

THE DETERMINANTS OF VOLUNTARY DISCLOSURES IN MALAYSIA: THE CASE OF INTERNET FINANCIAL REPORTING

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ABSTRACT

Previous research suggests that there is a rather heterogeneous use of the Internet as an instrument for investor relations strategies and corporate reporting among Malaysian firms [i.e. types of information disclosed (Ruhaya, Nafisah & Normahiran, 2000; Noor & Mohamad, 2000), qualitative nature of Internet reporting (Nik & Amdan, 2001) and benefits of reporting on the websites (Salleh, Nariah, Mazlin & Shireejit, 2000)]. This study has investigated whether the differences in Internet Financial Reporting (IFR) policies might be due to a firm's specific characteristics. Given there is no mandatory requirement for IFR disclosure, the study adopts the traditional voluntary disclosure variables in an attempt to explain such practices by Malaysian main board listed firms in Kuala Lumpur Stock Exchange (KLSE). A total of 100 firms were selected based on their market capitalization for the year 2001. All selected firms were analyzed via their web sites or linkage to KLSE web site if present and traceable. The regression results show that firm size, leverage, growth, foreign share ownership and shareholders concentration were directly attributed to the adoption of IFR by the listed firms. In conclusion, a bigger firm, a more leveraged firm, a high growth firm, a firm with high foreign share ownership and a firm with highly concentrated shareholders has a higher tendency to adopt IFR.

KEYWORDS: Internet Financial Reporting

INTRODUCTION

The growth and development of the Internet has been fast and sustained. Its growth reflects the current tendency for globalization and has caused changes in the way financial information flows from companies to investors and creditors. This new form of financial reporting presents accounting and its practitioners with new challenges and opportunities.

Various accounting regulatory bodies have attempted to address these new challenges and opportunities of Internet reporting. The International Accounting Standards Board (IASB) on November 15, 1999 published a document entitled "Study of Business Reporting on the Internet" as a first step towards a project of standardization in Internet financial reporting (IFR). In addition, the Financial Accounting Standard Board (FASB) on January 31, 2000 published a report entitled "Electronic Distribution of Business Reporting Information" as part of a wider project on business reporting research. The main aim of the report is to describe the current state of financial reporting information on the Internet in the United States of America and to identify the most usual practices in Internet reporting.

A recent survey of 10,000 European financial professionals by Citigate Online revealed that 80% believe that regulatory bodies such as Financial Services Authority (FSA) in the UK should make online reporting compulsory for listed companies, ensuring corporate financial information is as accessible as possible to investors and other stakeholders. Furthermore, financial press release wire Hugin found that almost 58% of its respondents access company annual reports online every month for private and professional investment, auditing and research purposes. It also found that 87% of the respondents find online annual reports of equal or greater use than hard copy reports.¹

The above scenario summarizes the importance of dissemination of financial information through Internet. Research has also been embarked on the issue in order to provide further understanding on this new form of financial reporting. Ashbaugh, Karla and Terry (1999), for example, investigate current practices of Internet financial reporting of a sample companies in the US and its association to firm specific characteristics. Descriptive statistics revealed that 87% of the sample firms have an active website of which 70% of firms with website engaged in IFR. Based on a multivariate logit regression, they have found that firm size, return on asset and AIMR ratings are significant factors to differentiate between firms with and without IFR practices. However, another variable of interest, shareholders' concentration, was found to be insignificant. Debreceeny, Glen and Asheq (2002) extended Ashbaugh's et al. (1999) study by including environment related variables and test their associations to the Internet reporting practices. IFR was further classified as IFR-content and IFR-presentation.² Probit regression analyses revealed that firm related variables such as firm size, US listing by non-US firms, level of technology and growth prospects to be significantly related to the practice of IFR (in both definitions of IFR). In addition, the environment related variable, the level of financial disclosure in the firm's national environment, was also found to be significant in predicting IFR-presentation.

As the IFR practices in developed countries such as in the US is more commonly practiced by the public listed companies, its practices in lesser-developed countries is just growing. Therefore, research on the IFR practices in countries such as Malaysia would provide a good avenue to understand how the IFR practices have evolved and developed in such environment.

Research on the IFR practices in Malaysia is still at the infancy stage. This study would extend the literature on the IFR practices in Malaysia by empirically examine the relationship between the IFR practices and firm specific characteristics. As the Internet financial reporting can be considered as voluntary disclosure, the study have selected seven firm specific attributes based on the prior voluntary disclosure literature which include firm size, financial performance, leverage, growth,

¹ Factiva Dow Jones & Reuters 20 November 2002

² IFR-content means disclosure of a complete version of the hard copy annual report in the website, while IFR-presentation means disclosure of those equivalent of the print format of the annual report to enhancements not available in the paper paradigm (i.e. graphics, interactivity, etc.)

foreign ownership, shareholders' concentration and industrial sector. Industrial sector acts as a control variable on the relationship between the IFR practices and firm-specific characteristics.

The remaining discussions of the paper are organized as follows. The next section provides some historical developments and orientations of corporate reporting. It also provides theoretical perspectives on the expansion of voluntary disclosure practices. The third section focuses on prior literature in the area of Internet reporting. Then the fourth section discusses the hypotheses development of the study and research model that will be utilized in the study. Empirical results and discussion are presented in section five. Finally, section six provides the conclusions of the study.

INSTITUTIONAL BACKGROUND AND THEORETICAL FRAMEWORK

A conventional view of corporate reporting is that it provides a means for the organization, or its representatives, to communicate past actions of the company, the results of those past actions and the intended future actions of the company. This takes place in order that any interested party may undertake an evaluation of the effectiveness of those past actions and the expected outcomes of its future activity.

Crowther (2000) presents the development of communication channel on the relationship between the organization and its environment via annual reports which can be classified into the following four stages. The first stage encompasses the period up until the Second World War and is defined by a dialectic, which recognizes the distinctions between the firm and its environment, but deliberately chooses to ignore the external environment. During this period, corporate reporting is simply an internal transaction to the organization as a way of communicating between the managers and owners of the business. What matters during this period is the results of past transactions and the report is merely deemed to be an effective means of communicating those results to the people who need to know. During the second stage, from 1940 to 1975, firms and their managers choose to recognize the existence and importance of the external environment and the need to attract new investment. Thus, the orientation of the reports now is extended to potential investors. The focus still remains predominantly upon the firm, however, and the sole purpose of communicating with the external environment is not to achieve communications, but to increase membership of the firm.

The period from 1975 to 1995 presents the third stage where development of reporting is epitomized by most dramatic changes in corporate reporting. Reporting communication is now extended to the external environment. Indeed, results of past transactions no longer matter, even though they are still contained in the reports, but are relegated to semi-obscurity. Thus, the reports now become predominantly forward-looking and perhaps, more significantly, the forward orientations is not upon the economics prospects of the firms, but upon the prospects for the shareholders' community in terms of rewards, both dividends and share price increases. The post-1995 period can be considered as the state of electronic communications and reporting, where it presents the business community with new challenges and opportunities.

The increasing trend of Internet reporting to supplement or replace paper-based reporting involves costs for a firm. These costs involve skills, maintenance, equipment and supervision. Whilst firms are obliged to disseminate via hard copy its annual reports because of statutory regulation, it is often the case that companies voluntarily disseminate it through a wider audience such as the Internet.

Agency theory suggests that disclosure vary with quotations status. Where there is a divorce of ownership from control, the potential for agency costs exists because of conflicts between firstly, shareholders and managers, and secondly, between bondholders and shareholders-managers. A major problem is that the agent is likely to have access to superior information than the principle as espoused by Berle and Means(1932) as "information asymmetry". Since the principle has difficulty

in observing the behaviour of the agents, it is possible that the agent will use the superior information to his own advantage. Modern corporations have adopted various mechanisms, including voluntary disclosure, to mitigate the adverse effects of information asymmetry. Other empirical studies on voluntary disclosure prove that managers voluntarily enhance the visibility of their firms' financial profile to, firstly, reduce agency cost or contracting costs (Chow & Wong-Boren, 1987), secondly, to reduce its cost of capital (Botosan, 1997; Sengupta, 1998), and finally, to enhance the value of the firm (King & Waymire, 1990; Yeo & Ziebart, 1995; Frankel, Johnson & Skinner, 1999). These studies have identified certain characteristics of the firm that can increase or reduce certain firm's costs. They show that disclosure can individually or simultaneously reduce agency and contracting costs, cost of capital and/ or increase firm value.

Theory also suggests that much of the impetus for voluntary disclosure practices surrounds the need to raise capital at the lowest possible cost (Choi, 1973; Spero, 1979). A number of explanations can be advanced to support the capital-need hypothesis. First, additional disclosure may help to attract new shareholders thereby helping to maintain a healthy demand of shares, and a share price that more fully reflects its intrinsic value. Second, increased information may assist in reducing informational risk and thereby lower the cost of capital (Spero, 1979). A lower cost of capital should mean that marginal projects become profitable. Third, in order to raise capital on markets, companies will increase their voluntary disclosure. Consequently, listed companies are more likely to have a higher level of disclosure than unlisted companies and multiple listed, those raising capital on the international markets, will have a higher level of disclosure than domestically listed companies. Fourth, multiple listed companies often have an interest in foreign capital markets since foreign operations are often financed by foreign capital (Choi & Muller, 1984). Disclosure levels might be increased to adapt to local customs to meet the requirements of banks and other suppliers of capital. Finally, firms that want to participate in global markets have to meet disclosure standards that allow them to compete for funds in these markets (Stulz, 1999).

The discussions above on the agency costs and access to global capital markets provide justifications for firms to achieve a higher level of disclosures, which include voluntary types of information disclosures. This information could be disseminated through traditional paper-based reporting, or a more advanced method of paper-less reporting through the Internet. The immediate cost associated with traditional paper-based reporting, with current phenomenon of increase in investor geographic dispersion, is it is increasingly expensive and limited in capacity to reach the users of information. In contrast, Internet reporting can be cost effective, fast, flexible in format, and accessible to all types of users within and beyond national boundaries. As we moved to a modern and scientific era, the orientation of corporate reporting have also changed from internal to external and from backward-looking to forward-looking in order to suite better the current need of its reporting environment.

LITERATURE REVIEW

The Internet has a profound impact on external financial reporting. There has been a growing interest in this new phenomenon among academic researchers. At present, many literature focuses on the policy implications of the IFR practices. Question such as why firms adopt IFR practices or the factors underlying the influences for adopting IFR practices needs detailed examination and analyses.

One of the earlier studies to investigate why firms adopt different Internet financial reporting strategies was undertaken by Ashbaugh et al. (1999). Their research has opened a new chapter of academic research to further confine the attempts to generalize the practice of Internet reporting. Descriptive statistics revealed that 87% of the sample firms have an active website of which 70% of firms with website engaged in IFR. Based on a multivariate logit regression, they have found that firm size, returns on asset and AIMR ratings are significant factors to differentiate between firms with and without IFR practices. Analysis on the IFR firms found that IFR firms are larger in size and have higher return on asset compared to non-IFR firms. Results on the AIMR rating

indicates that median score is higher for IFR firms, thus suggesting that excelling AIMR rated firms expands their voluntary disclosure practices. However, another variable of interest, shareholders' concentration, was found to be insignificant.

Similar attempt has also been carried out by Rodrigues and Carlos (2001) in the Portuguese environment. Based on the sample firms selected from the Lisbon and Porto Stock Exchange, the findings reveal that firm size is the only significant factor that is associated to the IFR practices. The analysis on the industrial sector found no significant influence on the IFR practices. Foreign listing results were excluded as it violates the assumption of chi-square test due to small number of Portuguese firms that were listed in the overseas market.

Debreceeny et al. (2002) extended Ashbaugh's et al. (1999) study by including environment related variables and test their associations to the Internet reporting practices. IFR was further classified as IFR-content and IFR-presentation.³ Sample companies were selected from 22 countries where 30 companies were selected from each country. Probit regression analyses revealed that firm related variables such as firm size, US listing by non-US firms, level of technology and growth prospects to be significantly related to the practice of IFR (in both definitions of IFR). In addition, the environment related variable, the level of financial disclosure in the firm's national environment, was also found to be significant in predicting IFR-presentation.

Ettredge, Vernon and Susan (2002) and Kerckhoven (2002) are another two recent studies on the IFR practices. Ettredge et al. (2002) examine whether there are similarities between traditional voluntary disclosure variables with the Internet reporting variables. They conclude that use of the IFR better facilitates the needs of voluntary information rather than presentation of the required information. In other word, IFR suited for presenting information akin to the interest of the investors. In addition, findings from Kerckhoven (2002) indicate that a different market force in which a particular firm operates does significantly influence the practices of the IFR.

In sum, firm size, financial performance, analyst ratings, growth prospects, foreign listings, level of technology, national disclosure level, new equity issuance, correlation between stock return with annual earnings and condition of market forces are found to significantly explain the IFR practices in different settings.

Research of the IFR practices in Malaysia is still at the beginning stage. It has started to evolve at the beginning of the year 2000 and currently research in the area discuss basic issues of the IFR such as the types of information disclosed (Ruhaya et al., 2000; Noor & Mohamad, 2000), qualitative nature of Internet reporting (Nik & Amdan, 2001) and benefit of reporting on the websites (Salleh, et al., 2002). In addition, all these studies did provide a broad description on the trend of Internet reporting in Malaysia. Ruhaya et al. (2000) analyzed a sample of 50 largest firms based on the market capitalization for the year ended 1999. Their study found that, out of 50 sample companies, only 31 firms have an active website and from those companies which have the websites, 77 percent have some form of financial information while others use their websites solely for other usage such as on-line transactions and marketing strategies. They also discovered that half of these firms have full annual reports available in portable document format (pdf). The other half only contains information such as interim statements and financial highlights.

Noor and Mohamad (2000) extend Ruhaya et al. (2000) study by analyzing all the companies listed on the main and second boards of the KLSE. They found that 31.6 percent (237 firms) of the public listed companies have corporate websites linked to the KLSE homepage and of those, 11.5 percent (25 firms) use them to disseminate financial information in the form of full annual reports. Analysis on the types of non-financial information disclosed revealed that corporate profiles, corporate information and corporate structure are common information disclosed in their websites. It also appears that larger firms are more likely to disclose financial statements on the Internet. Their study also found that industrial products as well as finance and trust firms are more likely to disclose their financial statements on the Internet, compared to the other industrial sectors.

³ IFR-content means disclosure of a complete version of the hard copy annual report in the website, while IFR-presentation means disclosure of those equivalent of the print format of the annual report to enhancements not available in the paper paradigm (i.e. graphics, interactivity, etc.)

Nik and Amdan (2001) evaluated the qualitative characteristics of the IFR practices. One of the main issues analyzed is the quality of the IFR, which is looked upon from three different perspectives, (1) breadth (quantity and comprehensiveness) of disclosure, (2) frequency of disclosure, and (3) timeliness of disclosure. Results revealed that most firms disclosed their financial highlights, earnings managements, financial forecast and also interim reports in addition to their full set of annual reports. It was also found that the majority of the sample firms report their financial status annually and few reports semi-annually. The results also showed that 11 firms, from a total sample of 35 firms, updated their financial information up to the year 2000 and only one firm which has not updated its financial information since 1997.

Finally, Salleh et al. (2002) examine the usefulness of financial reporting via Internet to Malaysian firms as reported by chief financial officers (CFO) of the publicly listed firms. 75 percent of the respondents believe that a policy of disclosure of financial information in the websites benefit the firms as they are able to attract potential customers, local and foreign investors, promote transparency and provide wider coverage compared to the traditional form of annual reports. The results also show that the majority of the respondents (between 63 to 97 percent) either agreed or strongly agreed that the users stand to benefit most from such a reporting policy. The study also tried to find out reasons for companies not engaging in the IFR practices. The results showed a significant majority (more than 70 percent) of the respondents agreed that the reasons for not adopting IFR policy is because there is no legal requirements, availability of other alternative forms for users to obtain information, and the need to maintain and update the information on websites.

This study will extend the IFR literature within the Malaysian environment by including more firm's related variable from the general voluntary disclosure studies in order to enhance our knowledge and understanding of the IFR practices by the Malaysian publicly listed companies

HYPOTHESES DEVELOPMENT

Based on the firm specific attributes which were found to be important from previous voluntary disclosure literature, the following sections develop the hypotheses of the study

Firm size

The size of the company has been argued to have a positive association with the voluntary disclosure level, and such has been selected as an independent variable in most of the general voluntary disclosure studies (e.g. Firth, 1979; Chow & Wong-Boren, 1987; Cooke, 1989 and 1991; Land & Lundholm, 1993; Ahmed & Nicholls, 1994; Hossain, Lin & Adams, 1994; Wallace & Naser, 1995; Botosan, 1997; Frankel et al., 1999). Specifically, studies on voluntary IFR studies such as Ashbaugh et al. (1999), Rodrigues and Carlos, (2001), Debreceny et al. (2002) and Ettredge et al. (2002) have also chosen firm size as one important factor to explain the IFR practices.

Various reasons have been offered to justify the expected positive relationship of voluntary disclosure practices and firm size. Buzby (1975), for example, suggested that since collecting and disseminating information is a costly exercise, it is only the larger firms that could afford such expenses. Ashbaugh et al. (1999) note that the economics of scale suggest larger firms are more likely to present financial reports at websites. Apart from that, the political-cost hypothesis predicts that larger companies have a stronger incentive to enhance their corporate reputation and public image, as they are more publicly visible. They also attract more attention by the governmental bodies. Increased disclosures would be generally believed to reduce government intervention (Firth, 1979; Chow & Wong-Boren, 1987)

In addition, larger firms are motivated to undertake more voluntary disclosure practices including the IFR in order to create or maintain strong demand for their securities (Hossain, Lin & Adams, 1994). Furthermore, larger companies have also face higher information asymmetry as the shareholders' base is more diverse, and thus leads toward higher agency cost. In order to reduce such agency cost, larger firms are expected to disclose more information than smaller companies (Jensen and Meckling, 1976). All the above theoretical arguments lend support for higher voluntary disclosures by large firms. Therefore the first hypothesis, stated in an alternative form, with respect to the firm size is represented as follows:

H₁: Firm size is positively related to the IFR

Firm performance

Theoretically, investors generally are thought to perceive the absence of voluntary disclosure as an indication of "bad news" about a firm (Verrecchia, 1983; McKinnon & Dalimunthe, 1993). This provides average-or-better performing firms with an adverse selection incentive to disclose (Lev & Penman, 1990; Lang & Lundholm, 1993; Clarkson, Kao & Richardson, 1994). On the other hand, managers likely have incentives to disclose voluntary information (especially earning forecasts), even if it will be unfavorable to the firms, in order to avert legal liability (Skinner, 1994; Baginski, Hassel & Waymire, 1994). However, prior empirical evidence on the relationship between firm performance and voluntary disclosure practices was mixed. Based on the above discussions, it could be concluded that better performing firms have greater incentives to disclose more voluntary information as to avoid perceptions by the users of hiding some unfavorable information. Therefore, the second hypothesis, in its alternative form, on the relationship between the IFR and firm performance is stated as follows:

H₂: Firm performance is positively related to the IFR

Leverage

A firm's capital structure determines its leverage condition. As companies depend more on debt in their capital structure, this will lead toward higher leverage and wider obligations to satisfy the needs of their long-term creditors for timely information. As such, they may provide more timely information via the Internet, as one of the avenues, to satisfy those needs. According to Myers (1977) and Schipper (1991), the long-term creditors require adequate and timely information to reduce their suspicion that shareholders and management are more likely to encroach on the claims that accrue to them through bond covenants. In discussing the agency theory, Jensen and Meckling (1976) also argued that more highly leveraged firms incur higher monitoring costs. As such, management may adopt various forms of voluntary disclosures, including the IFR, to reduce such high monitoring costs. The following hypothesis on the relationship between the IFR and the leverage condition is stated as follows:

H₃: Leverage level is positively related to the IFR

Growth

Growth prospects and intangibles are intertwined and the difference between market value and book value broadly represents these two variables (Myers, 1977; Ohlson, 1995). These firms will have specific knowledge that is not effectively and efficiently transferable to investor through normal accounting disclosures. Firms attempt to mitigate the information asymmetry of high growth firms by making disclosures through additional means such as conference calls (Frankel et al., 1999), or even this new means of disclosure through Internet reporting. Thus, the study expects a positive association between the IFR and firm's growth prospects, and this lead to the following hypothesis.

H₄: Growth prospects is positively associated to the IFR

Foreign ownership

The dispersion of ownership across country borders gives rise to geographical and temporal information asymmetry (Portes & Rey, 2000). The IFR can reduce such information asymmetry by its instantaneous dissemination and wide reach. Prior studies of voluntary disclosure show a positive relationship between cross boarder ownership and disclosure (e.g. Meek & Gray, 1989). Hence, the fifth hypothesis of the study is stated as follows:

H₅: The foreign ownership is positively associated to the IFR

Shareholders' concentration

Based on the dispersion perspective, highly concentrated shareholders influences the practice of voluntary disclosures. A high number of substantial shareholders means a more concentrated ownership of a firm, and signals a good governance mechanism. This is due to the pressure by these substantial shareholders (normally, institutional shareholders) on the firms is one way of reducing shareholders' monitoring costs and of alleviating the moral hazard problem (Schipper, 1991), and thus lead to the following hypothesis.

H₆: The concentration of shareholders is positively related to the IFR

Sample Companies and Research Model

The selection of the sample companies was based on the random sampling of the publicly listed companies, controlling for the size effect. No particular control was done of the industry effect as we assume that the IFR is beneficial for companies in all types of industry. The issue of adopting the IFR is just assumed as a voluntary act for the companies to enhance the dissemination of information, which weigh equal importance for all the publicly listed companies.

Based on the market capitalization for the year ended in 2001, 50 top and 50 bottom companies were chosen as the sample companies for the study. The year 2001 was chosen to be the period of study because that particular year's annual reports formed the latest source of information available at the time of the study was initially conducted. As the developments of Internet financial reporting are still at the developing stages, choosing earlier years of accounting periods (e.g. 2000 or before) might not be beneficial as most of the companies at that time still did not practice Internet financial reporting. This is further supported by a survey done in 2001 by the rating agency, Standard & Poor's (S&P) where they found out that in the emerging markets like Malaysia and Singapore, companies are almost showing above-average level of voluntary disclosures. The

number of the sample was restricted to only 100 companies as this number was thought of enough to give preliminary evidence on the IFR practices in the Malaysian publicly listed companies. The final sample companies of the study is 96 companies, as three companies were deleted from the sample due to missing accounting data, while one company was deleted due to the outlier's consideration. A further analysis revealed that the three companies deleted due to missing accounting data were PN4 companies.

The dependent variable, the IFR status, was measured by assessing the website of each of the selected companies. The web addresses of each company were obtained from the KLSE website (www.klse.com.my). All the companies are assessed using the Internet Explorer 5.0 between November 2002 and December 2002. If the assessed company has a website, which has the latest full annual or link to the KLSE website, this company is regarded as IFR companies and denoted as 1. On the other hand, if the assessed company has a website with no full latest annual report or only disclose financial highlights, and they do not provide links to the KLSE website, it is regarded as non-IFR company and denoted as 0. The company that has no website is also regarded as non-IFR companies, and therefore denoted as 0.

Based on the discussions of prior literature and theoretical framework, the following empirical estimation of the study is developed.

$$IFR = \beta_0 + \beta_1 SIZE + \beta_2 LEVERAGE + \beta_3 PERFORMANCE + \beta_4 SHARECON + \beta_5 MV/BV + \beta_6 FOREIGN + \beta_7 INDUSTRY + \epsilon_i$$

where the definitions of the above variables are as follows:

IFR	0 if the firms have no latest full annual reports disclosed through companies' websites and 1 if the firms have the latest annual reports disclosed or they provide link to the KLSE website
SIZE	measured by two proxies, (1) total assets (ASSETS) and market capitalization (MKT_CAPS). Both proxies are measured in their log forms
LEVERAGE	measured by two proxies, (1) ratio of total debts to total equity (DEBTEQUITY), and (2) ratio of total debts to total assets (DEBTASSET)
PERFORMANCE	measured by two proxies, (1) returns on assets (ROA), and (2) returns on equity (ROE)
SHARECON	measured by the percentages of shares owned by significant shareholders, which is defined as those owned more than 1,000,000 shares
MV/BV	Growth prospects is measured by the ratio of market capitalization to book value of total assets
FOREIGN	measured by the total percentages of shares held by foreign shareholders
INDUSTRY	1 is denoted for non-financial firms, while 0 is denoted for financial related firms

The result of the empirical analyses of the above empirical estimations will be presented in the following section.

FINDINGS AND DISCUSSIONS

Table 1 presents descriptive statistics of all the variables used in the test of the relationship between IFR and firm's specific characteristics. The main objective of describing all the variables is to identify the distribution of the data. The variables used to measure firm's performance (i.e. return on asset and return on equity), and growth (i.e. the ratio of market value to book value) are quite severely affected by skewed distribution. A range of values between 2 to -2 is normally used as a cut-off point for normality assumption.⁴ In order to limit the violation of normality assumption, we have transformed this data into binary form. Median value for each variable has been used as a cut-off point to transform the initial data into binary codes. The initial data above its median will be coded as "1", while those below its median will be coded as "0". The median for return on asset, return on equity and ratio of market value to book value variables which was used as the cut-off were 0.0127, 0.0144 and 2.203, respectively. As has been shown Table 1, the skewed nature of the firm's performance data and the growth data, has been rectified into reasonable distributions. Firm size (i.e. total asset and market value), on the other hand, was transformed into its log form in order to gain normality distribution of the data

Table 1

Descriptive Statistics

	Minimum	Maximum	Mean	Median	Standard Deviation	Skewness	Kurtosis
CAT(ROA)	0	1	0.49	0	0.50	0.42	-2.04
CAT(ROE)	0	1	0.50	0.50	0.50	0	-2.04
DEBTASSET	0.01	1.70	0.57	0.54	0.36	0.42	-0.14
DEBTEQUITY	0.02	1.72	0.55	0.53	0.35	0.60	0.42
LOG(ASSET)	3.86	8.15	6.02	6.03	0.97	0.11	-0.76
LOG(MCT)	3.96	7.52	5.62	6.13	1.01	0.12	-1.57
CAT(MV/BV)	0	1	0.50	0.50	0.50	0	-2.04
SHARECON	0	100	47.41	48.05	24.73	-0.13	-0.75
FOREIGN	0.20	89.02	16.37	7.64	19.25	1.81	2.91
ACTIVITY	0	1	0.88	1	0.33	-2.30	3.38

Foreign ownership variable is a bit skewed by a kurtosis value of 2.91. As it is just above the cut-off point of 2, this skewed distribution is assumed not significantly influence the results of the study. Industry variable is rather skewedly distributed due to the small number of financial companies in the sample. To test whether this skewed distribution of industry variable would influence the results, empirical analyses, which exclude financial companies from the sample, have been performed and compared to the results, which include financial related companies. The comparison revealed insignificant differences between the results of the two tests above.

Table 2 presents correlation analyses between the variables in the empirical specifications. The correlation analyses provide an initial step to identifying whether the empirical specification will suffer from the problem of multicollinearity. Further analyses have also been conducted to diagnose whether such a problem of multicollinearity is harmful to the empirical results. The cut-off point of 0.5 is normally used for an indication of high correlation

⁴ Refer to Belsley (1991), and Kennedy (1992)

Based on the correlation analyses in Table 2, there are few significant correlations of major concern (i.e. value above 0.5). The high correlation between performance measures, i.e. return of asset with return on equity (0.979), leverage measures, i.e. debt over asset with debt over equity (0.889), and firm's size measures, i.e. total asset with market capitalization (0.856), is expected and its influence has been dealt with by including only one measure of performance, leverage and firm's size for each of the estimation models.

Of greater concerns is the high correlation of other independent variables. For example, there are quite high correlations between firm performance (ROA) with firm size (MCT) (i.e. 0.509), between firm performance (ROE) with firm size (MCT) (i.e. 0.528), and between firm size (MCT) with firm's growth (MV2BV) (i.e. 0.594). These high correlations might signal the potential problem of multicollinearity. However, further analyses on the problem of multicollinearity have proved that such potential collinearity is not harmful to the empirical results.

The following discussions present the results of the descriptive characteristics of sample firms as reported in Table 3. Among the test performed is the Mann-Whitney test of the differences in means. The purpose of this test is to find whether the mean of IFR and non-IFR firm are significantly different on each independent variable. Results of the analyses are presented below.

Table 2

Correlation Analyses

	CAT(ROA)	CAT(ROE)	DEBTASSET	DEBTEQUITY	LOG(ASSET)	LOG(MCT_CAPS)	CAT(MV/BV)	SHARECON	FOREIGN	INDUSTRY
CAT(ROA)	1.00									
CAT(ROE)	0.979 (0.00)	1.00								
DEBTASSET	-0.332 (0.01)	-0.357 (0.00)	1.00							
DEBTEQUITY	-0.285 (0.05)	-0.311 (0.02)	0.889 (0.00)	1.00						
LOG(ASSET)	0.299 (0.03)	0.313 (0.02)	0.155 (0.130)	0.210 (0.114)	1.00					
LOG(MCT)	0.509 (0.00)	0.528 (0.00)	-0.082 (0.43)	-0.026 (0.79)	0.856 (0.00)	1.00				
CAT(MV/BV)	0.438 (0.00)	0.417 (0.00)	-0.044 (0.674)	-0.017 (0.868)	0.360 (0.00)	0.594 (0.00)	1.00			
SHARECON	0.186 (0.069)	0.153 (0.136)	-0.037 (0.724)	0.014 (0.895)	0.241 (0.08)	0.219 (0.11)	0.046 (0.658)	1.00		
FOREIGN	0.279 (0.06)	0.269 (0.08)	-0.004 (0.971)	-0.038 (0.716)	0.206 (0.114)	0.378 (0.00)	0.239 (0.09)	-0.024 (0.817)	1.00	
ACTIVITY	0.118 (0.252)	0.126 (0.221)	-0.198 (0.153)	-0.273 (0.07)	-0.436 (0.00)	-0.236 (0.09)	-0.063 (0.542)	-0.072 (0.487)	-0.032 (0.755)	1.00

Note: Figures in bold are the Pearson's correlation coefficient
 Figures in parentheses are the significant levels

It can be deduced that from the mean rank, firms with IFR are larger, as defined by total asset (ASSETS and MCT_CAPS), better performance (i.e. ROA and ROE), higher leverage (DEBTASSET and DEBTEQUITY), higher growth ratio (i.e. MV/BV), more concentrated shareholding (SHARECON) and more foreign held shares (FOREIGN).

The z-statistics revealed that, all the independent variables are significantly different between the two groups (i.e. IFR and non-IFR), except for leverage variables (DEBTASSET and DEBTEQUITY).

Table 3

Mann-Whitney Test for the Mean Differences of IFR and non-IFR firms

	IFR Status	Mean Rank	Sum of Rank	Mann-Whitney	Wilcoxon W	Z	Significant Level ^a
ROA	0.00	40.85	2206.00				
	1.00	58.33	2450.00				
	Between Groups			721.00	2206.00	-3.050	0.002***
ROE	0.00	40.70	2198.00				
	1.00	58.54	2458.00				
	Between Groups			713.00	2198.00	-3.109	0.002***
DEBTASSET	0.00	45.87	2477.00				
	1.00	51.88	2179.00				
	Between Groups			992.00	2477.00	-1.049	0.294
DEBTEQUITY	0.00	44.63	2410.00				
	1.00	53.48	2245.00				
	Between Groups			925.00	2410.00	-1.544	0.123
MV/BV	0.00	38.44	2076.00				
	1.00	61.43	2580.00				
	Between Groups			591.00	2076.00	-4.010	0.000***
TOTAL ASSETS	0.00	35.78	1932.00				
	1.00	64.86	2724.00				
	Between Groups			447.00	1932.00	-5.074	0.000***
MCT_CAPS	0.00	37.26	21012.00				
	1.00	62.95	2644.00				
	Between Groups			527.00	2012.00	-4.483	0.000***
SHARECON	0.00	41.56	2244.00				
	1.00	57.42	2411.50				
	Between Groups			759.50	2244.50	-2.766	0.006***
FOREIGN	0.00	40.40	2181.50				
	1.00	58.92	2474.50				
	Between Groups			695.50	2181.50	-3.231	0.001***

^a Asymptotic 2-tailed significant level

*** Significant at one percent level

** Significant at five percent level

* Significant at ten percent level

Indicator:

1 – denotes as IFR group

0 – denotes as non-IFR group

A binominal logistic regression has been adopted for this study because of the binary dependent variable. The regression has been performed based on the log likelihood test and the chi-square statistics. Among the common statistics for logistics regression is to report the Wald-statistics. Table 4 reports the results of the study on the relationship between IFR firms and firms specific characteristics. The main analyses concentrate on Model 1 to Model 8 from Table 4. The fit of the

models in explaining IFR practices was highly significant with the high Cox & Snell R-Square and Chi-Square statistics (Full Model). Generally, the Cox & Snell R-Square of each model is nearly 40 per cent and the fitness of the empirical models is generally significant at 1 per cent for all models.

The findings showed that, all of the firm-specific characteristics, except for performance variable, significantly explain the practice of IFR by Malaysian public listed firms. A possible explanation to the insignificance of firms' performance (i.e. ROA and ROE) might be due to the fact that most of the sample firms are making a loss or in the process of recovering their previous year losses. This is proven by negative mean for ROA and ROE of the sample firms are, -0.0310 and -0.02 respectively. Therefore, it can be deduced that a firm's performance does not influence the practice of IFR, thus contradicts the finding by the previous studies.

Among the variables which are consistently significant in explaining IFR practices for all models are shareholdings concentration and growth variable. We have predicted a positive relationship in associating IFR practices with share concentration. Positive sign signifies that high share concentration can lead to adoption of IFR due to institutional pressure. The analyses found that a positive relationship exists where highly share concentrated firms tend to adopt IFR practices hence, confirms that institutional pressure does play a vital role in the practice of IFR.

Table 4

Binary Logistic Regression on the Relationship between IFR and Firm-Specific Characteristics

	MODEL 1	MODEL 2	MODEL 3	MODEL 4	MODEL 5	MODEL 6	MODEL 7	MODEL 8
Intercept	-8.163 (8.842) ^{***}	-8.187 (8.871) ^{***}	-8.257 (8.819) ^{***}	-8.239 (8.668) ^{***}	-6.921 (7.488) ^{***}	-6.943 (7.480) ^{***}	-7.260 (7.743) ^{***}	-7.242 (7.751) ^{***}
CAT(ROA)	0.282 (0.150)			0.383 (0.277)	0.342 (0.213)			0.412 (0.306)
CAT(ROE)		0.246 (0.112)	0.356 (0.234)			0.307 (0.166)	0.386 (0.260)	
DEBTASSET	0.908 (1.023)	0.895 (0.977)			1.312 (2.350)	1.302 (2.292)		
DEBTEQUITY			1.302 (1.819)	1.309 (1.863)			1.720 (3.525) [*]	1.724 (3.575) [*]
LOG(ASSET)	0.742 (3.910) ^{**}	0.746 (3.890) ^{**}	0.692 (3.223) ^{**}	0.690 (3.245) ^{**}				
LOG(MCT)					0.621 (2.373)	0.624 (2.340)	0.598 (2.102)	0.596 (2.132)
CAT(MV/BV)	1.620 (6.712) ^{***}	1.636 (6.943) ^{***}	1.657 (7.058) ^{***}	1.643 (6.853) ^{***}	1.406 (4.409) ^{**}	1.420 (4.574) ^{**}	1.463 (4.803) ^{**}	1.450 (4.653) [®]
SHARECON	0.028 (4.993) ^{**}	0.029 (5.073) ^{**}	0.029 (5.001) ^{**}	0.029 (4.913) ^{**}	0.029 (5.169) ^{**}	0.029 (5.255) ^{**}	0.030 (5.196) ^{**}	0.029 (5.108) ^{**}
FOREIGN	0.027 (3.741) [*]	0.028 (3.795) [*]	0.029 (4.100) ^{**}	0.029 (4.050) ^{**}	0.230 (2.579)	0.230 (2.615)	0.026 (3.097) [*]	0.025 (3.061) [*]
ACTIVITY	-0.018 (0.000)	-0.010 (0.000)	0.040 (0.010)	0.036 (0.010)	-0.430 (0.217)	-0.423 (0.209)	-0.313 (0.106)	-0.318 (0.109)
Cox & Snell R ²	0.387	0.386	0.392	0.392	0.375	0.375	0.384	0.384
Chi- Square	46.913 ^{***}	46.876 ^{***}	47.755 ^{***}	47.797 ^{***}	45.155 ^{***}	45.108 ^{***}	46.493 ^{***}	46.539 ^{***}
Durbin-Watson	1.946	1.948	1.930	1.927	1.966	1.968	1.938	1.935

Note: Figures in bold are regression coefficients
Figures in parentheses are wald-statistics

*** Significant at one percent level

** Significant at five percent level

* Significant at ten percent level

The relationship on the growth variable was predicted that high growth firms tend to adopt IFR, i.e. positive relationship. The finding confirms this prediction as growth variable is found to be significant at one and five per cent levels. This indicates that high growth firms attempt to mitigate the information that is not effectively and efficiently transferable through traditional means by making disclosures through additional means such as IFR.

The firm's size was predicted to be positively correlated to the IFR practices. As such, the models were robust to the different measures of firm size (i.e. total asset and market capitalization), and in all the models, only the proxy of total asset are found to be positively significant at 5 per cent in explaining IFR practices. This finding is found to be consistent with other prior studies. Prior studies have argued that larger firms tend to adopt more voluntary disclosure practices including IFR due to the proposition of agency theory, need more capital, able to lower incremental cost and political cost theory. However, the other proxy of firm size (i.e. market capitalization) is found not to be significant in all models. The reason for insignificance of market capitalization proxy might be due to sample selection procedure, which was based on the market capitalization.

The other variables i.e. leverage and foreign share ownership is also found to be significant in a few models. Leverage was proxy by debt- asset ratio and debt-equity ratio. Only the latter proxy is found to be significant in Model 4 and Model 5. This finding suggests that highly leveraged firms will adopt IFR to provide more timely information as to reduce the long-term creditors' suspicion about the ability of the company to pay its obligations. The findings also suggest that foreign held share ownership significantly explains IFR practices. This supports the proposition that IFR practices can reduce the information asymmetry due to dispersion of ownership across country border by its instantaneous dissemination and wide reach.

With regard to the control variable, the empirical results suggest that industry type (i.e. financial and non-financial) does not influence the practice of IFR. This finding however is inconsistent with some previous studies and therefore it can be concluded that the relevance of IFR disclosures is not perceived to be unique to certain types of industries only, rather it is equally important across industries.

CONCLUSION

The Internet may very soon occupy the role of the main means of financial reporting. Currently, we are in the transition period from traditional paper-based reporting to the modern paper-less reporting system. As time goes, many companies now put extra emphasis on disclosure of financial and non-financial information through the Internet.

This paper analyzes the IFR practices in the Malaysian environment. Binomial logit regressions reveal that firm size, leverage, growth, foreign share ownership and shareholders' concentration are important drivers in explaining the IFR practices. These findings are consistent with prior literature (Ashbaugh et al., 1999; Debreceeny et al., 2002; Ettredge et al., 2002; Rodrigues & Carlos, 2001). However, no significant association was found for variables proxying for performance and industrial sector. Firm performance is not a significant factor in explaining the IFR practices as most of the firms are in the process of recovery after the 1997 financial crisis. The results on the industrial type also confirm to prior studies by Marston and Leow (1998) and Lymer (1997) that there is no significant difference between financial and non-financial firms in influencing the IFR practices in Malaysia.

While the study provides some initial insights into IFR practices in Malaysia, it is subjected to a number of limitations, which also provide opportunities for future research. First, the sample of the study was only limited to 100 companies as the objective of the study is to provide preliminary understanding of the IFR practices by public listed companies in Malaysia. Second, the extent of the IFR measure is only confined to the required disclosure, i.e. annual reports. Refined measurement should be used to include voluntary information as a dependent variable for the

study. Third, other factors such as economic or political factors that might influence the companies Internet reporting practices, for example, the MSC status companies that needed to have Internet reporting to obtain government contracts, was omitted in this study. Finally the broad based types of industry, i.e. financial and non-financial are not considered sufficient to achieve any conclusion on that matter. This will influence the judgment on the firms' characteristics, as different industries require different types of assets, leverage and operational performance.

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