2007.

The profitability ratio is measured by net profit sales or revenue. The mean size for the profitability ratio is between 0.05 and 0.23 for year 2005, between 0.16 and 0.31 for year 2006, and between 0.10 and 0.20 in year 2007. For year 2005, the minimum profitability ratio is between -0.39 and -3.48, and the maximum is between 0.88 and 3.52. For year 2006, the minimum is between -0.45 and -1.37, and the maximum is between 1.22 and 9.11. For year 2007, the minimum is between -0.51 and -2.21, and the maximum is between 1.70 and 2.58.

As for the debt ratio, which is measured by debt to equity, the mean size ranges from 0.55 to 0.73 in year 2005, from 0.56 to 0.64 in year 2006, and from 0.60 to 0.62 in year 2007. The minimum debt ratio lies between -0.40 and zero for year 2005. For years 2006 and 2007, the minimum debt ratio is zero. As for the maximum debt ratio, the value is 3.67 to 6.18 for year 2005, 2.63 to 6.01 for year 2006, and 4.71 to 5.12 for year 2007.

Table 6.7 Number of companies by industry

Industries	Frequency	Percentage (%)
Trading/services	21	35.0
Customer	10	16.7
Industrial	9	15.0
Construction	5	8.3
Infrastructure	5	8.3
Property	4	6.7
Plantation	4	6.7
Technology	2	3.3
Total	60	100

Table 6.7 reports on the number of companies in the sample for each industry. Trading/ services represent 35% of the total sample, followed by Consumer (16.7%) and Industrial (15%). About 8.3% and 6.7% of the sample are represented by Infrastructure and Property, respectively. The balance of the sample consists of companies from Technology.

Tables 6.6 and 6.7 represent the descriptive statistics for the independent variables, which are measured by the following methods:

- Company size: Natural log of total assets
- Liquidity: Quick ratio
- Profitability: Net profit
- Leverage: Debt to equity ratio
- Industry: Coded according to the industry groups listed in Bursa Malaysia.

The results presented the mean, minimum and maximum for total asset, liquidity, profitability and leverage. As for industries, frequency was calculated to determine the number of companies for each industry, and the result reveals that Trading/services contributes the most sample companies for this study.

6.4 Inferential statistics

This section presents inferential statistics covering the “timeliness” and “level of disclosure”, followed by hypothesis testing using univariate and multivariate analysis. Timeliness will employ non-parametric tests, since the reporting lag shows a non-normal distribution (see Davies & Whittred, 1980; Dyer & McHugh, 1975), namely Spearman’s correlation, the Kruskal-Wallis test, the Mann-Whitney U test, and the Friedman test. For the level of disclosure, data are normally distributed; therefore parametric tests will be employed such as one sample t-test, independent t-test, and analysis of variance (ANOVA). All results are presented according to the hypotheses in Chapter 4.

6.4.1 Timeliness

This section discusses all the test and hypotheses tested, in relation to timeliness as hypothesised in Section 4.3.1, summarised as follows:

H_{1a} : There is no difference in the means of timeliness across years

H_{1b} : There is no difference in the means of timeliness between quarters

H_{1c} : There is no difference in the means of timeliness between industries

H_{1d} : There is no difference in the means of timeliness between groups

6.4.1.1 Means for timeliness across years (H_{1a})

Table 6.8 Comparison of the means for timeliness (number of days) across years

	2005	2006	2007
<i>Mean rank</i>			
Q1	2.63	2.71	2.78
Q2	2.28	2.46	2.35
Q3	2.23	2.04	1.92
Q4	2.85	2.79	2.95
<i>Friedman test</i>			
N	60	60	60
Chi-square	9.876	13.102	25.307
Df	3	3	3
p-value	0.020*	0.004*	0.000*

*significant at 0.05

Table 6.8 shows the mean rank for timeliness for each quarter from 2005 to 2007, and indicates no systematic pattern in the mean rank across the year. The mean rank increases from 2005 to 2006 for Q1 and Q2. However, it decreases for Q3 and Q4 from 2005 to 2006. The decreasing trend can also be observed for Q2 and Q3 from 2006 to 2007. As for Q1 and Q4, the mean rank increases from 2006 to 2007.

The results of the Friedman test in Table 6.8 indicate that the p value is less than 0.05 for all three years. Therefore, the null hypothesis is rejected, and it is concluded that there are significant differences in the means for timeliness across years. The result is expected because there is a variation in the number of days taken for each company for each quarter for all three years, which can be clearly seen for Q1 and Q4 of each year. It is suggested that the reason for the variation is because Q1 and Q4 reporting overlap the preparation of the annual financial statements and the annual report. This means that companies have more workload towards the end of the year and early in the following year, because they have to prepare three reports that require the same degree of attention. This leads to a conflict of interest in the company when preparing such reports.

6.4.1.2 Means for timeliness between quarters (H_{1b})

Table 6.9 Comparison of means for timeliness (number of days) between quarters

	Q1	Q2	Q3	Q4
<i>Mean rank</i>				
2005	2.02	1.96	2.23	2.01
2006	2.10	2.22	2.00	1.93
2007	1.88	1.83	1.93	2.06
<i>Friedman test</i>				
N	60	60	60	60
Chi-square	1.550	5.191	6.877	0.514
Df	2	2	2	2
p-value	0.461	0.075	0.032*	0.774

*significant at 0.05

The results in Table 6.9 report whether or not there is any significant difference in the means for timeliness between quarters. Again, the result for the mean rank does not show a systematic pattern. A closer inspection of Table 6.10, however, reveals that the mean rank for timeliness decreases from Q1 to Q2 for years 2005 and 2007. Yet, year 2006 reported an increase in the mean rank for similar periods. Further, the mean rank increases in Q3 for 2005, and decreases in Q3 for year 2006 and 2007. The decreasing trend continues for Q3 and Q4 in years 2005 and 2006, and the trend increases for Q3 and Q4 in year 2007.

The result for the Friedman test shows a mixed result between quarters. For Q1, Q2 and Q4, the p-value is greater than 0.05, which concludes that there is no statistically significant difference between the means of timeliness for Q1, Q2 and Q4. In contrast, there is a statistically significant difference in mean rank for timeliness for Q3, since the p-value is at the 5% significance level. The conclusion reached for Q2 is expected due to the reporting lag being more or less similar for this quarter for these three years. Q3 yields a similar result. As for Q1 and Q4, a significant difference should be observed/expected because the reporting lag for each quarter for all three years is more variable and companies take longer to produce their quarterly reports since they are busy with their annual report.

6.4.1.3 Means for timeliness between industries (H_{1c})

Table 6.10 Comparison of the means for timeliness across industries

	2005				2006				2007			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Trading/ Service	34.52	31.81	26.86	28.81	32.64	31.40	29.67	27.95	28.00	29.12	27.98	29.79
Industrial	32.56	34.44	33.61	27.56	30.78	32.44	26.72	32.72	30.33	29.17	32.83	28.94
Consumer	27.50	25.95	29.95	34.00	25.10	27.85	27.75	37.60	31.25	25.35	24.45	37.95
construction	29.50	32.10	44.30	41.70	34.80	27.20	43.00	34.50	36.70	45.70	45.10	32.80
property	31.75	39.38	43.00	43.13	49.13	45.75	53.63	32.38	50.63	51.25	52.88	44.13
infrastructure	25.60	20.60	23.50	27.80	27.30	20.40	25.30	21.20	28.80	22.20	28.10	23.10
plantation	25.63	34.25	34.13	18.00	24.00	32.13	24.38	25.00	19.13	27.63	23.00	21.13
technology	16.00	17.25	8.25	22.50	6.75	25.25	17.75	32.35	25.00	23.75	16.50	12.00
Chi-Square	3.680	5.307	10.648	7.672	10.613	5.562	12.362	4.449	8.384	12.076	14.058	8.906
df	7	7	7	7	7	7	7	7	7	7	7	7
p-value	.816	.623	.155	.362	.156	.592	.089	.727	.300	.098	.060	.260

*significant at 0.05

The Kruskal Wallis (K-W) test was used to compare the means for timeliness for three or more industries, and the results are reported in Table 6.10. The p-value for Q1 to Q4 is more than 0.05 for years 2005 to 2007. This result reveals that the null hypothesis cannot be rejected and it can be concluded that there is no statistically significant difference in the means of timeliness between industries from Q1 to Q4 for the three years. It suggests that there is no “industry effect” on the number of days taken by a company to produce quarterly reporting. A good explanation for such a result is that the regulation states only the allowable period for all listed companies (that is, 60 days), and there is no mention of industry type. Therefore, this result is consistent with the reporting regulation.

6.4.1.4 Means for timeliness between groups (H_{1d})

Table 6.11 Means for timeliness between groups

Year	Qtr	Group	Mean	z-value	p-value
2005	Q1	2	43.00	4.023	0.159
		4	50.91		
	Q2	2	45.00	3.246	0.595
		4	50.49		
	Q3	2	36.00	3.133	0.008*
		4	52.74		
	Q4	2	58.86	3.122	0.652
		4	56.00		
2006	Q1	2	48.86	3.775	0.380
		4	51.92		
	Q2	2	43.29	3.706	0.148
		4	51.98		
	Q3	2	43.57	3.516	0.041*
		4	50.89		
	Q4	2	47.14	2.876	0.002*
		4	56.02		
2007	Q1	2	51.43	3.781	0.817
		4	51.81		
	Q2	2	44.57	3.231	0.356
		4	51.32		
	Q3	2	43.00	3.105	0.087
		4	51.04		
	Q4	2	55.00	1.833	0.218
		4	56.32		

*significant at 0.05

The Mann-Whitney U test is used to test for differences in the means for timeliness between Group 2 and Group 4. The tests reveal that the p-values for years 2005 to 2007 are greater than 0.05 for all quarters at the 5% level of significance, except for Q3 in 2005 and 2006 and Q4 in 2006. Therefore, the null hypotheses for Q1, Q2 and Q4 for year 2005, Q1 and Q2 for year 2006, and Q1 to Q4 for year 2007 cannot be rejected, which concludes that there is no statistically significant difference in the means for timeliness between Group 2 and Group 4 for the respective periods. As for Q3 in 2005 and Q3 and Q4 in 2006, the results indicate that there is a statistical difference in the means for timeliness between Group 2 and Group 4 at the 5% significance level. The first part of the results are as expected since the difference between these two groups is mainly due to the disclosure item and not the reporting lag. As such, a statistical difference due to the reporting lag should not exist. However, the result for the second part is in the opposite direction. Upon reviewing the reporting lag for the respective periods, one obvious conclusion is that most of the companies during these periods (Q3 of 2005, Q3 and Q4 of 2006) are taking longer than the allowable period of 60 days. Hence, this situation is being reflected in the results.

6.4.2 Disclosure index

This section discusses all the test of hypotheses related to the disclosure index as hypothesised in subsections b and d of Section 4.3.1:

H_{2a} : There is no difference in the means of the disclosure index across years

H_{2b} : There is no difference in the means of the disclosure index between quarters

H_{2c} : There is no difference in the means of the disclosure index between industries

H_{2d} : There is no difference in the means of the disclosure index for each group

H_{2e} : There is no difference in the means of the disclosure index between groups

6.4.2.1 Means for the disclosure index across years (H_{2a})

Table 6.12 Comparison of means for the disclosure index between quarters for 2005 to 2007

Year	Quarter	Mean	p-value
2005	Q1	0.8909	0.139
	Q2	0.8864	
	Q3	0.8882	
	Q4	0.8899	
2006	Q1	0.8961	0.016*
	Q2	0.8917	
	Q3	0.8921	
	Q4	0.8962	
2007	Q1	0.8977	0.904
	Q2	0.8960	
	Q3	0.8960	
	Q4	0.8962	

*significant at 0.05

A one-way repeated measures analysis of variance (ANOVA) was conducted to compare the means of the disclosure index by years, and the results are presented in Table 6.12. P-values of 0.139 in year 2005, 0.016 in year 2006, and 0.904 in year 2007 are greater than the criterion value of 0.05 (except for year 2006). Therefore, the null hypothesis cannot be rejected, and it can be concluded that there is no statistically significant difference in the means for the disclosure index for years 2005 and 2007. This result indicates that the content of disclosure between quarters for years 2005 and 2007 is the same. In similar words, companies are practising cut and paste activities between quarters for these two years. In contrast, the result for 2006 indicates that there is a significant difference in means for the disclosure index for Q1 to Q4. This suggests that there is a difference in disclosure content for

each company from one quarter to another quarter for this year. A possible explanation for this finding may be due to the high level of compliance with the disclosure requirement between quarters for year 2006.

6.4.2.2 Means for the disclosure index between quarters (H_{2b})

Table 6.13 Comparison of means for the disclosure index across years for Q1 to Q4

Quarter	Year	Mean	p-value
Q1	2005	0.8909	0.306
	2006	0.8962	
	2007	0.8977	
Q2	2005	0.8864	0.123
	2006	0.8917	
	2007	0.8960	
Q3	2005	0.8882	0.295
	2006	0.8921	
	2007	0.8953	
Q4	2005	0.8899	0.257
	2006	0.8962	
	2007	0.8962	

The same conclusions from Table 6.12 can also be made for Table 6.13 for the means for the disclosure index since the p-value is more than 0.05 across years for Q1 to Q4. This result implies that the null hypothesis cannot be rejected; it can therefore be concluded that there is no significant difference in means for the disclosure index between quarters. This result is expected, since, by observation, companies are practising ‘cut and paste’ activities throughout this period. It can be suggested that the purpose of producing the quarterly report is just to comply with the requirement.

6.4.2.3 Means for the disclosure index across industries (H_{2c})

Table 6.14 Comparison of means for the disclosure index across industries

Year	Industries	Q1			Q2			Q3			Q4		
		Mean	F	p-value	Mean	F	p-value	Mean	F	p-value	Mean	F	p-value
2005	Trading/Services	0.8934	.493	.836	0.8872	.961	.469	0.8909	.921	.498	0.8901	.828	.569
	Industrial	0.8951			0.8875			0.8865			0.8945		
	Consumer	0.8996			0.8881			0.8886			0.8867		
	Construction	0.8834			0.8967			0.9047			0.9055		
	Property	0.8669			0.8475			0.8475			0.8525		
	Infrastructure	0.8804			0.8719			0.8751			0.8776		
	Plantation	0.8902			0.9083			0.9029			0.9105		
	Technology	0.8975			0.9094			0.9088			0.9088		
2006	Trading/Services	0.9013	.516	.818	0.8951	1.230	.304	0.8943	0.962	0.468	0.9019	1.041	.415
	Industrial	0.8961			0.8858			0.8928			0.8938		
	Consumer	0.9010			0.9061			0.9002			0.9017		
	Construction	0.8991			0.8986			0.8992			0.8992		
	Property	0.8727			0.8441			0.8444			0.8458		
	Infrastructure	0.8877			0.8886			0.8936			0.9022		
	Plantation	0.8898			0.8877			0.8886			0.8886		
	Technology	0.8920			0.9044			0.9060			0.9111		
2007	Trading/Services	0.9043	.675	.692	0.9037	1.661	.139	0.9008	1.526	.179	0.9016	1.237	.300
	Industrial	0.8959			0.8910			0.8945			0.8931		
	Consumer	0.9020			0.9036			0.9043			0.9037		
	Construction	0.8968			0.9073			0.9090			0.9027		
	Property	0.8615			0.8319			0.8303			0.8398		
	Infrastructure	0.8933			0.8964			0.8993			0.9040		
	Plantation	0.8952			0.9094			0.8959			0.8952		
	Technology	0.9038			0.8960			0.8819			0.8947		

Table 6.14 indicates the means of the disclosure index across industries. ANOVA repeated measures were conducted to explore the relationship. Since the p-value is greater than 0.05, the null hypotheses cannot be rejected, and it can be concluded that there is no significant difference in the means for the disclosure index across industries. This is not unexpected since the disclosure requirement is the same for all industries. The finding is consistent with studies by Tan and Tower (1999) and Tai *et al.* (1990), who found no evidence of any association between industry type and the degree of compliance.

6.4.2.4 Means for the disclosure index for Group 2 (H_{2d})

Table 6.15 Comparison of means for the disclosure index for Group 2

Year	Quarter	Mean	t-statistic	p-value
2005	Q1	0.9344	10.652	0.000*
	Q2	0.9390	18.287	0.000*
	Q3	0.9494	14.337	0.000*
	Q4	0.9546	23.829	0.000*
2006	Q1	0.9345	13.148	0.000*
	Q2	0.9390	14.730	0.000*
	Q3	0.9429	12.602	0.000*
	Q4	0.9409	10.072	0.000*
2007	Q1	0.9461	13.951	0.000*
	Q2	0.9507	16.247	0.000*
	Q3	0.9506	15.948	0.000*
	Q4	0.9414	11.196	0.000*

*significant at 0.05

One sample t-test was employed to derive the findings in Table 6.15. Since the p-value is less than 0.05, there is strong evidence to reject the null hypotheses. Hence, it is concluded that there is a significant difference in the means for the disclosure index for Group 2 between each quarter for all the three years. Group 2 here refers to companies that comply with *Reporting* but not *Listing*. In similar words, this group of company has the entire disclosure item for *Reporting* but there is a missing disclosure item in respect of *Listing*. This result indicates that the missing disclosure item could not be the same between companies for Group 2.

6.4.2.5 Means for the disclosure index for Group 4 (H_{2d})

Table 6.16 Comparison of means for the disclosure index for Group 4

Year	Quarter	Mean	t-statistic	p-value
2005	Q1	0.8852	20.652	0.000*
	Q2	0.8783	15.915	0.000*
	Q3	0.8814	16.553	0.000*
	Q4	0.8827	16.339	0.000*
2006	Q1	0.8919	23.900	0.000*
	Q2	0.8864	17.561	0.000*
	Q3	0.8864	17.354	0.000*
	Q4	0.8912	17.326	0.000*
2007	Q1	0.8913	20.255	0.000*
	Q2	0.8888	16.511	0.000*
	Q3	0.8880	15.611	0.000*
	Q4	0.8902	16.897	0.000*

*significant at 0.05

One sample t-test was employed to derive the findings in Table 6.16. Since the p-value is less than 0.05, there is a strong evidence to reject the null hypotheses. It is therefore concluded that there is a significant difference in the means for the disclosure index for Group 4 for all three years. Group 4 here refers to companies that do not comply with *Reporting* or *Listing*. In similar words, this group of company has missing disclosure items in respect to the disclosure requirement. Therefore, a possible explanation for such a result is that the missing disclosure item could not be the same between companies for Group 4.

6.4.2.6 Means for the disclosure index between groups (H_{2e})

Table 6.17 Comparison of means for the disclosure index between groups

Year	Qtr	Group	Mean	t-statistic	p-value
2005	Q1	2	0.9344	4.023	0.000*
		4	0.8852		
	Q2	2	0.9288	3.246	0.002*
		4	0.8808		
	Q3	2	0.9304	3.133	0.003*
		4	0.8826		
	Q4	2	0.9330	3.122	0.003*
		4	0.8842		
2006	Q1	2	0.9332	3.775	0.000*
		4	0.8913		
	Q2	2	0.9375	3.706	0.000*
		4	0.8857		
	Q3	2	0.9372	3.516	0.001*
		4	0.8861		
	Q4	2	0.9356	2.876	0.006*
		4	0.8909		
2007	Q1	2	0.9421	3.781	0.000*
		4	0.8918		
	Q2	2	0.9414	3.231	0.002*
		4	0.8900		
	Q3	2	0.9409	3.105	0.003*
		4	0.8893		
	Q4	2	0.9226	3.833	0.002*
		4	0.8927		

*significant at 0.05

An independent sample t-test was used to determine whether there is any statistical difference in the means for the disclosure index between Group 2 and Group 4. Table 6.17 reports that the p-values for all quarters for the three years are less than 0.05. Therefore, the null hypotheses are rejected, which concludes there is a statistically significant difference between the means for the disclosure index between these two groups for all quarters in year 2005 to 2007. These results are consistent with the results found in Table 6.15 and Table 6.16.

6.4.3 Hypotheses testing for dependent and independent variables

The most extensive data analysis in this study will involve the testing of the hypotheses that have been generated. The section will start with univariate and multivariate analyses for levels of disclosure. The univariate analysis was first carried out to examine the separate association between the dependent and the independent variables. It describes the relationship between two continuous variables in terms of the strength and the direction of the relationship. The multivariate analysis was then performed to answer how the hypotheses relate to the association between level of disclosures and timeliness with company attributes, respectively as laid out in section 4.3.2.1 and 4.3.2.2.

6.4.3.1 Univariate test for mandatory disclosure

Table 6.18 Pearson's correlation between level of and each of the five independent variables for Q1 to Q4

Level of disclosure and	Q1		Q2		Q3		Q4	
	Correlation Coefficient	p-value	Correlation Coefficient	p-value	Correlation Coefficient	p-value	Correlation Coefficient	p-value
Company size	0.143**	0.055	0.135*	0.070	0.197***	0.008	0.190***	0.010
Liquidity	-0.086	0.250	-0.128*	0.086	-0.182***	0.015	-0.189***	0.011
Profitability	0.034	0.654	0.079	0.292	0.162**	0.030	0.143**	0.056
Leverage	-0.020	0.786	0.033	0.661	0.061	0.417	0.092	0.220
I industrial	0.010	0.892	-0.035	0.642	-0.006	0.932	-0.003	0.970
I consumer	0.079	0.291	0.088	0.238	0.063	0.400	0.036	0.634
I construction	-0.016	0.828	0.071	0.343	0.091	0.225	0.062	0.412
I property	-0.221***	0.003	-0.334***	0.000	-0.331***	0.000	-0.312***	0.000
I infrastructure	-0.070	0.351	-0.043	0.569	-0.019	0.804	0.004	0.959
I plantation	-0.025	0.737	0.029	0.704	0.026	0.734	0.026	0.728
I technology	0.016	0.833	0.076	0.312	0.032	0.674	0.049	0.516

Correlation is *for 0.10 significance level

**for 0.05 significance level

***for 0.01 significance level

Table 6.18 presents the results of the Pearson correlation analysis for the level of disclosure and each of the five independent variables for Q1 to Q4. The following conclusions are essentially based on a bi variate analysis that does not control for the effects of other variables. For company size, the findings reveal that the p-value is significant at the 5% level for Q1, at the 10% level for Q2 and at the 1% level for Q3 and Q4. Thus, the hypothesis (H_3) is rejected, which concludes that there is an association between company size and level of disclosure. This is consistent with the Tan and Tower's (1999) study.

For leverage, measured by the debt ratio, the p-value is greater than 0.05 for all quarters. There is no evidence to reject the hypothesis (H_4), thus concluding that there is no association between level of disclosure and leverage.

As for liquidity, the Pearson correlation indicates p-values of 0.086(Q2), 0.015(Q3) and 0.011(Q4). Therefore, for Q2, Q3 and Q4, the hypothesis (H_5) is to be rejected at 10%, 1% and 5% levels of significance, respectively. This shows that there is a negative association between liquidity and the level of disclosure for Q2, Q3 and Q4. However, not for Q1, since the p-value is greater than 0.05. These findings are supported by literature such as Owusu-Ansah (2005), who found a relationship between disclosure and liquidity, but rejected by Wallace and Naser (1995).

For profitability, the p-value is less than at the 5% significance level for Q3 and the 10% level of significance for Q4. Therefore, the hypothesis (H_6) is rejected, which concludes that there is an association between the level of disclosure and companies' profitability for Q3 and Q4. However, hypothesis 6 is not rejected for Q1 and Q2, meaning that no association was found between profitability and level of disclosure. This result is consistent with the literature discussed in Section 4.3.2.1.4.

For industry-type (H_7), only property has a p-value at the 1% significance level, indicating that property has an association with the level of disclosure for all quarters.

6.4.3.2 Multivariate analysis

6.4.3.2.1 Choice of multivariate model

Multiple regression analysis is a technique to explore the direction and extent of the relationship between one continuous dependent variable and a number of independent variables or predictors. It will explain the determination of each independent variable that is relatively important for the explanation of the dependent variable. The data used in this study was extracted from 60 companies for four quarters across three years, resulting in 180 observations for each quarter. The ordinary least-squares regression technique was used to estimate the coefficients for the level of disclosure in the equation, and the Mann-Whitney U test for timeliness for each quarter.

6.4.4 Regression analysis

For this study, the observed variables are the extent of disclosure and timeliness. In order to answer the third research question (What company characteristics are associated with the level of disclosure and timeliness?), the regression equation is specified in the following model for the level of disclosure for each quarter:

Level of disclosure vs Independent variables:

$$DI_J = \beta_{0,1} + \beta_{1,1} CO_SIZE_J + \beta_{2,1} I_TYPE_J + \beta_{3,1} LIQD_J + \beta_{4,1} PFRT_J + \beta_{5,1} CO_LEV_J + e_{it}$$

Where:

- DI = the quotient of relative score as measured by the disclosure index for each quarter;
- β = the intercept
- CO_SIZE = Natural log of total assets at the end of the reporting period
- I_TYPE = Industry code according to Bursa Malaysia
- $LIQD$ = Quick ratio at the end of the reporting period
- $PRFT$ = Ratio of net profit to sales at the end of the reporting period
- CO_LEV = Debt to equity ratio at the end of the reporting period
- e = the unexplained variable error term
- i = quarter
- t = year

For timeliness, no model will be specified since the nature of the data of the reporting lag violates the assumption of parametric tests. Therefore, following previous literature, the Spearman correlation will be used to investigate the relationship between the dependent and independent variables. The Mann-Whitney U test will also be employed to complement the Spearman correlation (see Davies & Whittred, 1980; Dyer & McHugh, 1975; Ku Ismail, 2003).

6.4.5 Examination of the assumption underlying the regression analysis for individual variables

In order for the multiple regression analysis to be valid, the assumptions underlying the OLS regression must apply to both the individual dependent and independent variables, as well as to the relationship as a whole. This is important to ensure that the best possible results are obtained and are truly representative of the sample. The basic assumptions of OLS regression,

namely normality, linearity, homoscedasticity and outliers, are examined in the following sections.

The most fundamental assumption of OLS regression analysis is normality of the data. The normality test, as reported in Section 6.2, uses the Kolmogorov-Smirnov test, since it is a more specific statistical test suggested by Hair *et al.* (1998). A normal score transformation was applied to the independent variables with non-normal distributions. The linearity of the relationship was then examined using scatter plots for all variables. The results did not reveal any apparent nonlinear relationship. Further, identification of outliers was carried out by examining the data. This step is important since an outlier may have an influential impact on a regression analysis. It is important to identify data that may be influential, and to determine whether they should be excluded from the analysis¹⁸. Following Hair *et al.* (1998), outliers were identified using the following tests: Mahalanobis distance, Cook's statistics, leverage values, and identifying observations outside 2.5-3 standard deviations from the mean. A small selection of cases with extreme values was detected. Further examination revealed that they could not be considered unrepresentative of the population, and therefore were not excluded from the datasets. Another important assumption of OLS regression is homoscedasticity¹⁹, that all variances are equal. Examination of the studentised residual plots showed no sign of heteroscedasticity.

6.4.6 Multicollinearity tests

Another standard procedure that needs to be applied before undertaking multiple regression analysis is to test for multicollinearity. The results will enable the identification of variables that are highly correlated with one another, allowing appropriate action to be taken to avoid distorting the results (Rawlings, 1998). Table 6.19 contains the correlation matrix of independent variables.

¹⁸ Outliers should only be removed from the model if they are inappropriate representations of the population from which the sample is drawn (Hair *et al.*, 1998, p145).

¹⁹ Homoscedasticity is an assumption that the dependent variables exhibit equal levels of variance across the range values of the independent variables (Hair *et al.*, 1998). In contrast, if the level of variance of the dependent variables varies with the values of the independent variables, it is known as heteroscedasticity.

6.4.6.1 Correlation matrix

Table 6.19 Correlation matrix of independent variables

		CS	IND	QR	S	L
CS	Pearson Correlation	1				
	Sig. (2-tailed)	0.418(***)				
	N	720				
IND	Pearson Correlation	-.095(**)	1			
	Sig. (2-tailed)	.011				
	N	720	720			
QR	Pearson Correlation	-.308(***)	.168(***)	1		
	Sig. (2-tailed)	.000	.000			
	N	720	720	720		
S	Pearson Correlation	.082(**)	.044	-.018	1	
	Sig. (2-tailed)	.028	.240	.626		
	N	720	720	720	720	
L	Pearson Correlation	.338(***)	.031	-.071	.017	1
	Sig. (2-tailed)	.000	.405	.058	.648	
	N	720	720	720	720	720

Correlation is **for 0.05 significance level

*** for 0.01 significance level

An examination of Table 6.19 reveals that the range of bi-variate correlations is between 0.10 and 0.30, which indicates that the relationship between the independent variables is weak (Cohen, 1988, pp79-81). Therefore, it can be concluded that multicollinearity is not a problem since the bi-variate correlations are less than 0.7.

6.4.6.2 Collinearity test

Subsequently, collinearity test are performed to confirm the existence of multicollinearity, which may not be evident in the correlation matrix. Two statistics, namely tolerance and variance inflation (VIF), are given in Table 6.20. Tolerance is calculated using the formula $1 - R^2$. A small value (normally less than 0.10) will indicate that multiple correlations between the other variables are high, thus suggesting the possibility of multicollinearity (Pallant, 2007, p156). The VIF is the inverse of the Tolerance values (1 divided by Tolerance). VIF values (normally above 10) suggest the presence of multicollinearity. Therefore, the results of the Tolerance and VIF values in Table 6.20 confirm that multicollinearity is not an issue among the independent variables for Q1 to Q4.

Table 6.20 Tolerance and VIF for Q1 to Q4

	Q1		Q2		Q3		Q4	
	Tolerance	VIF	Tolerance	VIF	Tolerance	VIF	Tolerance	VIF
Company size	0.638	1.566	0.667	1.500	0.686	1.457	0.675	1.482
Leverage	0.637	1.571	0.619	1.616	0.649	1.541	0.621	1.611
Liquidity	0.817	1.225	0.855	1.170	0.853	1.172	0.861	1.161
Profitability	0.799	1.252	0.795	1.257	0.803	1.246	0.828	1.207
I_industrial	0.701	1.427	0.731	1.367	0.737	1.357	0.755	1.324
I_consumer	0.712	1.404	0.700	1.429	0.716	1.397	0.727	1.376
I_construction	0.802	1.247	0.781	1.281	0.754	1.327	0.761	1.314
I_property	0.865	1.157	0.867	1.153	0.865	1.156	0.857	1.167
I_infrastructure	0.825	1.213	0.838	1.193	0.834	1.200	0.820	1.219
I_plantation	0.815	1.226	0.788	1.269	0.792	1.263	0.797	1.255
I_technology	0.851	1.175	0.865	1.156	0.858	1.165	0.855	1.131

6.4.7 Results from multivariate analyses

Having confirmed the appropriateness of the results by the diagnostic tests, this section presents the regression analyses for the effects of company attributes, namely company size, leverage, liquidity, profitability and industries, on the levels of disclosure for Q1 to Q4.

Table 6.21 The effect of company attributes on mandatory disclosure for Q1 to Q4

Variables	The effects of company attributes on level of disclosure for :			
	Q1	Q2	Q3	Q4
Intercept	0.814	0.836	0.806	0.827
Company size	0.013**	0.009	0.013*	0.010
Leverage	-0.002	0.000	0.001	0.003
Liquidity	-0.002	-0.006*	-0.006	-0.006**
Profitability	0.002	0.004	0.008**	0.004
I_industrial	-0.001	-0.006	0.000	-0.005
I_consumer	0.006	0.013	0.015	0.010
I_construction	-0.009	0.004	0.009	0.000
I_property	-0.029***	-0.050***	-0.048***	-0.046***
I_infrastructure	-0.011	-0.008	-0.004	-0.006
I_plantation	-0.008	0.001	-0.003	0.002
I_technology	0.008	0.024	0.022	0.018
R	0.0308	0.410	0.044	0.409
R-squared	0.095	0.168	0.197	0.167
Adjusted R-squared	0.036	0.114	0.144	0.113
Standard error	0.0332	0.0379	0.0382	0.0388
F-statistic	1.605	3.090	3.740	3.069
p-value	0.101	0.001***	0.000***	0.001***
Degrees of freedom	179	179	179	179
Number of observation	180	180	180	180

Correlation is *for 0.10 significance level

**for 0.05 significance level

***for 0.01 significance level

Table 6.21 presents the multiple regression analysis between level of disclosure and corporate attributes. Looking at the p-values, the results indicate that the model for all quarters is significant at the 1% level, except for Q1. The R^2 statistics of 9.5% (Q1), 16.8% (Q2), 19.7% (Q3) and 16.7% (Q4) indicate a weak relationship between the dependent variables and the independent variables for the entire model. Further, the adjusted R^2 statistics are only 0.036 for Q1, 0.114 for Q2, 0.144 for Q3, and 0.113 for Q4, indicating that the equation explains about 4%(Q1), 11.4%(Q2), 14.4%(Q3) and 11.3%(Q4) of the variance in level of disclosure for each quarter. The results for Q2, Q3 and Q4 are close to the adjusted R^2 of 12.5% reported by Bradbury (1991) and 10.08% for Australian companies reported by Tan and Tower (1999) for interim disclosure studies. At the same time, the adjusted R^2 for Q1 is close to the 0.05 reported by Ku Ismail (2003). The low R^2 simply suggest that the explanatory variables do not comprehensively explain the variation in the dependent variables. From this result, questions arise as to why the overall model is not significant for Q1, since the preparation of quarterly reporting for this quarter is usually in conjunction with the preparation of the annual financial statements. This result suggests that companies focus more on the preparation of the yearly financial statement than on quarterly reporting. This tension should not exist since both statements are required by law and both should be treated with equal importance. Such situations should not happen if companies have in place proper systems and procedures for financial reporting. In other words, proper financial reporting systems will enable companies to deal with the current preparation of quarterly and annual financial statements. If this is related to Q4 of the model, this tension does not exist since the overall model is significant. This indicates that companies consider Q4 as an important statement in helping them prepare the annual financial statements.

For company size (H_3), the p-value for Q2 and Q4 are above 0.05, and this result implies that there is no association between company size and level of disclosure for these two quarters. However, the p-values for Q1 and Q3 indicate that the levels of disclosure for these two quarters are significant at the 5% level, and have a positive coefficient of 0.01. The mixed result for company size provides a confusing situation, and it is not consistent with the Pearson's correlation result in the previous section. As for the former result, it is expected since companies have to fully comply with the disclosure requirement, irrespective of their size. However, the findings for Q1 and Q3 suggest otherwise, although a possible explanation could be that bigger companies tend to disclose more than smaller companies. However, the strength and coefficient for Q1 and Q3 are weak and small, implying that there could be a slight difference in level of disclosure due to size. That means that the companies involved

tend to disclose more than what is required by the regulations. Hence, providing more information to investors could reduce uncertainties in decision making (Ku Ismail, 2003).

As for leverage (H_4), the p-value is above 0.05 for all quarters. Therefore, the null hypothesis cannot be rejected for the four models, and it is concluded that there is no association between leverage and level of disclosure. This result contrasts with studies by Schdewitz and Blevins (1998), Tan and Tower (1999), and Ku Ismail and Chandler (2005).

Next, the association between liquidity ratio and the level of disclosure (H_5) shows mixed results. For Q1 and Q3, the null hypotheses are not rejected at the 5% significance level, implying that there is no association between these two variables. This is consistent with Wallace and Naser (1995) for annual report studies. In contrast, the null hypotheses for Q2 and Q4 for liquidity are rejected at the 10% and 5% significance levels. Therefore, it is concluded that there is an association between liquidity and level of disclosure for Q2 and Q4, even though it is weak. Also, there is an inverse or negative relationship between these two variables, suggesting that a company that has liquidity as an ongoing concern will disclose more information in their interim reports. This action contradicts signalling theory, which suggests that companies that suffer losses will not disclose additional information. However, this result does seem to show that companies are willing to become more transparent in the eyes of investors.

Table 6.21 also reports that only profitability for Q3 is significant, with a p-value below 0.05. This implies that there is strong evidence to reject the null hypotheses (H_6), enabling the study to conclude that there is an association between profitability and level of disclosure. The direction and coefficient indicate a weak and positive association for this quarter. This means that companies with higher profitability will have higher levels of disclosure. This is consistent with arguments made by Ahmed and Courtis (1999), Cooke (1989) and Wallace and Naser (1995) that a highly profitable company is more likely to signal to the market its superior performance by disclosing more information. Further, Lang and Lundholm (1993, p250) noted that the “influence of a company’s profitability level on disclosure can be positive or negative depending on its performance”. However, the null hypotheses for Q1, Q2 and Q4 cannot be rejected at the 5% significance level, and it is concluded that there is no association between profitability and level of disclosure in these quarters. This finding is consistent with McNally *et al.* (1982) and Ahmed and Courtis (1999).

Industries are coded as “one” according to the industry group, and “zero” otherwise. Only seven industries are included in the regression analysis in order to avoid the “dummy variable

trap” (see Gujarati, 1995) and a singular matrix since industry is a dummy variable. The results in Table 6.21 indicate that only the null hypotheses (H_7) for the property industry are rejected at the 1% significance level for Q1. As a result, it can be concluded that there is a significant difference between the property industry and the industry base (trading/services) that was used. As for the other industries, the null hypotheses cannot be rejected at the 5% significance levels, and it is concluded that there is no significant difference between the other industries with the industry base for Q1 to Q4. This latter result is expected because, as highlighted earlier, the disclosure requirements do not differ from one industry to another. However, the association found between these two industries could be consistent with the suggestion made by Sprouse (1967) that accounting policies and techniques may vary by industry. Further, Owusu-Ansah (1998) outlined several reasons for these differences. First, certain industries are highly regulated due to their overall contribution towards a country’s export earnings or national income. Second, companies in certain industries may have difficulties in reporting adequately due to the nature of the work involved. Finally, disclosure differences may also be associated with the type of product line and the diversity of products of companies.

6.4.8 Diagnosis of the regression model

This section examines the model for robustness by addressing the issues of specification errors. Specification errors occur when a relevant variable is omitted from the model, or when an irrelevant variable is included in the model. It is first considered whether there are any variables omitted from the model by examining the residuals against predicted values. No noticeable patterns can be observed, so it is concluded that they are the residuals, thus, there are no signs of specification errors. With respect to the inclusion of an irrelevant variable in the model, the F -test²⁰ and t -test²¹ values were examined. The regression models are re-run by dropping one non-significant independent variable each time. The values of the F -test are then examined for each model. The results indicate that dropping one of the non-significant independent variables does not increase the power of the model in terms of the adjusted R^2 , standard error of the estimate, the F -test and t -test. It is thus concluded that the models are adequate, without any indications of the presence of unnecessary variables. Based on these two diagnostics tests, all the models are robust and free from specification errors.

²⁰ F -test is a measure of the overall significance of the regression model. It examines the joint significance of the estimated regression model.

²¹ T -test is for individual independent variables and examines the estimated regression model.

6.4.9 Association between timeliness and company characteristics

As mentioned earlier, due to the non-normal distribution of the reporting lags, the nonparametric tests, namely Spearman's correlation and the Mann-Whitney U test, will be employed in this study to determine the association between timeliness and company characteristics. Following Ku Ismail (2003), data for each of the four attributes (namely company size, leverage, liquidity and profitability) are divided into four quartiles in order to apply the Mann-Whitney U test. Data in the first and fourth quartiles are labelled for each attribute and tested to determine the association between attributes and timeliness. For industry, the Kruskal-Wallis test is employed, since it involves more than two groups. The industry will not be divided into quartiles due to different sample numbers for each industry. This section will report the univariate and Man-Whitney U tests carried out to determine the relationship between dependent variable and independent variable for timeliness.

6.4.9.1 Univariate test for timeliness

Table 6.22 Nonparametric Spearman's correlation between reporting lag and each of the five independent variables

Reporting lag and	Q1		Q2		Q3		Q4	
	Correlation Coefficient	p-value	Correlation Coefficient	p-value	Correlation Coefficient	p-value	Correlation Coefficient	p-value
Company size	0.258	0.000***	0.219	0.003***	0.296	0.000***	0.077	0.302
Profitability	-0.166	0.026**	-0.100	0.183	-0.120	0.110	-0.196	0.008***
Leverage	0.017	0.824	-0.080	0.287	-0.011	0.883	-0.028	0.704
Liquidity	-0.99	0.188	-0.106	0.156	-0.107	0.151	-0.027	0.716
I_trading/service	-0.072	0.340	-0.064	0.396	0.033	0.656	-0.065	0.390
I_industrial	0.042	0.572	0.078	0.299	0.051	0.497	0.056	0.453
I_consumer	-0.006	0.933	0.046	0.536	-0.056	0.457	-0.085	0.256
I_construction	0.102	0.174	0.060	0.423	-0.064	0.393	-0.083	0.268
I_property	0.045	0.546	0.09	0.904	0.130	0.082	0.035	0.638
I_infrastructure	-0.096	0.200	-0.098	0.190	-0.054	0.474	0.036	0.636
I_plantation	0.121	0.106	0.038	0.611	0.046	0.542	0.184**	0.013
I_technology	-0.121	0.105	-0.089	0.235	-0.137	0.066	0.005	0.949

Correlation is **0.05 significance level
 ***0.01 significance level

Table 6.22 reveals for company size that the reporting lag as measured by the number of days has a p-value of 0.000 for Q1 to Q3. Thus, the null hypothesis (H_0) is rejected, and it is concluded that there is an association between company size and reporting lag for these three quarters. This result contrasts with the studies by Tan and Tower (1999) and Al Bogami (1996), who found no relationship between reporting lag and company size. In contrast, the p-value for Q4 is greater than 0.05, thus the null hypotheses cannot be rejected, and it is concluded that there is no association between reporting lag and company size in Q4.

Table 6.22 also presents the correlation between reporting lag and profitability (H_9). The p-value is significant for Q1 and Q4 at the 0.01% level. Thus, the null hypothesis that there is no association between the reporting lag and profitability is rejected. In contrast, there is no association between profitability and reporting lag for Q2 and Q3, since the p-value is greater than 0.05.

For leverage (H_{10}), the p-value is greater than 0.05 for Q1 to Q4, which supports the null hypotheses that there is no relationship between reporting lag and leverage. As for liquidity (H_{11}), the p-value for all quarters is more than 0.05. Thus, the null hypothesis should not be rejected, and it is concluded that there is no association between reporting lag and liquidity. This finding is consistent with Boritz and Liu (2006).

From the correlation for industries in Table 6.21, the result indicates that the p-value is more than 0.05 for all industries in Q1 to Q4, except for plantation industries for Q4. This result indicates that there is no association between industries and reporting lag (H_{12}). This finding is in contrast to the studies of Robb (1980), Lunt (1982) and Al Bogami (1996).

6.4.9.2 Result of the nonparametric Mann-Whitney U test between reporting lags and company attributes

Following the tests performed by Dyer and McHugh (1975) and Ku Ismail (2003), each of the dependent (reporting lag) and independent variables (company size, profitability, leverage, liquidity and industries) are divided into quartiles. The following table presents the results of the Mann-Whitney U test and the Kruskal Wallis test.

Table 6.23 Results of nonparametric tests between reporting lag and corporate attributes

Independent variables	The effects of company attributes on reporting lag for :							
	Mean Rank Q1	p-value	Mean Rank Q2	p-value	Mean Rank Q3	p-value	Mean Rank Q4	p-value
Company size: Small Large	1800.00 2295.00	0.038**	1754.50 2340.50	0.014***	1675.50 2419.50	0.002***	1998.00 2097.00	0.678
Profitability: Low profitable High profitable	2367.00 1728.00	0.007***	2239.00 1856.00	0.107	2308.50 1786.50	0.028**	2295.00 1800.00	0.038**
Leverage: Lowly leveraged Highly leveraged	2082.50 2012.50	0.770	2125.50 1969.50	0.513	2195.00 1900.00	0.219	2097.50 1997.50	0.675
Liquidity: Low liquid High liquid	2259.00 1836.00	0.077*	2247.50 1847.50	0.093*	2169.00 1926.00	0.310	2065.00 2030.00	0.882
Trading/service	91.97	0.008***	89.41	0.018**	83.03	0.000***	86.37	0.023**
Industrial	96.30		94.33		93.74		89.17	
Consumer	86.18		82.27		83.77		106.97	
Construction	101.30		102.67		125.63		109.57	
Property	131.17		137.96		147.00		114.67	
Infrastructure	83.40		66.70		77.97		72.80	
Plantation	56.17		84.92		76.50		59.46	
Technology	48.67		71.17		46.50		67.83	

Correlation is *0.10 significance level
 **0.05 significance level
 ***0.01 significance level

Data in Table 6.23 are derived from the Mann-Whitney U test for company size, profitability, leverage and liquidity, and the Kruskal Wallis test for industry. It shows that some of the mean ranks are confirmed with the direction of the correlation produced by Spearman's correlation, but some are not. For company size (H_8), the results are significant at the 1% level for Q1 and at the 5% level for Q2 and Q3. Thus, there is an association between reporting lag and company size for Q1, Q2 and Q3. Looking at the direction, the results indicate a positive relationship for these three quarters. However, for Q4, since the p-value is greater than 0.05, the null hypothesis cannot be rejected at a 5% significance level. Thus, it is concluded that there is no association between these two variables. The results for Q1, Q2 and Q3 show that larger companies report earlier than smaller companies, which is consistent with most of the previous literature concerning this determinant. This result is not unexpected because large companies usually possess sophisticated information systems that enable them to process information more efficiently than smaller companies. However, the result for Q4 is unexpected, although processing data for both a quarterly report and the annual report concurrently would be a major task for any size of company. Still, this result could be meaningful because the maximum allowable period granted to a company does not depend on its size.

As for profitability (H_9), the null hypothesis is rejected at the 1% significance level for Q1 and at 5% for Q3 and Q4. Thus, there is an association between reporting lag and profitability and it is a positive relationship for these three quarters. However, there is no association between these two variables for Q2. For Q1, Q3 and Q4, the result shows that highly profitable companies are taking a shorter time to produce interim reports than low profit companies. As suggested by signalling theory, highly profitable companies will tend to report without undue delay (i.e. a shorter reporting period as compared to poorly performing companies). This is in line with the suggestion made by Givoly and Palmon (1981) that earnings announcements containing good news might be made in advance, and bad news tends to be delayed. In addition, the result for Q2 is also expected since the reporting lag is a mandatory requirement that does not distinguish between high and low profit companies. It applies equally to all Malaysian companies.

The Mann-Whitney U test result also shows that there is no association between leverage and reporting lags (H_{10}) for all quarters because the criterion value is greater than 0.05. This is contrary to studies by Owusu-Ansah (2000) and Owusu-Ansah and Leventis (2006). It is contrary to the competing view in the literature concerning the association between leverage and timeliness, and the agency theory argument that posits that highly leveraged companies will have prompt disclosure on a more frequent basis to give opportunities to the debt holders to reassess the long term financial performance or position of companies (Owusu-Ansah, 2000).

For liquidity (H_{11}), the p-value is significant for Q1 and Q2 at the 10% significance level. Thus the null hypothesis is rejected for both quarters, and it is concluded that there is an association between liquidity and reporting lag and it is positively associated. However, the p-value is more than 0.10 for Q3 and Q4, and it is therefore concluded that the null hypotheses cannot be rejected (i.e. there is no association between liquidity and timeliness for Q2 and Q4). These mixed results suggest that companies with high liquidity are taking a shorter time to produce quarterly reports, as compared to companies with low liquidity.

For industry (H_{12}), the p-value is less than 0.05 for all quarters. Therefore, the null hypothesis is rejected, and it is concluded that there is an association between industry type and reporting lag. These results suggest the presence of an 'industry effect' on the number of days taken by companies to produce quarterly reports.

6.5 Extent of disclosure

This section will report the variation in the extent of disclosure for eight “notes” associated with quarterly reports. The justification for selecting these notes only has been discussed in Section 5.3.3.

6.5.1 Comment on seasonality and cyclicity

Table 6.24 Comment on seasonality and cyclicity (%)

	2005				2006				2007			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Due to festive season	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	11.7	11.7	11.7	11.7
Due to festive season with few comments	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7
Not applicable	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	76.7	76.7	76.7	76.7
Total	100	100	100	100	100	100	100	100	100	100	100	100

The analysis in Table 6.24 shows that the majority of companies, 75% in 2005 and 2006 and 76.7% in 2007, do not comment on seasonality and cyclicity. This means that their activities are not significantly affected by the festive seasons. Of the 25% of the companies that made comments on seasonality and cyclicity for 2005 and 2006, approximately 11.7% stated that their principal activities are influenced by festive seasons and they made extensive comments on how these festive seasons affect their business. Examples of extensive comments are when the company highlights the festive seasons that affect their business operations and describes the effect on their turnover. The remaining companies only stated that their businesses are affected by festive seasons, which can be considered as a common wording among these companies. For 2006, an equal proportion of companies stated that their businesses are affected “due to festive season” or “due to festive season with few comments”.

6.5.2 Review of performance

Bursa Malaysia requires companies to disclose a review of performance as follows:

“A review of the performance of the company and its principal subsidiaries, setting out material factors affecting earnings and/or revenue of the company and the group for the current quarter and financial year to date.”

(KLSE, 2001, Appendix 9B-06)

From the requirement, it is clear that a company must disclose their review of performance quarterly and yearly. The review of performance involves the holding company and all its subsidiaries, and they must disclose the significant factors that affect earnings. However, the

Listing Requirement does not specify the particular earnings indicator that should be reviewed (Ku Ismail, 2003). Therefore, a variety of earning indicators can be observed throughout the quarters for the three years as presented in Table 6.25 and Table 6.26.

Table 6.25 Review of the quarterly performance (%)

	2005				2006				2007			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
No Information	0.0	0.0	0.0	11.7	0.0	8.3	10.0	8.3	1.7	0.0	6.7	8.3
General explanation	0.0	0.0	0.0	0.00	1.7	1.7	0.0	0.0	1.7	3.3	1.7	0.0
Either profit before tax only or turnover only	3.3	13.3	13.3	1.7	1.7	1.7	1.7	1.7	0.0	1.7	1.7	0.0
Both PBTT	15.0	15.0	10.0	11.7	11.7	13.3	13.3	10.0	15.0	21.7	13.3	11.7
PBTT and explanation	75.0	63.3	68.3	66.7	78.3	66.7	66.7	71.7	70.0	66.7	68.3	66.7
PBTT and other performance measurement with explanation	6.7	8.3	8.3	8.3	6.7	8.3	8.3	8.3	11.7	6.7	8.3	13.3
Total	100	100	100	100	100	100	100	100	100	100	100	100

*PBTT= Profit before tax and turnover

Table 6.25 shows that between 63.3 and 78.3 percent of companies disclose the minimum requirement of “profit before tax, turnover and explanation about material factors” for all four quarters. A few companies (6.7 to 13.3 percent) go beyond the minimum disclosure requirement by including other performance measurements, such as economic profit statement, in their review of quarterly performance. However, the proportion of non-compliant companies is quite substantial for all four quarters. They either provide general explanations or state the earnings indicators in qualitative and quantitative form. Surprisingly, there are companies that do not make any quarterly disclosures that review performance. This is unacceptable since the requirement has been mandatory since 2002. Further, the sample companies are selected based on their market capitalisation, which means these companies are followed closely by financial analysts and investors. Failure to comply with the disclosure requirements will deprive investors of important information. Further investigation into the companies that do not comply with this requirement revealed that no enforcement actions or penalties were imposed on these companies. This reduces the credibility of the enforcement bodies. As found by Ku Ismail (2003), the review of performance is an important piece of information for investors, so the enforcement bodies should ensure compliance with this requirement.

Table 6.26 Review of the yearly performance (%)

	2005				2006				2007			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
No Information	N/A	33.3	33.3	35.0	N/A	35.0	0.0	33.3	N/A	31.7	31.7	33.3
General explanation	N/A	1.7	1.7	1.7	N/A	1.7	5.0	0.0	N/A	3.3	1.7	0.0
Either profit before tax only or turnover only	N/A	1.7	0.0	0.0	N/A	0.0	1.7	1.7	N/A	1.7	0.0	0.0
Both PBTT	N/A	1.7	5.0	5.0	N/A	5.0	23.3	6.7	N/A	23.3	8.3	41.7
PBTT and explanation	N/A	50.0	51.7	50.0	N/A	46.7	65.0	46.7	N/A	65.0	43.3	45.0
PBTT and other performance measurement with explanation	N/A	11.6	8.3	8.3	N/A	11.6	5.0	11.6	N/A	5.0	15.0	13.3
Total	100	100	100	100	100	100	100	100	100	100	100	100

*PBTT= Profit before tax and turnover

**N/A- not applicable

Table 6.26 shows the result for the yearly performance review which refers to the cumulative quarterly performance review. Therefore, the quarterly performance review for Q1 will be similar to the yearly performance review for Q1. Therefore, the disclosure requirement for the yearly performance review does not apply to Q1 in each year because the content for this requirement in Q1 for the yearly performance review will be the same as Q1 for the quarterly performance review. Accordingly, the results for the following subsequent quarter are cumulative figures from the quarterly performance review to the present yearly performance review. The result in Table 6.25 indicates that 46.7 to 65 percent of companies within Q1 to Q4 for the three years disclose the minimum requirement for the yearly performance review. In addition, there is a small percentage (between 5.0 to 13.3 percent) of companies that disclose more than the minimum requirement. The balance are non-compliant companies, ranging from companies that did not make any disclosures at all, gave a general explanation only, or stated the earnings indicators in the form of qualitative and/or quantitative disclosures. These findings suggest two important conclusions. First, companies might not exactly understand the Listing requirements. They could, for example, believe that a quarterly review is sufficient to comply with the Listing requirement. Second, these companies might understand but chose not to comply. Upon investigation, no enforcement action was taken against these companies or penalties imposed. In contrast, there are companies that gave considerable attention to carefully interpreting the disclosure requirements by extensively disclosing other performance measurements, together with explanations about material factors.

6.5.3 Material changes in the profit before taxation

Table 6.27 Material changes in the PBT

	2005				2006				2007			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
No information	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	0.0
General explanation	3.3	3.3	1.7	3.3	1.7	3.3	5.0	0.0	3.3	3.3	3.3	1.7
Either profit before tax only or turnover only	5.0	1.7	3.3	3.3	3.3	3.3	1.7	1.7	1.7	1.7	1.7	0.0
Both PBTT	21.7	21.7	20.0	20.0	20.0	20.0	23.3	25.0	21.7	23.3	25.0	25.0
PBTT and explanation	66.7	70.0	70.0	68.3	70.0	68.3	65.0	68.3	66.7	65.0	65.0	68.3
PBTT and other performance measurement with explanation	3.3	3.3	5.0	5.0	5.0	5.0	5.0	5.0	6.7	5.0	5.0	5.0
Total	100	100	100	100	100	100	100	100	100	100	100	100

*PBTT= Profit before tax and turnover

**PBT= Profit before tax

Bursa Malaysia requires companies to make “an explanatory comment on any material change in the profit before taxation for the quarter reported on as compared with the immediate preceding quarter” (KLSE, 2001, Appendix 9B-06). In a similar way, companies are required to explain the reason for material changes in profit before taxation between quarters. From the result in Table 6.27, it appears that most of the companies (65 to 70 percent for all three years) complied with the minimum requirement that is “profit before tax, turnover and explanation about material factors”. Further, between 3.3 to 5.0 percent made a disclosure beyond the minimum requirement by including other performance measurements, together with an explanation about material factors. The explanation involved explaining the changes against the preceding quarter, and whether the changes give a positive or negative impact on the overall company’s performance. Table 6.27 also indicates that a small percentage of companies make extensive disclosures, namely, “profit before tax, turnover and other performance measurement together with explanation about material factors”. An example of another performance measurement disclosure is an economic profit statement and an explanation of this indicator. Further, the rest of the companies can be found to make a general explanation or state the earning indicators in the form of profit before tax or turnover, and the table suggests that only one company did not make any disclosures (in Q2 2007). All of these can be grouped as non-compliant companies. Attention should be given to the reasons those companies failed to make any disclosures, or failed to comply with the minimum

requirement as stated by regulation. Otherwise, the enforcement bodies will be questioned on their efficiency to enforce regulations for which they are responsible.

6.5.4 Report on future prospects

Table 6.28 Company prospects (future)

	2005				2006				2007			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
No projection	0.0	5.0	1.7	0.0	0.0	0.0	1.7	0.0	0.0	0.0	0.0	0.0
General projection	83.3	80.0	81.7	85.0	80.0	80.0	73.3	73.3	75.0	70.0	68.3	63.3
Projection with specific comment	16.7	15.0	15.0	15.0	20.0	20.0	25.0	26.7	25.0	30.0	31.7	36.7
Total	100	100	100	100	100	100	100	100	100	100	100	100

With regard to future prospects, companies are expected to disclose the following in the interim report:

“Commentary on the prospects, including the factors that are likely to influence the company’s prospect for the remaining period to the end of the financial year of the next financial year if the reporting period is the last quarter.”

(KLSE, 2001, Appendix 9B-06)

This means that companies need to comment on the factors that might affect their future performance for the rest of the quarter. Upon reviewing the quarterly reports, the majority of companies (between 63.3 and 85 percent for Q1 to Q4 for all three years) meet this minimum requirement. Companies are stating future prospects in general without reference to specific indicators. Likewise, the balance of the companies (between 15 and 36.7 percent) chose to make extensive disclosures by specifying the type of factors (such as a joint venture business with other companies) or economic factors (such as a new government policy for trading).

6.5.5 Report on current progress

Table 6.29 Company progress

	2005				2006				2007			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
No comment	53.3	53.3	56.7	56.7	55.0	55.0	56.7	55.0	55.0	53.3	53.3	55.0
General comment	28.3	28.3	26.7	26.7	26.7	23.3	18.3	16.7	16.7	15.0	15.0	15.0
Specific comment	18.3	18.3	16.7	16.7	18.3	21.7	25.0	28.3	26.7	30.0	30.0	30.0
Total	100	100	100	100	100	100	100	100	100	100	100	100

Where a statement of the company's progress is concerned, a listed company is required to disclose a "commentary on the company's progress to achieve the revenue or profit estimate, forecast, projection or internal target in the remaining period to the end of the financial year and the forecast period which was previously announced or disclosed in a public document and steps taken or proposed to be taken to achieve revenue or profit estimate, forecast, projection or internal targets" (KLSE, 2001, Appendix 9B-06). In other words, the company not only has to project its future performance, but it must also provide an insight into the company's current performance. The company needs to comment on the steps taken to achieve its target revenues, as compared to the announcements it made earlier in the media or newspapers. The result in Table 6.29 shows that more than 50% of the companies do not make any comments on company progress for Q1 to Q4. This result is extremely poor because companies are expected to give extensive comment about the companies' progress against their forecast throughout the year by relating this to other factors, and not solely focusing on the earnings indicators being disclosed in the performance review. Nevertheless, between 15 and 27 percent of the companies make general comments that are hardly helpful for investors to evaluate the direction of the companies' prospects. The general comment basically reviews the current quarter's performance by comparing that result with those of the last quarter, or expressing a general optimism or pessimism for the current year. Another verbatim comment made is "Barring any unforeseen circumstances, the Directors expect the Group to continue to achieve satisfactory performance in the current financial year." As stated by Ku Ismail (2003), this sweeping statement is common among the quarterly reports. This is rather surprising given the fact that this mandatory requirement has been in place since 2002. Again, the issues on whether preparers understand or chose to ignore the requirement arose.

6.6 Board of Directors' opinion

Table 6.30 Board of Directors' opinion

	2005				2006				2007			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
No information	96.7	95.0	98.3	98.3	96.7	96.7	96.6	95.0	95.0	90.0	5.0	91.7
State not applicable	1.7	1.7	1.7	1.7	1.7	1.7	1.7	3.4	3.3	10.0	95.0	8.3
State that no forecast or projection has been made	1.7	3.3	0.0	0.0	1.7	1.7	1.7	1.6	1.7	0.0	0.0	0.0
Total	100	100	100	100	100	100	100	100	100	100	100	100

For the Board of Directors' opinion, companies are required to disclose “a statement of the board of directors' opinion as to whether the revenue or profit estimates, forecast, projection or internal targets in the remaining period to the end of financial year and the forecast period which was previously announced or disclosed in a public-document are likely to be achieved” (KLSE, 2001, Appendix 9B-06). Quarterly reporting does not provide “Chairman Statements” like the annual report. Therefore, this disclosure item is substantial because it provides a Board of Directors' opinion on every aspect of the company's current performance. Since quarterly reports are regarded as a short-term communication to investors, while waiting for the annual report, this disclosure will give the investors a better understanding of the company's performance. However, the result in Table 6.30 is unfavourable because more than 90% of the companies did not make any comment at all. Their silence may be for two reasons. First, companies are using other means, such as public release, to comment on this issue. Second, companies do not consider this disclosure as important to investors, and therefore choose not to make any comment. Further investigation of the non-compliant companies reveals that the majority of the companies (70%) fall into the second reason, and the rest of the non-compliant companies make these disclosures by press releases. Even then, some do not make the required disclosure in any of the quarters in the year. For some of the companies that do comply, no extensive comment could be found. They commonly made a sweeping statements such as “not applicable” or “no forecast or projection has been made”.

6.7 Profit forecast

Table 6.31 Profit forecast

	2005				2006				2007			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
No information	0.0	0.0	1.7	0.0	1.7	1.7	0.0	1.7	5.0	5.0	5.0	5.0
Only QF without variance and shortfall	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Only QF for the variance and shortfall	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
QF with explanation	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
QF with explanation and steps taken	0.0	3.3	0.0	0.0	0.0	0.0	1.7	1.7	0.0	0.0	0.0	0.0
Not applicable	100	96.7	98.3	100	100	98.3	98.3	96.7	95.0	95.0	95.0	95.0
Total	100	100	100	100	100	100	100	100	100	100	100	100

*QF – quantitative figure

The Listing requirements state that companies have to provide the following disclosure:

“Explanatory note applicable to the final quarter for companies which have previously announced or disclosed a profit forecast or profit guarantee in a public document by stating the variance of actual profit after tax and minority interest and the forecast profit after tax and minority interest (where the variance exceeds 10%) and shortfall in the profit guaranteed received by the company (if any) steps taken to recover the shortfall.”

(KLSE, 2001, Appendix 9B-06)

The result reveals that the majority of the requirement is not applicable to the companies, which means that the compliance rate for this disclosure is between 95 and 100 percent for Q1 to Q4 for all three years. A small percentage of non-compliance can also be found in Table 6.31. However, there are a few companies that do provide extensive disclosures on this item by stating the quantitative figure with explanation about the variance and shortfall, and the steps taken to recover the shortfall.

6.8 Conclusion

This chapter presents the results of the data analysis for this study. It provides evidence on the level of disclosure for interim reporting in Malaysia with respect to timeliness, compliance and extent of disclosure. Descriptive statistics, univariate tests and multivariate tests were performed to provide answers to the research questions of this study (as stated in Section 1.3). The data was examined before being analysed, and all underlying assumptions were tested. Preliminary analysis using univariate tests provides initial insight into the relationship between the dependent and independent variables.

With respect to timeliness, this study provides evidence from two perspectives. Firstly, to establish whether the interim reports are produced within the allowable period as required by regulation and secondly, to determine the number of days taken by Malaysian companies to produce their quarterly reporting. Further analysis was also performed to investigate the nature of disclosure compliance. The result of the Friedman test implies that there is a statistically significant difference in the mean rank of timeliness for years 2005 to 2007. In addition, mixed results were found in the mean rank of timeliness between Q1 to Q4 and the mean for timeliness between groups. However, using the Kruskal-Wallis test, no significant result was found for the mean of timeliness across industries. For the determinants of timeliness, the study reveals that there is a relationship between reporting lag and Q1, Q2 and Q4 for company size, Q1, Q3 and Q4 for profitability, and Q1 and Q2 for liquidity. Besides, all industries are significantly associated with the reporting lag.

Next, the disclosure index model was employed to determine the level of disclosure among Malaysian companies. Major findings on the levels of disclosure reveal that companies do not fully comply with the disclosure requirement. Further investigation on enforcement issues found no penalties or action taken against non-compliant companies. The one-way repeated measures analysis of variance revealed a mixed result for the mean of disclosure index across years. No significant difference in the mean disclosure index can be observed for years 2005 and 2007, but the difference is significant for 2006. Nevertheless, there is no significant difference in the means of the disclosure index between quarters and across industries. In addition, there is a significant difference for the means of the disclosure index for Group 2 (companies that comply with Reporting but not Listing), Group 4 (companies that do not comply with Listing or Reporting) and between these two groups. As for corporate attributes, company size for Q1 and Q3, profitability for Q3, and liquidity for Q2 and Q4 show a weak relationship with the level of disclosure. For industries, only properties have a significant difference with the industry base.

With respect to the extent of disclosure on quarterly notes, all notes that are subject to the users' interpretations are reviewed. However, only descriptive results are discussed in this study. The types of notes are as follows:

- Comment on seasonality and cyclicalities
- Review the performance (quarterly and yearly)
- Material changes in the profit before taxation
- Company's prospects (future and current)
- Board of Directors' opinion
- Profit forecast

For the extent of disclosure on quarterly notes, most of the companies are poor in disclosing discretionary information as laid out by the disclosure requirement. They chose to disclose merely to satisfy the minimum requirement. In addition, compliance with disclosure concerning the Board of Directors' comments and profit forecast was not made available. Further investigation on the action taken against these non-complaint companies on these quarterly notes showed that no enforcement actions or penalties were imposed. A question as to whether the preparers really understand the disclosure requirement arose, after the regular sweeping statement was seen over and over again in the quarterly reporting. Having presented the results, the last chapter (Chapter 7) will summarise the findings, interpret the implications

from the results, identify the limitations of the study, and highlight possible areas for improvement.

Chapter 7

Conclusion

7.1 Introduction

This study has examined the mandatory disclosure of interim financial reporting by Malaysian companies. The mandatory disclosures were measured from two aspects: timeliness and compliance with the disclosure requirement. The disclosure requirement comprises FRS 134 *Interim Financial Reporting* and Bursa Listing Requirement. In addition, several variables pertaining to firm characteristics that may be associated with the level of disclosure and timeliness were identified. Both univariate and multivariate analyses were conducted to explore the relationship between the dependent and independent variables. The data were examined before running the analyses. Basic assumptions underlying the multiple regressions were also examined to see if any violations existed. The estimated regression models were all diagnosed for their robustness. The major findings of the study will be summarised in the next section. Implications from the results will be discussed in the subsequent sections, followed by the limitations of the study. The final section will identify possible areas for future research.

7.2 Major findings of the study

This section summarises the major findings of the study. The findings will be discussed under the following headings:

- Timeliness of quarterly reporting
- Disclosure of quarterly reporting
- Determinants of disclosure and timeliness of quarterly reporting
- Extent of disclosure of quarterly reporting

7.2.1 Timeliness of quarterly reporting

This study provides evidence for timeliness from two perspectives. The first is to establish whether the interim reports are produced within the allowable period as required by regulation. Analysis of 60 Malaysian companies, based on market capitalisation as at 31 December 2004, found that compliance with respect to the mandatory reporting requirement outlined by MASB and Bursa Malaysia was high, with 93% to 100% between quarters and across years. Secondly, the study found that the mean times vary for each quarter for all three

years (2005 to 2007), and a longer time is needed to produce Q4. On average, Malaysian listed companies submit their reports between five and ten days before the due date. This result indicates that companies are taking as long as they can to submit their quarterly reporting. However, the time taken does not exceed the maximum allowable period. This finding reveals that companies are aware of the submission dateline. Compliance also indicates a company's seriousness in providing quarterly reporting to ensure investors have access to interim reporting that provides current information besides the annual report. However, companies tend to delay submission until the deadline is nearly reached, especially for Q4. Although most companies are submitting their interim reports within the allowable period, the average time taken to produce quarterly reports is longer, especially for Q4. The possible reason is because preparation of Q4 coincides with the preparation of the annual report. This situation should not happen because the fact that reporting is mandatory need not have any association with the time taken to prepare and publish these reports. Companies should have efficient reporting systems to ensure that the preparation of financial statements, especially annual reports, does not affect the preparation of interim reports.

Further analysis was carried out to investigate the nature of disclosure compliance. The findings revealed that the non-compliant companies belong to either Group 2 or Group 4. Group 2 refers to "Companies that comply with the Reporting but not the Listing" and Group 4 refers to "Companies that do not comply with both disclosure requirements". However, both groups are non-compliant companies. The result of cross-tabulation indicated that the majority of these non-compliant companies belong to Group 4. These companies were further scrutinised for items that are commonly not disclosed. For the listing requirement, the items are "Opinion from the Board of Directors" and "Review of the performance of the company and its principal subsidiaries for the current quarter and financial year to date". With respect to non-compliance with the reporting requirement, the common non-disclosure items are "Additional lines and items for the financial statements" and "Additional disclosure as required by FRS 3 Business Combination Para 66-73". These findings pose the question as to why these two items are commonly missing. Understanding what is required to be disclosed revealed that although explanatory notes are compulsory, the amount of disclosure provided is at the discretion of the preparer. This indicates that each preparer might have different opinions as to what items should be disclosed. Another possible reason for this missing disclosure could be because companies chose to disclose in other types of communication, such as press releases. Even if the item is being disclosed, the amount of disclosure is questionable, because the discretion of the preparer is very subjective. The most important thing is whether the disclosure meets the minimum requirement, as stipulated by the

regulation. The extent of disclosure carried out to determine the quality of disclosure can be found in Section 7.2.4.

This study also found that there is a statistical difference in the means of timeliness across years (2005 to 2007). However, there is no statistical difference in the means of timeliness between quarters for Q1, Q2 and Q4 for all three years. In contrast, there is a difference in means of timeliness between quarters for Q3 for years 2005 to year 2007, and in means for timeliness between groups. In addition, no significant result was found in the means of timeliness across industries. From this result, a conclusion can be drawn that the time taken to produce quarterly reports for Q1 varied between 2005 and 2006, and between 2006 and 2007 for the same quarter. This variation in the means of timeliness can be observed clearly, especially for Q1 and Q4, because the company is facing two major tasks during this period, namely, preparing the annual financial statement and the quarterly reporting.

7.2.2 Disclosure of quarterly reporting

Descriptive statistics revealed that full compliance was not achieved in any of the studied periods. Moreover, standard phrases for disclosure practices are repeated year by year. With respect to the means for disclosure, the study found that there was no significant difference in the means of the disclosure index for years 2005 and 2007, but not for year 2006. As for the means of the disclosure index across years for Q1 to Q4, the result implies no significant difference in the means of the disclosure index between quarters. A similar finding was also found for the means of the disclosure index across industry types. Further, the study also found there is significant difference in the means of the disclosure index of Group 2, Group 4 and between groups for the three years. This result implies that the level of disclosure does not vary from Q1 to Q4 (between quarters). This should not have happened because each of the reports should be treated differently. In fact, each quarterly report should be reporting on events that occurred during that period.

7.2.3 Determinants of the disclosure and timeliness of quarterly reporting

In order to investigate the relationship between the corporate attributes and the level of disclosure for each quarter, the least-squares technique was employed. Having confirmed all the underlying assumptions for regression analysis, the results revealed that the models for all quarters were significant, except for Q1. These findings highlight the conflict that the companies are facing when the preparation of interim report coincides with the preparation of the annual report. It indicates that companies might not have an efficient reporting system to help them deal with this major task. In addition, the study found that the corporate attributes

(company size for Q1 and Q3, profitability for Q3, and liquidity for Q2 and Q4) showed a weak relationship with the level of disclosure. As for industry type, only the property type had a significant difference with the industry-based (trading/services) type.

For the determinants of timeliness, due to the non-normal distribution of the reporting lag, the Mann-Whitney U test and the Kruskal Wallis test were employed in this study. The study found that company size for Q1, Q2 and Q4, profitability for Q3 and Q4, and liquidity for Q1 and Q2 had an association with reporting lag. Besides, all industries were found to have a relationship with the reporting lag. Therefore, this study concludes that the company attributes, company size, leverage, profitability, liquidity and industry that influence the mandatory disclosure are mixed.

7.2.4 Extent of disclosure for notes of quarterly reporting

With respect to the extent of disclosure, all notes in quarterly reports which are subject to interpretation of the users were reviewed. However, only descriptive results are discussed in this study. The types of notes are as follows:

- Comment on seasonality and cyclicalities
- Review the performance (quarterly and yearly)
- Material changes in the profit before taxation
- Company's prospects (future and current)
- Board of Directors' opinion
- Profit forecast

The overall findings conclude that most companies are poor in disclosing discretionary information, as laid out by the disclosure requirement. They chose to disclose merely to satisfy the minimum requirement. However, there are those who indicated "not applicable" if the compulsory notes to the account were not applicable for the respective period. In summary, the study found that, for "Comment on seasonality and cyclicalities", the majority of the companies made a disclosure that this item was not applicable to the company for Q1 to Q4. The remaining chose to include a sweeping statement that "*their business is subject to festive season*". However, a small number of companies that disclosed this sweeping statement did make an extensive comment in the notes for Q1 to Q4.

For "Review the performance", the findings are summarised into two sections: quarterly and yearly performance. Findings for this item show that the majority of the companies have a minimum disclosure requirement, as stated by the regulation for either quarterly or yearly

reports. In addition, there are a small number of companies who showed a good effort by disclosing beyond what is required.

Similar findings were also found for “Material changes in the profit before taxation”. The result implies that 65 to 85 percent of the companies for Q1 to Q4 make a general comment by disclosing profit before tax, turnover and explanation about material factors, which is the minimum disclosure for this note.

As for “Company’s prospects”, more than half of the companies chose not to disclose on this note for Q1 to Q4. The remaining provided only general comment on the company’s progress, with no specific indicator of performance used as a reference. In addition, findings for “Board of Directors’ opinion” and “Profit forecast” reveal that almost 100% of the Malaysian companies chose not to disclose these items. Even if they did, again, it was with a sweeping statement to indicate that these items are non-disclosable and not applicable.

7.3 Implications of the research findings

This study has examined the adequacy of mandatory disclosure for Interim Reporting among Malaysian listed companies for the period of 2005-2007. The findings reveal that compliance with the disclosure requirement is attainable despite a small percentage of non-compliant companies. As discussed previously, the Reporting requirements have legal backing, as stated in S26D Financial Reporting Act (Amendment) 2004. Therefore, non-compliant issues should not exist if all Malaysian listed companies observed and followed what is stated in the regulation. This is important since interim reporting has been recognised as one of the important mechanisms for the management to communicate with their investors.

As for timeliness aspects, the number of days taken to produce quarterly reporting is between five and ten days before the due date. Even though some Malaysian listed companies managed to produce interim reports within the allowable period, the time taken is too long when compared to the quality of interim reporting. When the first quarter report was compared with the other quarters, it revealed that the contents of the report are merely standard phrases from year to year. In fact, it is clear that companies are practising ‘cut and paste’ activities throughout the quarters. So it would be reasonable to expect that the number of days taken to issue the interim reports should reduce. However, this does not seem to be happening, since Malaysian listed companies are still taking a long time to produce the quarterly reports. In other words, the companies do not consider that early production of quarterly reporting will benefit their organisation. Therefore, it can be concluded that the purpose of producing the quarterly reports is mainly for the company to comply with the

regulation and to avoid a bad to reputation in the eyes of the enforcement bodies. The companies also fail to implement an efficient reporting system to help them deal with the preparation of quarterly reports.

Findings for the extent of disclosure on notes for quarterly reporting reveal that there are items that have not been properly disclosed. For example, the listing requirement required that the Board of Directors provide its opinion/comment on the progress of the company. The majority of the companies failed to comply. Upon investigation, the companies chose to make separate comments in either a press release or the company newsletter. This action is not consistent with what is required by the disclosure requirement. Another example is the profit forecast. The findings imply that most of the companies chose to state “Not applicable”. This, again, poses a question as to why such an important disclosure is not being given attention. Profit forecast is one of the important items that investors will read in order to have an idea about the company’s future performances. Such findings pose a question as to why these items are missing or not applicable. One possible reason could be that these items were disclosed in another medium of communication.

The regression result reveals that there is a mixed association between the level of disclosure and the variables. For example, an association can be found between the level of disclosure and the company size for Q1 and Q3, profitability for Q4, and liquidity for Q2 and Q4. However, the association is very weak. The finding provides an avenue for future research to investigate what will happen to this association when other variables, such as dividends and the number of shares, are added to the model. Similar research can also be conducted for the association between timeliness and company characteristics.

Overall, this study has identified areas of weaknesses relating to the enforcement of compliance regulations that should be addressed in the future. In addition, other variables can be added to the existing model, because the R-squared value is still low even though the overall model is significant. It suggests that the regulators or enforcement bodies should hold seminars and training for preparers in order to highlight issues regarding interim reporting. The seminars and training would also be a place for the preparers to discuss any issues pertaining to interim reporting. Hence, this action by the regulators or enforcement bodies not only would benefit the Malaysian listed companies, but it would add to the companies’ credibility in the eye of investors. It will also protect the investors’ interests because quarterly reporting provides the most current information on the company’s financial performance.

7.4 Limitations of this study

There are several limitations which should be considered when evaluating this study. Firstly, a content analysis was adopted and a disclosure index model was employed to measure the quality of disclosure. A review of the literature shows that the content analysis approach and the disclosure index model are commonly used in disclosure studies but the method of analysis and the model have their strengths and weaknesses. Nevertheless, the use of content analysis in this study has been justified and is empirically valid.

Secondly, the sample and industry groupings used in this study could diminish the accuracy of the result. This is because the sample consists of the top 100 companies, but after excluding companies that have incomplete data, the final sample size drops to 60 companies. In addition, some of the industry groupings have very small sizes, for example technology with only two companies, plantations and property with four companies

Thirdly, one of the issues that always arises during disclosure studies is how to distinguish between a 'non-disclosure' and a 'not applicable' item, because these two will affect the calculation of the level of disclosure. Hence, in order to have a clear picture of how to distinguish between these two items, the entire interim report was read.

Fourthly, this study only considered the quarterly report in order to determine whether the company has complied with the mandatory disclosure requirement. No other medium was used to capture the mandatory disclosure.

Fifthly, no inferential statistics concerning the extent of disclosure were run on the data. This study does not investigate the effectiveness of enforcement mechanisms for interim reporting. In addition, the time series could only be carried out for three years (2005 to 2007), considering the availability of the interim reporting and the date when the enforcement of FRS took place.

Sixthly, in attempting to ascertain which corporate attributes explain the variation in levels of disclosure and timeliness for Malaysian companies, some attributes such as corporate governance, audit committee and interim dividend which may be influential were not considered in this study. Thus, future research may investigate the effects of these corporate attributes on mandatory disclosures.

Finally, the meaning of 'adequacy' used in this study should be interpreted with extra caution. The word used in this study does not reflect the situation where information disclosed in the interim reporting is considered adequate, if it is capable of fulfilling users' needs. It only

considers ‘adequacy’ from compliance with the mandatory disclosure requirement of interim reporting. This concept is adopted from the Owusu-Ansah study.

7.5 Recommendations for future research

This is the first comprehensive study for disclosure studies involving quarterly reporting in Malaysia. It generates many possibilities for future research. Findings from this study suggest that a comparative study on compliance with quarterly reporting can be carried out with other countries (such as New Zealand and Australia) that have similar legal environments. In addition, this research has examined the relationship between the comprehensiveness of mandatory disclosure and firm characteristics, which are mostly a firm’s attributes. It would be interesting to know how the disclosure quality of interim reporting reacts to industry and market-specific variables (such as market share).

Further, the result of the regression equation shows a low level of R-squared for the level of disclosure and timeliness. Therefore, it is important to indicate the amount of dependent variable variation that was not explained. Exploring other variables that were excluded from the analysis which may affect the dependent variables (namely, level of disclosure and timeliness) may shed more light on the disclosure of quarterly reporting. Further study can also include the relationship of mandatory disclosure with audit and corporate governance characteristics.

In future, this study can also be repeated to observe any improvement on compliance issues and the level of disclosure. A longitudinal study and adjustment period have been considered for this study to ensure that the companies are practising what they are required to do, and not just sitting in their comfort zone while complying with the reporting regulation. Moreover, research can also be carried out on voluntary disclosure for quarterly reporting which includes other disclosures made for quarterly reporting in other communication media.

In addition, a study can be carried out on the awareness and understanding of interim reporting among the accounting practitioners. It is important to investigate their level of awareness and understanding of disclosure requirements for quarterly reporting. Further, research into the effectiveness of the enforcement mechanism will help towards studying the reasons for non-compliance among companies.

References

- Abdel-Khalik, R., & Espejo, J. (1978). Expectations data and the predictive value of interim reporting. *Journal of Accountancy Research*, 16(1), 1-13.
- Ahmed, K., & Courtis, J. K. (1999). Associations between corporate characteristics and disclosure levels in annual reports: a meta-analysis. *The British Accounting Review*, 31(1), 35-61.
- Ahmed, K., & Nicholls, D. (1994). The impact of non-financial company characteristics on mandatory disclosure compliance in developing countries: The case of Bangladesh. *The International Journal of Accounting Education and Research*, 29, 62-77.
- Ahmed, R.-B. (2001). Level of multinationality, growth opportunities, and size as determinants of analyst ratings of corporate disclosures. *American Business Review*, 19(2), 115.
- Ahmet, A., & Serife, Ö. (2007). Voluntary disclosure in Turkey: A study on firms listed in Istanbul Stock Exchange (ISE). *Problems and Perspectives in Management*, 5(3), 241.
- Al-Bogami, S. A. S. (1996). An examination of the usefulness of interim financial report statements to investors in the Saudi Market. *Unpublished PhD Thesis, University of Dundee, Scotland*.
- Alchian, A. A. (1969). Information costs, pricing and resource unemployment. *Western Economic Journal*, 7(June), 109-128.
- Allen, A., Cho, J. Y., & Jung, K. (1999). Cross country examination of characteristics and determinants of analyst's forecast errors. *The Mid-Atlantic Journal of Business*, 35(2/3), 119-133.
- Annaert, J., De Ceuster, M., Polfliet, R., & Van Campenhout, G. (2002). To be or not to be... "too late": The case of the Belgian semi-annual earnings announcements. *Journal of Business Finance and Accounting*, 29(3 and 4), 477-495.
- Bagshaw, K. (1999). Interim financial reporting: A guide to best practice. *London: Accountancy Book*.
- Bartlett, S., & Jones, M. J. (1997). Annual reporting disclosures 1970-90: an exemplification. *Accounting, Business and Financial History*, 7(1), 61-80.
- Belkaoui, A., & Kahl, A. (1978). *Corporate financial disclosure in Canada*. Paper presented at the Research Monograph No 1.
- Berelson, B. (1952). *Content analysis in communication research*. New York, U.S A: Stratford Press, Inc.
- Beresford, D. R., & Rutzler, J. E. (1976). A survey of the new look to financial reporting. *Financial Executive*, 44(9), 38-50.
- Boonlert-U-Thai, K., Patz, D. H., & Saudagaran, S. M. (2002). *An examination of timeliness of corporate financial reporting: empirical evidence from the Stock Exchange of Thailand*. Paper presented at the A paper presented at American Accounting Association 2002 Annual Meeting, San Antonio.
- Boritz, E., & Liu, G. (2006). *Determinants of the timeliness of quarterly reporting: Evidence from Canadian Firms: SSRN*.
- Botosan, C. A., & Harris, M. A. (2000). Motivation for a change in disclosure frequency and its consequences: An examination of voluntary quarterly segment disclosures. *Journal of Accounting Research*, 38(2), 329-353.
- Bradbury, M. E. (1991). Characteristics of firms and voluntary interim earnings disclosures: New Zealand evidence. *Pacific Accounting Review*, 3(1), 33-62.
- Bradbury, M. E. (1992). Voluntary semi-annual earnings disclosures, earnings volatility, unexpected earnings and firm size. *Journal of Accounting Research*, 30(Spring), 16-37.

- Buhr, N. (1998). Environmental performance, legislation and annual report disclosure: the case of acid rain in Falconbridge. *Accounting, Auditing and Accountability Journal*, 11(2), 163-190.
- Buzby, S. L. (1975). Company size, listed versus unlisted stocks, and the extent of financial disclosure. *Journal of Accounting Research*, Spring, 16-37.
- Capulong, M. V., Edwards, D., Webb, D., & Zhuang, J. E. (2000). Corporate governance and finance in east Asia: A study of Indonesia, Republic of Korea, Malaysia, Philippines and Thailand: A consolidated report, Manila, Philippines. *Asian Development Bank*.
- Carmines, E., & Zellner, R. (1979). Reliability and validity assessment. *Newbury Park CA: Sage Publications Inc.*
- Cerf, R. A. (1961). Corporate reporting and investment decisions. *Barkeley, California: The University of California Press.*
- Chambers, A. E., & Penman, S. H. (1984). Timeliness of reporting and the stock price reaction to earnings announcement. *Journal of Accounting Research*, 22(1).
- Chau, G. K., & Gray, S. J. (2002). Ownership structure and corporate voluntary disclosure in Hong Kong and Singapore. *The International Journal of Accounting*, 37(2), 247-265.
- Chen, S., DeFond, M. L., & Park, C. W. (2002). Voluntary disclosure of balance sheet information in quarterly earnings announcements. *Journal of Accounting and Economics*, 33(2), 229-251.
- Chow, C. W., & Wong-Boren, A. (1987). Voluntary financial disclosure by Mexican Companies. *The Accounting Review*, 62, 533-541.
- Christine, A. B. (1997). Disclosure level and the cost of equity capital. *The Accounting Review*, 72(3), 323-349.
- Clatworthy, M., & Jones, M. J. (2001). The effect of thematic structure on the variability of annual report readability. *Accounting, Auditing and Accountability Journal*, 14(3), 311-326.
- Cooke, T. E. (1989). Voluntary corporate disclosure by Swedish Companies. *Journal of International Financial Management and Accounting Summer*, 171-195.
- Cooke, T. E. (1991). An assessment of voluntary disclosure in the annual reports of Japanese corporations. *The International Journal of Accounting*, 26(3), 174-189.
- Cooke, T. E. (1992). The impact of size, stock market listing and industry type on disclosure in the annual reports of Japanese listed corporations. *Accounting and Business Research*, 22(87), 229-237.
- Cooke, T. E. (1993). Disclosure in Japanese corporate annual reports. *Journal of Business Finance & Accounting*, 20(4), 521-535.
- Coopers, & Lybrand. (1992). *Reporting by companies on interim results*: London: Coopers and Lybrand.
- Courtis, J. K. (1976). Relationship between timeliness in corporate reporting and corporate attributes. *Accounting and Business Research*, Winter, 45-56.
- Cowen, S. S., Ferrari, L. B., & Parker, L. D. (1987). The impact of corporate characteristics on social responsibility disclosure: a typology and frequency-based analysis. *Accounting, Organisations and Society*, 12(2), 111-122.
- Cronbach, L. (1951). Coefficient alpha and internal structure of tests. *Psychometrika* 16, 297-334.
- Darus, F. (2005). Voluntary corporate disclosures relating to financial instruments before and after mandatory requirements: The impact of Proprietary and Political cost. *Unpublished PhD Thesis, University of Adelaide.*
- Deppe, L. A. (1994). Disaggregated information: Time to consider. *Journal of Accountancy*, 178(6), 65-69.
- Dyer, J. C., & McHugh, A. J. (1975). The timeliness of the Australian annual report. *Journal of Accounting Research*, 13(2), 204-219.

- Edwards, J. W., Dominiak, G. F., & Hedges, T. V. (1972). Interim financial reporting. *New York: National Associations of Accountants.*
- Eng, L. L., & Teo, H. K. (1999). The relation between annual report disclosure, analysts earnings forecast and analyst following: Evidence from Singapore. *Pacific Accounting Review, 11*(2).
- Ettredge, M., Simon, D., Smith, D., & Stone, M. (1994). Why do companies purchase timely quarter reviews? *Journal of Accounting and Economics, 18*, 131-155.
- Ettredge, M., Simon, D., Smith, D. B., & Stone, M. (2000). Would switching to timely reviews delay quarterly and annual earnings releases? *Review of Quantitative Finance and Accounting, 14*, 111.
- Fekrat, M. A., Inclan, C., & Petroni, D. (1996). Corporate environmental disclosure: Competitive disclosure hypothesis using 1991 annual report data. *International Journal of Accounting 31*(2), 175-196.
- Foster, G. (1977). Quarterly accounting data: Time-series properties and predictive-ability results. *Accounting Review, 52*, 1-21.
- Frost, C. A., & Pownall, G. (1994). Accounting disclosure practices in the Unites States and the United Kingdom. *Journal of Accounting Research, 32*(1), 75-102.
- Gigler, F., & Hemmer, T. (1998). On the frequency, quality and informational role of mandatory financial reports. *Journal of Accounting Research, 36*(Supplement), 117-147.
- Guthrie, J., & Abeysekera, I. (2006). Content analysis of social, environmental reporting: What is new? *Journal of Human Resource Costing & Accounting, 10*(2), 114-126.
- Guthrie, J., Pettry, R., & Ricceri, F. (2006). The voluntary reporting of intellectual capital: comparing evidence from Hong Kong and Australia. *Journal of Intellectual Capital, 7*(2), 254-271.
- Guthrie, J., & Petty, R. (2000). Intellectual capital: Australian annual reporting practices. *Journal of Intellectual Capital, 1*(3), 241-251.
- Guthrie, J. E., & Parker, L. D. (1990). Corporate social disclosure practice: a comparative international analysis. *Advances in Public Interest Accounting, 3*, 159-176.
- Haniffa, R. M., & Cooke, T. E. (2002). Culture, corporate governance and disclosure studies in Malaysian companies. *ABACUS, 38*(3).
- Ho, S. S. M., & Shun Wong, K. (2001). A study of the relationship between corporate governance structures and the extent of voluntary disclosure. *Journal of International Accounting, Auditing and Taxation, 10*(2), 139-156.
- Holmes, G. (1971). Interim Statements. *Accountancy*(82), 518-522.
- Hossain, M., & Adam, M. (1995). An empirical study of voluntary financial disclosure by Australian listed companies. *Akauntan Nasional, 5*(7), 12-14.
- Hussey, R., & Woolfe, S. (1998). The auditors' review report. *Managerial Auditing Journal, 13*(8), 448-454.
- Hussey, R., & Woolfe, S. (Eds.). (1994). *Interim statements and preliminary profit announcements.*
- Imhoff, E. A. J. (1992). The relation between perceived accounting quality and economic characteristics of the firm. *Journal of Accounting and Public Policy, 11*(2), 97-118.
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm:managerial behaviour, agency costs and ownership structure. *Journal of Financial Economics, 3*(1), 305-360.
- Kamal, N. (1998). Comprehensiveness of disclosure of non-financial companies: Listed on the Amman financial market. *International Journal of Commerce & Management, 8*(1), 88.
- Karamanou, I., & Vafeas, N. (2005). The association between corporate boards, audit committees, and management earnings forecasts: an empirical analysis. *Journal of Accounting Research, 43*(3), 453-486.
- KLSE (1999). Annual Report. *Kuala Lumpur:KLSE.*

- Kohut, G. F., & Segars, A. H. (1992). The President's letter to stockholders: An examination of corporate communication strategy. *The Journal of Business Communications*, 29(1), 7-21.
- Krippendorff, K. (1980). *Content analysis: An introduction to its methodology*: Sage Publications, Newbury Park, CA.
- Krippendorff, K. (Ed.). (2004). *Content analysis: An introduction to its methodology (2nd ed.)*. Sage Publications, London.
- Ku Ismail, K. (2003). *The usefulness of quarterly financial reporting in Malaysia*. Unpublished PhD Thesis, University of Cardiff.
- Ku Ismail, K. N. I., & Chandler, R. (2004). The timeliness of quarterly financial reports of companies in Malaysia. *Asian Review of Accounting*, 12(1), 1-18.
- Ku Ismail, K. N. I., & Chandler, R. (2005a). Disclosure in the quarterly reports of Malaysian companies, financial reporting, regulation & governance. *The Electronic Journal of the Accounting Standards Interest Group of AFAANZ*, 4(1).
- Ku Ismail, K. N. I., & Chandler, R. (2005b). Perceptions of professional investors in Malaysia on the usefulness of quarterly financial reports. *Jurnal Pengurusan*, 24, 105-24.
- Ku Ismail, K. N. I., & Chandler, R. (2005c). The reliability of quarterly financial reports of companies in Malaysia. *IIUM Journal of Economics and Management*, 13(2), 167-188.
- Ku Ismail, K. N. I., & Chandler, R. (2007). Quarterly financial reporting: A survey of Malaysian users and preparers. *Accounting, Banking and Corporate Financial Management in Emerging Economies*, 7, 53-67.
- Kuder, G. F., & Richardson, M. W. (1937). The theory of the estimation of test reliability. *Psychometrika*, 2, 151-160.
- Kyle, A. (1985). Continuous auctions and insider trading. *Econometrica*, 53(6), 1315-1335.
- Lambert, M. R., Cartwright, D. H., O'Connor, M. H., & Walsh, M. (1991). Interim financial reporting: A continuous process. *Toronto: The Canadian Institute of Chartered Accountants*.
- Lang, M. H., & Lundholm, R. J. (1993). Cross-sectional determinants of analysts' ratings of corporate disclosure. *Journal of Accounting Research*, 31(2 (Autumn)), 46-271.
- Leftwich, R. W., Watts, R. L., & Zimmerman, J. L. (1981). Voluntary corporate disclosure: The case of interim reporting. *Journal of Accounting Research*, 19(Supplement), 50-77.
- Liming, G., Daoping, H., & David, Y. (2006). Auditing, integral approach to quarterly reporting, and cosmetic earnings management. *Managerial Auditing Journal*, 21(6), 569.
- Lipay, R. J. (1972). What's happening with interim financial reporting? *Financial Executive*, 40(10), 28-34.
- Lunt, M. H. C. (1982). *The role of interim accounts and preliminary profit announcements in financial reporting*: London: The Institute of Chartered Accountants in England and Wales.
- Maingnot, M. (1982). Published interim reports in the United Kingdom. *The International Journal of Accounting Education and Research*(18), 133-149.
- Manegold, J., & McNicholas, M. (1983). The effect of the information environment on the relationship between financial disclosure and security price variability. *Journal of Accounting and Economics*, 5, 49-74.
- Mangena, M., & Taurigana, V. (2007). Corporate compliance with non-mandatory statements of best practice: The case of the ASB statement on interim reports. *European Accounting Review*, 16(2), 399-427.
- Marston, C. L., & Shrikes, P. J. (1991). The use of disclosure indices in accounting research: A review article. *The British Accounting Review*, 23(3), 195-210.
- Marty, B., Arthur, K., & Ira, S. W. (2007). The effect of reporting frequency on the timeliness of earnings: The cases of voluntary and mandatory interim reports. *Journal of Accounting & Economics*, 43(2/3), 181.

- Mc Ewen, R. A., & Schwartz, B. N. (1992). Are firms complying with the minimum standards for interim financial reporting? *Accounting Horizons*, 6(1), 75-87.
- Mc Nally, G. M., Lee, H. E., & Hasseldine, C. R. (1982). Corporate financial reporting in New Zealand: An analysis of user preferences, corporate characteristics and disclosure practices for discretionary information. *Accounting and Business Research*, Winter, 11-20.
- Meek, G. K., Roberts, C. B., & Gray, S. J. (1995). Factors influencing voluntary annual report disclosures by US, UK and Continental European multinational corporations. *Journal of International Business Studies*, 26(3), 555-572.
- Mensah, Y. M., & Werner, R. H. (2008). The capital market implications of the frequency of interim financial reporting: An international analysis. *Review of Quantitative Finance and Accounting*, 31(1), 71-104.
- Milne, M. J., & Adler, R. W. (1999). Exploring the reliability of social and environmental disclosure content analysis. *Accounting, Auditing and Accountability Journal*, 12(2), 237-256.
- Mohd Ghazali, N. A., & Weetman, P. (2006). Perpetuating traditional influences: Voluntary disclosure in Malaysia following the economic crisis. *Journal of International Accounting, Auditing and Taxation*, 15(2), 226-248.
- Owusu-Ansah, S. (1998). The impact of corporate attributes on the extent of mandatory disclosure and reporting by listed companies in Zimbabwe. *The International Journal of Accounting*, 33(5), 605-631.
- Owusu-Ansah, S. (2005). Factors influencing corporate compliance with financial reporting requirements in New Zealand. *International Journal of Commerce and Management*, 15(2), 141-157.
- Owusu-Ansah, S., & Yeoh, J. (2005). The effect of legislation on corporate disclosure practices. *Abacus*, 41(1), 92-109.
- Owusu Ansah, S. (1998). The adequacy of corporate mandatory disclosure practices on emerging markets: a case study of the Zimbabwe Stock Exchange. *Unpublished PhD Thesis, University of Middlesex*.
- Patton, J., & Zelenka, I. (1997). An empirical analysis of the determinants of the extent of disclosure in annual reports of joint stock companies in the Czech Republic. *The European Accounting Review*, 6(4), 605-626.
- Pegrum, D. F. (Ed.). (1965). *Public regulation of business*. Homewood, Illinois: Richard Irwin.
- Rahman, A. R., Tay, T. M., Ong, B. T., & Cai, S. (2007). Quarterly reporting in a voluntary disclosure environment: Its benefits, drawbacks and determinants. *The International Journal of Accounting*, 42(4), 416-442.
- Reilly, F. K., Morgenson, D. L., & West, M. (1972). The predictive ability of alternative parts of interim financial statements. *Journal of Accounting Research*, 10, 105-124.
- Robb, A. J. (1980). Interim reports and their qualitative evaluation. *The International Journal of Accounting*, 15(2), 77-86.
- Roscoe, J. T. (1975). *Fundamental research statistics for the behavioral sciences* (second ed.). New York: Rinehart and Winston.
- Salamon, G. L., & Dhaliwal, D. S. (1980). Company size and financial disclosure requirement with evidence from the segmental reporting issue. *Journal of Business and Finance*, 7(4), 555-568.
- Samantha, T., & Greg, T. (1997). Comparing compliance: Too much regulation, or insufficient attention? *Australian Accountant*, 67(9), 56.
- Schadewitz, H. J., & Blevins, D. R. (1998). Major determinants of interim disclosures in an emerging market. *American Business Review*, 16(1), 41-55.
- Sekaran, U. (2003). *Research methods for business: A skill building approach*. John Wiley and Sons.

- Short, J. C., & Palmer, T. B. (2003). Organizational performance references: An empirical examination of their content and influences. *Organizational Behaviour and Human Decision Processes*, 90(2), 209-224.
- Sighvi, S. S., & Desai, H. B. (1971). An empirical analysis of the quality of corporate financial disclosure. *Accounting Review*, XLVI no 1.
- Singhvi, S. S. (1968). Characteristics and implications of inadequate disclosure: A case study of India. *International Journal of Accounting Education and Research*, 3(2 (Spring)), 29-43.
- Smith, M. (Ed.). (2003). *Research methods in accounting*: Sage Publication, London
- Smith, R., & Taffler, L. W. (2000). The chairman's statement-A content analysis of discretionary narratives disclosures. *Accounting, Auditing and Accountability Journal*, 13(5), 624-646.
- Stanga, K. G. (1976). Disclosure in Published Annual Reports. *Financial Management*, Winter, 42-52.
- Steenkamp, N., & Northcott, D. (2007). Content analysis in accounting research: the practical challenge). *Australian Accounting Review*, 17(3), 12.
- Stigler, G. J. (1961). The economics of information. *Journal of Political Economy*, 69(3), 213-225.
- Street, D. L., & Bryant, S. M. (2000). Disclosure level and compliance with IASs: A comparison of companies with and without US listings and filings. *The International Journal of Accounting*, 35(3), 305-329.
- Street, D. L., & Gray, S. J. (2002). Factors influencing the extent of corporate compliance with International Accounting Standards: summary of a research monograph. *Journal of International Accounting, Auditing and Taxation*, 11(1), 51-76.
- Tai, B. Y. K., Au Yeung, P. K., Kwok, M. C. M., & Lau, L. C. W. (1990). Non-compliance with disclosure requirements in financial statements: The case of Hong Kong companies. *The International Journal of Accounting*, 25(2), 99-112.
- Tan, S., & Tower, G. D. (1999). The influence of selected contingent variables on half-yearly reporting compliance by listed companies in Australia and Singapore. *Asian Review of Accounting*, 7(2), 66-83.
- Taylor, R. G. (1965). A look at published interim reports. *Accounting Review*, 40, 89-96.
- Tilt, C. A. (2000). The content and disclosure of corporate environmental policies: An Australian study. *Accounting, Auditing and Accountability Journal*, 14(2), 190-212.
- Waldron, R. S. (1961). Quarterly accounts for shareholders. *Accountancy*, 72(June), 332-334.
- Wallace, R. S. O., Naser, Kamal, Mora, & Araceli. (1994). The relationship between the comprehensiveness of corporate. *Accounting and Business Research*, 25(97), 41-53.
- Wallace, R. S. O., & Naser, K. (1995). Firm-specific determinants of the comprehensiveness of mandatory disclosure in the corporate annual reports of firms listed on the stock exchange of Hong Kong. *Journal of Accounting and Public Policy*, 14(4), 311-368.
- West, C. R. (1998). A review of differences in interim reporting disclosure between selected listed South African Companies. *A Technical Report Presented at the Department of Accounting, University of Cape Town, South Africa*.
- Yee, K. K. (2004). Interim reporting frequency and financial analysts' expenditures. *Journal of Business, Finance and Accounting*, 31, 41-72.

Appendix 1

Kilmogorov Value (Before and After Transformation)

Before transformation							After transformation (Using Van daer Waerden's approach)						
	Kolmogorov-Smirnov(a)			Shapiro-Wilk				Kolmogorov-Smirnov(a)			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.		Statistic	df	Sig.	Statistic	df	Sig.
DI_Q1_2005	.091	60	.200(*)	.977	60	.316	DI_Q1_2005	N/A	N/A	N/A	N/A	N/A	N/A
DI_Q2_2005	.073	60	.200(*)	.985	60	.676	DI_Q2_2005	N/A	N/A	N/A	N/A	N/A	N/A
DI_Q3_2005	.078	60	.200(*)	.982	60	.532	DI_Q3_2005	N/A	N/A	N/A	N/A	N/A	N/A
DI_Q4_2005	.073	60	.200(*)	.984	60	.609	DI_Q4_2005	N/A	N/A	N/A	N/A	N/A	N/A
DI_Q1_2006	.068	60	.200(*)	.984	60	.620	DI_Q1_2006	N/A	N/A	N/A	N/A	N/A	N/A
DI_Q2_2006	.101	60	.200(*)	.969	60	.126	DI_Q2_2006	N/A	N/A	N/A	N/A	N/A	N/A
DI_Q3_2006	.096	60	.200(*)	.968	60	.116	DI_Q3_2006	N/A	N/A	N/A	N/A	N/A	N/A
DI_Q4_2006	.062	60	.200(*)	.978	60	.354	DI_Q4_2006	N/A	N/A	N/A	N/A	N/A	N/A
DI_Q1_2007	.090	60	.200(*)	.977	60	.323	DI_Q1_2007	N/A	N/A	N/A	N/A	N/A	N/A
DI_Q2_2007	.061	60	.200(*)	.980	60	.415	DI_Q2_2007	N/A	N/A	N/A	N/A	N/A	N/A
DI_Q3_2007	.066	60	.200(*)	.977	60	.309	DI_Q3_2007	N/A	N/A	N/A	N/A	N/A	N/A
DI_Q4_2007	.080	60	.200(*)	.969	60	.131	DI_Q4_2007	N/A	N/A	N/A	N/A	N/A	N/A
CS_Q1_2005	.275	60	.000	.528	60	.000	CS_Q1_2005	.074	60	.200(*)	.986	60	.729
CS_Q2_2005	.276	60	.000	.523	60	.000	CS_Q2_2005	.073	60	.200(*)	.985	60	.648
CS_Q3_2005	.275	60	.000	.524	60	.000	CS_Q3_2005	.067	60	.200(*)	.984	60	.619
CS_Q4_2005	.276	60	.000	.521	60	.000	CS_Q4_2005	.086	60	.200(*)	.983	60	.566
CS_Q1_2006	.269	60	.000	.538	60	.000	CS_Q1_2006	.084	60	.200(*)	.986	60	.737
CS_Q2_2006	.269	60	.000	.545	60	.000	CS_Q2_2006	.085	60	.200(*)	.987	60	.776
CS_Q3_2006	.268	60	.000	.548	60	.000	CS_Q3_2006	.084	60	.200(*)	.987	60	.786
CS_Q4_2006	.271	60	.000	.558	60	.000	CS_Q4_2006	.066	60	.200(*)	.989	60	.870
CS_Q1_2007	.264	60	.000	.569	60	.000	CS_Q1_2007	.071	60	.200(*)	.986	60	.739
CS_Q2_2007	.262	60	.000	.601	60	.000	CS_Q2_2007	.078	60	.200(*)	.985	60	.661
CS_Q3_2007	.259	60	.000	.605	60	.000	CS_Q3_2007	.103	60	.200(*)	.982	60	.540
CS_Q4_2007	.255	60	.000	.618	60	.000	CS_Q4_2007	.079	60	.200(*)	.986	60	.732
QR_Q1_2005	.200	60	.000	.718	60	.000	QR_Q1_2005	.016	60	.200(*)	.997	60	1.000
QR_Q2_2005	.245	60	.000	.508	60	.000	QR_Q2_2005	.016	60	.200(*)	.997	60	1.000
QR_Q3_2005	.183	60	.000	.686	60	.000	QR_Q3_2005	.016	60	.200(*)	.997	60	1.000
QR_Q4_2005	.244	60	.000	.719	60	.000	QR_Q4_2005	.016	60	.200(*)	.997	60	1.000
QR_Q1_2006	.258	60	.000	.663	60	.000	QR_Q1_2006	.016	60	.200(*)	.997	60	1.000
QR_Q2_2006	.282	60	.000	.622	60	.000	QR_Q2_2006	.016	60	.200(*)	.997	60	1.000
QR_Q3_2006	.248	60	.000	.636	60	.000	QR_Q3_2006	.016	60	.200(*)	.997	60	1.000

Before transformation							After transformation (Using Van daer Waerden's approach)						
	Kolmogorov-Smirnov(a)			Shapiro-Wilk				Kolmogorov-Smirnov(a)			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.		Statistic	df	Sig.	Statistic	df	Sig.
QR_Q4_2006	.212	60	.000	.774	60	.000	QR_Q4_2006	.016	60	.200(*)	.997	60	1.000
QR_Q1_2007	.264	60	.000	.682	60	.000	QR_Q1_2007	.016	60	.200(*)	.997	60	1.000
QR_Q2_2007	.304	60	.000	.610	60	.000	QR_Q2_2007	.016	60	.200(*)	.997	60	1.000
QR_Q3_2007	.228	60	.000	.638	60	.000	QR_Q3_2007	.016	60	.200(*)	.997	60	1.000
QR_Q4_2007	.280	60	.000	.537	60	.000	QR_Q4_2007	.016	60	.200(*)	.997	60	1.000
P_Q1_2005	.238	60	.000	.742	60	.000	P_Q1_2005	.016	60	.200(*)	.997	60	1.000
P_Q2_2005	.213	60	.000	.819	60	.000	P_Q2_2005	.032	60	.200(*)	.997	60	1.000
P_Q3_2005	.228	60	.000	.665	60	.000	P_Q3_2005	.018	60	.200(*)	.997	60	1.000
P_Q4_2005	.257	60	.000	.748	60	.000	P_Q4_2005	.021	60	.200(*)	.997	60	1.000
P_Q1_2006	.191	60	.000	.722	60	.000	P_Q1_2006	.024	60	.200(*)	.997	60	1.000
P_Q2_2006	.229	60	.000	.656	60	.000	P_Q2_2006	.024	60	.200(*)	.997	60	1.000
P_Q3_2006	.292	60	.000	.533	60	.000	P_Q3_2006	.023	60	.200(*)	.997	60	1.000
P_Q4_2006	.205	60	.000	.702	60	.000	P_Q4_2006	.023	60	.200(*)	.997	60	1.000
P_Q1_2007	.201	60	.000	.735	60	.000	P_Q1_2007	.016	60	.200(*)	.997	60	1.000
P_Q2_2007	.265	60	.000	.698	60	.000	P_Q2_2007	.024	60	.200(*)	.997	60	1.000
P_Q3_2007	.285	60	.000	.599	60	.000	P_Q3_2007	.022	60	.200(*)	.997	60	1.000
P_Q4_2007	.254	60	.000	.685	60	.000	P_Q4_2007	.023	60	.200(*)	.997	60	1.000
L_Q1_2005	.201	60	.000	.575	60	.000	L_Q1_2005	.016	60	.200(*)	.997	60	1.000
L_Q2_2005	.201	60	.000	.594	60	.000	L_Q2_2005	.016	60	.200(*)	.997	60	1.000
L_Q3_2005	.220	60	.000	.511	60	.000	L_Q3_2005	.016	60	.200(*)	.997	60	1.000
L_Q4_2005	.220	60	.000	.521	60	.000	L_Q4_2005	.016	60	.200(*)	.997	60	1.000
L_Q1_2006	.075	60	.200(*)	.975	60	.263	L_Q1_2006	.053	60	.200(*)	.995	60	.998
L_Q2_2006	.068	60	.200(*)	.980	60	.442	L_Q2_2006	.050	60	.200(*)	.995	60	.997
L_Q3_2006	.057	60	.200(*)	.981	60	.477	L_Q3_2006	.043	60	.200(*)	.993	60	.977
L_Q4_2006	.068	60	.200(*)	.979	60	.404	L_Q4_2006	.034	60	.200(*)	.996	60	.999
L_Q1_2007	.050	60	.200(*)	.981	60	.469	L_Q1_2007	.045	60	.200(*)	.995	60	.998
L_Q2_2007	.064	60	.200(*)	.984	60	.598	L_Q2_2007	.035	60	.200(*)	.993	60	.986
L_Q3_2007	.072	60	.200(*)	.975	60	.243	L_Q3_2007	.040	60	.200(*)	.995	60	.999
L_Q4_2007	.065	60	.200(*)	.982	60	.530	L_Q4_2007	.043	60	.200(*)	.993	60	.979

N/A No transformation was done against the disclosure indices because it is normal distributed

* This is a lower bound of the true significance.

a Lilliefors Significance Correction

Appendix 2

Items in the Disclosure Requirement

FRS 134 INTERIM REPORTING

1. Condensed statements are clearly labelled
2. Prominently display an explicit statement that the interim financial report is to be read in conjunction with the most recent annual financial report
3. Include comparative condensed balance sheet
4. Include current, cumulative and comparative condensed income statement
5. Include cumulative and comparative condensed statement of changes in equity
6. Condensed cash flow statement
7. Additional line items and notes should be included if their omission would make the condensed interim financial statements misleading.
8. Basic EPS (on the face of income statement)
9. Diluted EPS (on the face of income statement)
10. Same accounting policies are followed
11. Changes in accounting policies
12. Auditor's opinion on previous annual report
13. Comment on seasonality or cyclicity factors
14. Unusual item that affects assets, liability, equity, net income and cash flows
15. Changes in estimates (if these changes have material effects)
16. Issuance, cancellation, repurchases and repayment of debt and equity securities
17. Dividends paid
18. Segmental reporting in primary segment format
19. Valuations of property, plant and equipment
20. Events after balance sheet date
21. Disclose that preparation of interim report complies with FRS 134
22. Effect of changes in the composition of the entity during the interim period (e.g. business combination, disposals, restructurings and discontinued operations)
23. Addition note (FRS 3 para 66-73)
24. Any other disclosure of events or transactions that are material to an understanding of the current interim period.

LISTING REQUIREMENTS Para 2.22

25. Review of the performance of the company and its principal subsidiaries setting out material factors affecting the earnings and/or revenue of the company and the group for the current quarter.
26. Review of the performance of the company and its principal subsidiaries setting out material factors affecting the earnings and/or revenue of the company and the group for the financial year-to-date.
27. Comment on material change in the profit before taxation for the quarterly result as compared with the preceding quarter
28. Comment on the current year prospect –factors that influence the prospects
29. Comment on the company progress and steps taken to achieve target which was previously announced or publicly documented
30. Opinion from the board of directors about the forecast and actual company performance which was previously announced or publicly documented
31. Explanatory note – variance of actual profit after tax, minority interest (variance exceeds 10%) – **Only applicable in final quarter**
32. Shortfall in the profit guarantee received by the company and steps taken to recover the shortfall – **Only applicable in final quarter**
33. Taxation (breakdown of tax charged)
34. Taxation (explanation of variance)
35. Profit on sale of unquoted investment and/or property respectively for the current and financial year to date.
36. Purchase and sale of quoted securities **OTHER** than securities in existing subsidiaries and associate companies.
37. Investment in quoted securities (showing cost, carrying value/book value and market value)
38. Status of corporate proposal
39. Brief explanation about procedures which arise due to corporate proposal (in table form)
40. Group borrowing and debt securities (between secured and unsecured, short term and long term borrowings and foreign currency-breakdown in each currency)
41. Financial instrument with off balance sheet risk
42. Changes in material litigation
43. Final dividend (if decision has been made) - state mention, the amount per share, previous corresponding period, date payable and the deposited securities
44. Earnings per share (what are the numerator and denominator in calculating basic earning per share)
45. Earnings per share (what are the numerator and denominator in calculating diluted earning per share)

Appendix 3

Scoring Sheet for Level of Disclosure

COMPANY NAME:

YEAR: 2005 / 2006 / 2007

TYPE: Condensed / Complete

FINANCIAL YEAR: 31 JAN/ 31 MAR/ 30 APR/ 30 JUN/ 31 JUL/ 31 AUG/ 30 SEP/ 31 DEC

No	ITEM	Q1	Q2	Q3	Q4	Remarks
1	Condensed statement are clearly labelled					
2	Prominently displayed an explicit statement					
3	Include comparative condensed balance sheet					
4	Include current , cumulative and comparative condensed income statement*					
5	Include cumulative and comparative condensed statement of changes in equity*					
6	Condensed cash flow statement*					
7	Additional item					
8	Basic EPs (on the face of income statement)					
9	Diluted earning per share (on the face of income statement)					
10	Same accounting policies are followed					
11	Changes in accounting policies (FRS 108)					
12	Auditor's opinion on previous annual report					
13	COMMENT on seasonality or cyclicity factors**					
14	Unusual item that affects assets, liability, equity, net income and cash flows.					
15	Changes in estimates (if these changes have material effect)					
16	Issuance, cancellation, repurchases and repayment of debt and equity securities					

No	ITEM	Q1	Q2	Q3	Q4	Remarks
17	Dividends paid					
18	Segmental reporting in primary segment format					
19	Valuations of property, plant and equipment					
20	Events after balance sheet date					
21	Disclose that preparation of interim report complies with FRS 134					
22	Effect of changes in the composition of the entity (e.g business combinations(BC), disposals, restructuring and discontinued operation)					
23	Additional note -BC- FRS 3 para 66-73					
24	Any other disclosure of event or transaction besides disclosure 9-21.					
25	REVIEW the performance of the company and its principal subsidiaries (pre-tax profit) for the current quarter. -setting out material factors					
26	REVIEW the performance of the company and its principal subsidiaries (pre-tax profit) for the financial year to date.- setting out material factors					
27	COMMENT on material change in the profit before taxation for the quarterly result as compared with the preceding quarter					
28	COMMENT on the current year's prospects –factors that influence the prospects					
29	COMMENT on the company progress and steps taken to achieve target which was previously announced or publicly documented					

No	ITEM	Q1	Q2	Q3	Q4	Remarks
30	OPINION from the board of directors about the forecast and actual company performance which was previously announced or publicly documented					
31	Explanatory note – variance of actual profit after tax, minority interest (variance exceeds 10%) – Only applicable in final quarter					
32	Shortfall in the profit guarantee received by the company and steps taken to recover the shortfall – Only applicable in final quarter					
33	Taxation (breakdown of tax charged)					
34	Taxation (explanation of variance)					
35	Profit on sale of unquoted investment and/or property respectively for the current and financial year to date.					
36	Purchase and sale of quoted securities OTHER than securities in existing subsidiaries and associate companies.					
37	Investment in quoted securities (showing cost, carrying value/book value and market value)					
38	Status of corporate proposal					
39	Brief explanation about procedures arising due to corporate proposal (in table form)					
40	Group borrowing and debt securities (between secured and unsecured, short term and long term borrowings and foreign currency-breakdown in each currency)					
41	Financial instrument with off balance sheet risk					

No	ITEM	Q1	Q2	Q3	Q4	Remarks
42	Changes in material litigation					
43	Final dividend (if decision has been made) - state the amount per share, previous corresponding period, date payable and the deposited securities.					
44	Earnings per share (what are the numerator and denominator in calculating basic earning per share)					
45	Earnings per share (what are the numerator and denominator in calculating diluted earning per share)					
46	Total assets					
47	Sales/turnover					
48	Total liabilities					
59	Shareholder equity					
50	Net profit after tax and interest					
51	Inventory					
52	Current asset					
53	Current liabilities					
54	EPS					
55	Prepayment					
56	Industry group					

Item 1- 24 – required by standard

24 - 45 required by listing requirement

Appendix 4

Scoring Sheet for Extent of Disclosure

COMPANY:

YEAR: 2005/2006/2007

NO	ITEM	Theme	Q1	Q2	Q3	Q4	Remark
1. (12)	Comment on seasonality and cyclicalities	1. Due to festive season					
		2. Due to festive season with few comments					
		3. Due to festive season with analytical discussion					
2. (23)	Review the performance (quarter)	0. No information					
		1. General explanation					
		2. Either profit before tax only or turnover only					
		3. Both profit before tax and turnover					
		4. Profit before tax, turnover and explanation about material factors					
		5. Profit before tax, turnover and other performance measurement together with explanation about material factors					
3. (24)	Review the performance (year to date)	0. No information					
		1. General explanation					
		2. Either profit before tax only or turnover only					
		3. Both profit before tax and turnover					
		4. Profit before tax, turnover and explanation about material factors					
		5. Profit before tax, turnover and other performance measurement together with explanation about material factors					
4. (25)	Material changes in the profit before taxation	0. No information					
		1. General explanation					
		2. Either profit before tax only or turnover only					
		3. Both profit before tax and turnover					
		4. Profit before tax, turnover and explanation about material factors					
		5. Profit before tax, turnover and other performance measurement together with explanation about material factors					

NO	ITEM	Theme	Q1	Q2	Q3	Q4	Remark
5. (26)	Company's prospects (future)	0. No projection on prospects					
		1. General projection about company's prospects					
		2. Projection with specific comment that company's prospects would depend on either factors specific to the company or economic factors.					
6. (27)	Company's progress (current)	0. No comment on company's progress					
		1. General comment about company's progress					
		2. Specific comment that company's prospects would depend on either factors specific to the company or economic factors					
7. (28)	BOD opinion	0. No information					
		1. State not applicable					
		2. State that no forecast or projection has been made					
8. (29)	Profit forecast	0. No information					
		1. Only quantitative figure without variance and shortfall.					
		2. Only quantitative figure for the variance and shortfall.					
		3. Quantitative figure with explanation about the variance and shortfall					
		4. Quantitative figure with explanation about the variance and shortfall and steps taken to recover the shortfall.					

Appendix 5

Regression Analysis for Each Quarter

MODEL 1: THE EFFECTS OF CORPORATE ATTRIBUTES ON LEVEL OF DISCLOSURE FOR QUARTER 1

Independent Variables	Unstandardized Coefficients	Standard error	t	Sig.	Tolerance	VIF
Constant	0.814	0.044	18.609	0.000		
Company size	0.013	0.007	1.952	0.053*	0.638	1.566
Leverage	-0.002	0.003	-0.730	0.466	0.637	1.571
Liquidity	-0.002	0.003	-0.608	0.544	0.817	1.225
Profitability	0.002	0.003	0.514	0.608	0.799	1.252
I_industrial	-0.001	0.008	-0.136	0.892	0.701	1.427
I_consumer	0.006	0.008	0.804	0.423	0.712	1.404
I_construction	-0.009	0.010	-0.871	0.385	0.802	1.247
I_property	-0.029	0.011	-2.712	0.007**	0.865	1.157
I_infrastructure	-0.011	0.010	-1.107	0.270	0.825	1.213
I_plantation	-0.008	0.011	-0.757	0.450	0.815	1.226
I_technology	0.008	0.015	0.521	0.603	0.851	1.175

Model summary:
R=0.308 R-squared =0.095 Adjusted R-squared=0.036 Standard error =0.0332

Analysis of Variance:

Model	Sum of Squares	df	Mean Square	F-value	Significance
Regression	.019	11	0.002	1.605	0.101
Residual	.185	168	0.001		
Total	0.204	179			

* Significant at 0.05
** Significant at 0.01

MODEL 2: THE EFFECTS OF CORPORATE ATTRIBUTES ON LEVEL OF DISCLOSURE FOR QUARTER 2

Independent Variables	Unstandardized Coefficients	Standard error	t	Sig.	Tolerance	VIF
Constant	0.836	0.048	17.342	0.000		
Company size	0.009	0.007	1.195	0.234	0.667	1.500
Leverage	0.000	0.004	0.052	0.958	0.619	1.616
Liquidity	-0.006	0.003	-1.843	0.067*	0.855	1.170
Profitability	0.004	0.003	1.101	0.272	0.795	1.257
I_industrial	-0.006	0.009	-0.619	0.536	0.731	1.367
I_consumer	0.013	0.009	1.411	0.160	0.700	1.429
I_construction	0.004	0.012	0.328	0.744	0.781	1.281
I_property	-0.050	0.012	-4.131	0.000**	0.867	1.153
I_infrastructure	-0.008	0.011	-0.746	0.457	0.838	1.193
I_plantation	0.001	0.013	0.056	0.955	0.788	1.269
I_technology	0.024	0.017	1.444	0.151	0.865	1.156

Model summary:

R=0.410 R-squared =0.168 Adjusted R-squared=0.114 Standard error =0.0379

Analysis of Variance:

Model	Sum of Squares	df	Mean Square	F-value	Significance
Regression	.049	11	0.004	3.090	0.001
Residual	.241	168	0.001		
Total	0.290	179			

*Significant at 0.10

**Significant at 0.01

MODEL 3: THE EFFECTS OF CORPORATE ATTRIBUTES ON LEVEL OF DISCLOSURE FOR QUARTER 3

Independent Variables	Unstandardized Coefficients	Standard error	t	Sig.	Tolerance	VIF
Constant	0.806	0.048	16.685	0.000		
Company size	0.013	0.007	1.793	0.075*	0.686	1.457
Leverage	0.001	0.004	0.156	0.876	0.649	1.541
Liquidity	-0.006	0.003	-1.828	0.069	0.853	1.172
Profitability	0.008	0.003	2.334	0.021**	0.803	1.246
I_industrial	0.000	0.009	0.029	0.977	0.737	1.357
I_consumer	0.015	0.009	0.134	1.646	0.716	1.397
I_construction	0.009	0.012	0.745	0.457	0.754	1.327
I_property	-0.048	0.012	-3.885	0.000***	0.865	1.156
I_infrastructure	-0.004	0.011	-0.335	0.738	0.834	1.200
I_plantation	-0.003	0.013	-0.246	0.806	0.792	1.263
I_technology	0.022	0.017	1.257	0.210	0.858	1.165

Model summary:

R=0.444 R-squared =0.197 Adjusted R-squared=0.144 Standard error =0.0382

Analysis of Variance:

Model	Sum of Squares	df	Mean Square	F-value	Significance
Regression	.060	11	0.005	3.740	0.000
Residual	.246	168	0.001		
Total	0.307	179			

* Significant at 0.10

**Significant at 0.05

***Significant at 0.01

MODEL 4: THE EFFECTS OF CORPORATE ATTRIBUTES ON LEVEL OF DISCLOSURE FOR QUARTER 4

Independent Variables	Unstandardized Coefficients	Standard error	t	Sig.	Tolerance	VIF
Constant	0.827	0.049	16.942	0.000		
Company size	0.010	0.007	1.441	0.152	0.675	1.482
Leverage	0.003	0.004	0.079	0.885	0.621	1.611
Liquidity	-0.006	0.003	-1.952	0.053*	0.861	1.161
Profitability	0.004	0.003	0.100	1.287	0.828	1.207
I_industrial	-0.005	0.009	-0.512	0.609	0.755	1.324
I_consumer	0.010	0.009	1.047	0.297	0.727	1.376
I_construction	0.000	0.012	-0.025	0.980	0.761	1.314
I_property	-0.046	0.013	-3.671	0.000**	0.857	1.167
I_infrastructure	-0.006	0.012	-0.477	0.634	0.820	1.219
I_plantation	0.002	0.013	0.163	0.871	0.797	1.255
I_technology	0.018	0.017	1.073	0.285	0.855	1.131

Model summary:

R=0.409 R-squared =0.167 Adjusted R-squared=0.113 Standard error =0.0388

Analysis of Variance:

Model	Sum of Squares	df	Mean Square	F-value	Significance
Regression	.051	11	0.005	3.069	0.001
Residual	.253	168	0.002		
Total	0.304	179			

*Significant at 0.05

**Significant at 0.01

Result of nonparametric Mann-Whitney test between reporting lag and company attributes for Quarter 1

Independent variables	n	Mean reporting lag	Mann-Whitney test	
			Mean rank	Sig. (2 tailed)
Company size:				
Small	45	40.00	1800.00	0.038
Large	45	51.00	2295.00	
Profitability:				
Low profitable	45	52.60	2367.00	0.007
High profitable	45	38.40	1728.00	
Leverage:				
Lowly leveraged	45	46.28	2082.50	0.770
Highly leveraged	45	44.72	2012.50	
Liquidity:				
Low liquid	45	50.20	2259.00	0.077
High liquid	45	40.80	1836.00	

Result of nonparametric Mann-Whitney test between reporting lag and company attributes for Quarter 2

Independent variables	n	Mean reporting lag	Mann-Whitney test	
			Mean rank	Sig. (2 tailed)
Company size:				
Small	45	38.99	1754.50	0.014
Large	45	52.01	2340.50	
Profitability:				
Low profitable	45	49.76	2239.00	0.107
High profitable	45	41.24	1856.00	
Leverage:				
Lowly leveraged	45	47.23	2125.50	0.513
Highly leveraged	45	43.77	1969.50	
Liquidity:				
Low liquid	45	49.94	2247.50	0.093
High liquid	45	41.06	1847.50	

Result of nonparametric Mann-Whitney test between reporting lag and company attributes for Quarter 3

Independent variables	n	Mean reporting lag	Mann-Whitney test	
			Mean rank	Sig. (2 tailed)
Company size:				
Small	45	37.23	1675.50	0.002
Large	45	53.77	2419.50	
Profitability:				
Low profitable	45	51.30	2308.50	0.028
High profitable	45	39.70	1786.50	
Leverage:				
Lowly leveraged	45	48.78	2195.00	0.219
Highly leveraged	45	42.22	1900.00	
Liquidity:				
Low liquid	45	48.20	2169.00	0.310
High liquid	45	42.80	1926.00	

Result of nonparametric Mann-Whitney test between reporting lag and company attributes for Quarter 4

Independent variables	n	Mean reporting lag	Mann-Whitney test	
			Mean rank	Sig. (2 tailed)
Company size:				
Small	45	44.40	1998.00	0.678
Large	45	46.60	2097.00	
Profitability:				
Low profitable	45	51.00	2295.00	0.038
High profitable	45	40.00	1800.00	
Leverage:				
Lowly leveraged	45	46.61	2097.50	0.675
Highly leveraged	45	44.39	1997.50	
Liquidity:				
Low liquid	45	45.89	2065.00	0.882
High liquid	45	45.11	2030.00	

Result of nonparametric Kruskal Wallis test between reporting lag and industries for Quarter 1 to Quarter 4

Quarter	Industry	n	Kruskal-Wallis test	
			Mean rank	Sig. (2 tailed)
Q1	Trading/service	63	91.97	0.008
	Industrial	27	96.30	
	consumer	30	86.18	
	construction	15	101.30	
	property	12	131.17	
	Infrastructure	15	83.40	
	plantation	12	56.17	
	technology	6	48.67	
Q2	Trading/service	63	89.41	0.018
	Industrial	27	94.33	
	consumer	30	82.27	
	construction	15	102.67	
	property	12	137.96	
	Infrastructure	15	66.70	
	plantation	12	84.92	
	technology	6	71.17	
Q3	Trading/service	63	83.03	0.000
	Industrial	27	93.74	
	consumer	30	83.77	
	construction	15	125.63	
	property	12	147.00	
	Infrastructure	15	77.97	
	plantation	12	76.50	
	technology	6	46.50	
Q4	Trading/service	63	86.37	0.023
	Industrial	27	89.17	
	consumer	30	106.97	
	construction	15	109.57	
	property	12	114.67	
	Infrastructure	15	72.80	
	plantation	12	59.46	
	technology	6	67.83	