

INTERNET FINANCIAL REPORTING BY SAUDI COMPANIES

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ABSTRACT

This study explores the status of Internet Financial Reporting (IFR) behavior of 84 companies listed in Saudi Stock Market. The results reveal that 66 (79%) of these companies maintain websites. Of these 66 companies, only 39 (59%) provided some forms of financial information on their websites. The findings indicate that the status of IFR among Saudi's listed companies is still behind those of developed countries and even some developing countries like Malaysia. This study then examines factors that influence the extent of IFR. Three factors associated with voluntary disclosure are examined: company size, leverage and profitability. Results of multiple regression analysis indicate that company size and profitability contributed significantly to the extent of IFR among Saudi companies. Policy implications and possible limitations of the study as well as suggestions for future research are discussed in the study. More importantly, it opens up possibilities for further study of IFR among Gulf countries.

Keywords: Internet financial reporting, voluntary disclosure, determinants, Saudi Arabia

INTRODUCTION

More recently, web-based business information is considered helpful in making investment and other business decisions (FASB, 2000). In particular, corporations use their World Wide Web (WWW) homepage as a platform to present financial data, especially corporate annual reports, databases on press releases and other company-specific information to their stakeholders (*Deller et al., 1999*). Compared to the traditional printed reports, the Internet offers many more opportunities to communicate financial information, and its importance in this regard is rapidly increasing (*Pirchegger and Wagenhofer, 1999*). The advantages of the Internet for financial reporting are its cheapness, speed, dynamism, and flexibility (*Lymer, 1999*). Internet reporting can be cost effective, fast, flexible in format, and accessible to all users within and beyond national boundaries (*Haniffa and Ab. Rashid, 2005*). The last five years witness a growth in the number of companies that use the Internet for voluntary reporting. It also becomes a fast growing phenomenon (*Ashbaugh et al., 1999; Oyelere et al, 2003*).

The rapidly changing business environment is forcing companies worldwide to develop reporting strategies that can aid them creating competitive advantages (*Burrus, 1997*). One example is by shifting the focus of accounting from an aggregation concept premised on periodic reports to one premised on real time access to disaggregated data, which permits access to more timely information (*Wallman, 1997*). The Internet is one important medium that provides enormous potential for companies to disseminate information to various groups of external users in a fashion that is not possible in print form (*IASC, 1999*).

Recent trend shows that many companies worldwide disseminate their corporate financial information on the Internet. Internet financial reporting (herein after know as IFR) provides companies with more flexibility as to the type of information disclosed and the presentation format of disclosures, as compared to traditional, paper-based disclosures. The content of IFR may include annual and/or quarterly reports, stock price data, press releases, analyst reports, and management discussions of operations. The presentation formats used in IFR include hyperlinks, video and audio files, processable file formats, and dynamic graphics (*Kelton and Yang, 2005*). Thus, financial analysts, users, investors, standard setters and researchers have several options regarding which Internet financial disclosures to view and the format in which to view them.

The Internet provides a unique form of corporate voluntary disclosure that enables companies to provide information instantaneously to global audience (Abdelsalam *et al*, 2007). The growing importance of the Internet as a powerful tool to disseminate financial information has attracted many professional bodies and accounting researchers from many different countries to discuss the issues (e.g. Gray and Debreceeny, 1997; Lymer, 1997; Marston, 2003). Several studies have also examined the potential factors that influence the extent of financial information disclosed on the Internet (e.g. Ashbaugh *et al*, 1999; Ettredge *et al*, 2002; Debreceeny *et al*, 2002; Oyelere *et al*, 2003; Xiao *et al*, 2004; Chan and Wickramasinghe, 2006; Bonson and Escobar, 2006). Among the dominant factors identified by researchers include firm size, profitability, leverage, industry type, auditor size, and market risk. However, most of these studies concentrated on developed countries. Studies in developing countries are rare and almost non-existing among gulf countries. Following the universal trend of IFR in other countries, this study attempts to investigate the status of IFR among Saudi listed companies. In addition, it also identifies factors influence such companies to use the Internet as a means of disclosing their financial information. Since such studies in gulf countries are scarce, it would be very interesting to compare the result of this study with those of the more developed countries.

The status of IFR among Saudi companies is worthy of study for several reasons. First, Saudi holds a 25 percent share of the total Arab Gross Domestic Product (GDP) and is the world's 25th largest exporter/importer. Second, the Saudi government has been undertaking far-reaching steps aimed at improving its investment climate to make it more appealing for domestic and foreign capital funds. Third, the Saudi Stock Market (SSM) has the highest market capitalization in the Arab region, is the 8th largest emerging market, and ranks 23rd worldwide. Finally, the issuance of the conceptual framework of accounting in 1986 and the creation of Saudi Organization of Certified Public Accountants (SOCPA) in 1992 represented major landmarks in the development of the accounting and auditing profession. Therefore, IFR is a cheap but powerful means to boost the confidence of foreign investors to invest in Saudi Arabia. Furthermore, the SOCPA will be aided with the understanding of IFR practices in Saudi Arabia that is vital for the standardization and rationalization of IFR which is now an international accounting agenda. Research is needed to understand this new phenomenon of reporting such that effective and efficient standards can be put in place. Finally, this study provides some indication on the common drivers which influence a particular firm to adopt IFR practices. This is crucial for non-

IFR firms to consider adopting IFR practices for them to remain competitive in the process of capital accumulation especially through globalization of capital markets.

The paper is organized as follows. The next section briefly outlines previous literature on IFR. This is drawn upon subsequently to develop research hypotheses, identifying appropriate independent variables, and to outline the design design. Conclusions, limitations and suggestions for future research appear in the last section.

LITERATURE REVIEW

The Internet is considered the most efficient, cheapest, and fastest tool of communication. Thus, it is no surprise that companies are moving towards using the Internet as a communication device for the distribution of corporate, marketing, and customer support information. Many companies are also choosing to make financial information available on their websites. This global trend is confirmed by the increasing number of empirical studies done on the issue. According to Abdul Hamid and Md Salleh (2005), the earliest research concerning IFR was conducted in 1999, a year after the global interest in the Internet as an advertising media has commenced.

Widespread use of the Internet as a medium of disclosure for business reporting encouraged major regulators in developed regions to establish the electronic filing systems for disclosure purposes. United States and Canada are examples of this. In 1993, the United States Security and Exchange Commission (SEC) adopted the Electronic Data Gathering, Analysis, and Retrieval system (EDGAR) which established the foundation for the electronic filing of financial reports by SEC registrants (Wallman, 1997). EDGAR system performs automated collection, validation, indexing, acceptance, and forwarding of submissions by companies and others who are required by law to file forms with the SEC. In 1997, the System for Electronic Document Analysis and Retrieval (SEDAR) was developed by the Canadian Securities Administrators and CDS INC., a subsidiary of the Canadian Depository for Securities Limited. SEDAR is an electronic filing system meant for the disclosure documents of public companies and mutual funds across Canada. The recent major step in the IFR field was the introduction of Extensible Business Reporting Language (XBRL). XBRL

is a language for the electronic communication of business and financial data, which is set to revolutionize business reporting around the world (Gray and Debreceeny, 2001).

Definition of IFR

There are various IFR definitions offered by different researchers. It is also important to note while the terms IFR and web-based financial reporting are used interchangeably; IFR is the more popular term used by researchers. Ashbaugh *et al*, (1999), for example, defined a firm as practicing IFR when it provides in its websites either; (1) a comprehensive set of financial statements (including footnotes and the authors' report), (2) a link to its annual report elsewhere on the Internet or (3) a link to the United States Security and Exchange Commission's (SEC) Electronic Data Gathering, Analysis and Retrieval (EDGAR) system.

Lymer *et al* (1999), on the other hand, defined "Web-based business reporting" as:

"... the public reporting of operating and financial data by a business enterprise via the World Wide Web or related Internet-based communications medium."

Craven and Marston (1999) used detailed annual report and parts or summaries of annual report as measurements for financial information disclosed on the Internet. FASB (2000) defined the practices on the Internet as modes of operation, techniques, and others practices designed to maximize use of the Web's capabilities to distribute business information.

Oyelere *et al* (2003) explained that a company is classified as practising IFR when it provides on the web comprehensive sets of financial statements, including footnotes; partial sets of financial statements; and/or financial highlights that may include summary financial statements or extracts from such statements. Haniffa and Ab. Rashid (2005) used disclosure of a complete version of the hard copy in the website as measurement for IFR-content. Otherwise, IFR-presentation means disclosure of those equivalents of the print format of the annual report to enhancements not available in the paper paradigm (Haniffa and Ab. Rashid, 2005).

According to Chan and Wickramasinghe (2006), a company is defined as practicing IFR, when it provides in its Websites either; (1) a comprehensive set of financial statements (including footnotes and auditor's report) or (2) a link to its annual report elsewhere on the Internet. Momany and Al-Shorman (2006) classified financial information on the Internet into three groups: (1) comprehensive set of financial statements, (2) partial financial statements or summary financial statements, (3) financial highlights.

In conclusion, various definitions have been used by researchers to refer to the IFR. However, most researchers include a comprehensive set of financial statements and financial highlights extracted from the statements to qualify as an IFR company.

IFR Status

A number of studies have been carried out to investigate the use of Internet as an instrument for the disclosure of financial information. One of the earliest studies was conducted by Petravick and Gillet (1996). They reported that 69% of the Fortune 150 companies had a website and 81% of these companies published some kind of financial information. In a later study, Petravick and Gillet (1998) reported that 79.2% of 125 Fortune 500 companies posted earnings releases on their websites on the same day as the announcement. This finding indicates that companies regard the Internet as an important medium to disseminate financial information.

Gray and Debreceeny (1997) reported that 98% of Fortune 50 companies had a website, 68% had web-based annual reports, and 36% disclosed auditor reports on the web. Lymer (1997) reported that 92% of top 50 companies on the London Stock Exchange maintain a web server and 52% of these companies published financial information on those sites. Lymer and Tallberg (1997) revealed the use of IFR in Finland was limited compared to the UK companies. While the study found 90% of 72 companies listed on the Helsinki Stock Exchange had websites, IFR practices remained hugely underdeveloped. Gowthorpe and Amat (1999) reported that 16% of 379 companies listed at the Madrid Stock Exchange had an accessible website, and only 56% of these companies practiced IFR.

Deller *et al* (1999) reported that 95% of the US companies maintained websites compared to 85% and 76% of the UK and German companies. The study also

revealed that 91% of the US companies displayed investor relations information on their websites compared to 72% and 71% of the UK and German companies. Marston (2003) found 79% of a sample of 99 Japanese companies maintained a website in English. Of these companies, 87% reported some financial information and 73% provided detailed financial information.

Several IFR studies have also been conducted in developing economies. Ismail and Tayib (2000) reported in 1999 that 92% of 237 Malaysian listed companies had websites. However, they found that only 12% of these companies disclosed their full annual reports. Joshi and Jawaher (2003) conducted a comparative study to investigate the extent of IFR among Bahrain and Kuwait listed companies. The study found 48% of 42 Kuwait companies had websites compared to 49% of 33 Bahrain companies. Based on data collected in 2004, Abdul Hamid (2005) reported that 95% of 100 stock market index-linked firms listed on Bursa Malaysia that had websites provided investor relations information. Abdul Hamid and Md Suhaimi (2005) revealed that the top five item posted in firm the Website is company background (71%), financial reports (51%), news (47%), financial highlights (42%), ratio (40%) and the least item was frequently asked questions (7%).

Several professional accounting bodies are also concerned with the development of IFR. The Canadian Institute of Chartered Accountants commissioned a study to obtain an overview of the extent of IFR practices in North America. The study, which was carried out by Trites (1999) found 69% of 370 companies randomly selected from 10,000 companies listed at New York Stock Exchange and Toronto Stock Exchange had websites and 35% of them published some form of financial information on their websites. US Financial Accounting Standards Board (FASB, 2000) reported 99% of top 100 companies of the Fortune 500 had websites, 93% of them disseminated some form of investor relations or financial information and 74% disclosed full versions of annual accounts on their websites. The above discussions indicate the increasing use of the Internet as an important medium for presenting financial information.

In addition to describing the status of IFR, researchers have more recently begun to conduct empirical studies that focused on identifying company specific characteristics that are associated with IFR. The following section discussed about the determinants of IFR in more details.

Determinants of IFR

Previous discussions provide useful insights of the status of IFR in many different countries. A number of studies examine the relationship between IFR and factors such as firm size, leverage, profitability, audit firm, industry etc. (e.g, Craven and Marston, 1999; Ashbaugh *et al*, 1999; Ettredge *et al*, 2002; Debreceeny *et al*, 2002; Oyelere *et al*, 2003; Marston and Polei, 2004; Xiao *et al*, 2004; Bonson and Escobar, 2006; Celik *et al*, 2006). This section discusses factors that might influence companies to use Internet as a means of disclosing their financial statements. Among the earliest empirical study that examine why firms adopt different IFR strategies was undertaken by Ashbaugh *et al*. (1999). Findings based on a sample of 290 American companies indicate that IFR companies are larger in size, have good operating performance and normally rated as excellent firms by the Association for Investment Management and Research (AIMR) compared to non-IFR companies.

Based on a sample 74 companies listed in the Lisbon and Porto Stock Exchange, Rodrigues and Carlos (2001) reported that firm size is the only significant factor that is associated to IFR firms. The analysis on the industry type found no significant influence on IFR practices. Based on sample 193 US companies with websites, Ettredge *et al* (2002) found IFR was positively related to company size and raising equity capital but negatively related to the firm performance.

Debreceeny *et al* (2002) surveyed 660 companies in 22 countries. The study found company size, foreign listing status, technological sophistication, and growth prospects to be significantly related to IFR practices. Other firm characteristics such as market risk and leverage were not significantly related to IFR. This study also found technological sophistication and disclosure environment were only associated with the presentation format, but not with the disclosure content. Oyelere *et al* (2003) found size, liquidity, industry sector, and spread of shareholding as the primary determinants of IFR practices among companies in New Zealand. However, other firm characteristics such as leverage, profitability and internationalization were not associated with IFR. Interestingly, Marston (2003) found firm size, profitability, industry type, and overseas listing status did not affect IFR practices among Japanese companies.

Wesley and Luiz (2004) examined the association between firm value and IFR practices among 150 companies located in three Latin countries (Argentina,

Brazil and Mexico). Results of the study revealed a significant positive association between IFR and market value, and the association is directly influenced by industry sector and size of the company regardless of the country in which it operates. Joshi and Jawaher (2003) found firm size and industry type as the main factors influencing IFR practices among Bahrain and Kuwait listed companies. However, profitability, debt ratio, auditor size and country effect were insignificant.

RESEARCH FRAMEWORK

Discussions in the previous section reveal that many factors have been found to have significant relationship with IFR status. Whilst some results seem to be contradicting to others, four variables worth noted are company size, profitability, leverage, and industry type. This section discusses the research framework.

A dependent variable of this study is the extent of IFR, i.e. the number of financial information disclosure items on the Internet. Companies that have established own websites should provide various types of financial information. A good corporate website, for example, should provide financial highlight or summary, interim report, and annual report. Such financial information disclosing on the website could aid investors and other interested parties to understand the financial position of the firm. The Internet as a tool of communication enables companies to disclose such information in a more timely manner. A high-tech feature of the Internet also enables firms to use attractive ways to display their financial statements.

Three independent variables are company size, profitability and leverage. Generally, it is assumed that larger companies disclose more information than smaller ones. This is because the structures of large companies are more complex and thus more information disclosure is necessary to allow existing and potential investors to make efficient investment decisions. Agency theory suggests that larger companies have higher agency costs compared to the smaller (Watts and Zimmermann, 1978). These higher costs can be reduced by voluntary disclosure. As voluntary disclosure can reduce monitoring costs, a significant agency cost, one would expect to find greater disclosure among larger firms relative to small firms (Oyelere *et al*, 2003). In this case, the better-

informed investors need to employ fewer monitoring measures to control the management and thus costs are reduced.

Watts and Zimmermann (1978) further argued that larger companies also face higher political costs. They are more likely to attract the attention of regulatory agencies and voluntary disclosures are a possible means of reducing political costs. It can also be assumed that the relative costs of information production are lower for large companies than for small companies which might not have sufficient resources to collect and provide extensive disclosures, for example, via the Internet. These costs may include web hosting cost, infrastructure costs (web server and software), and importantly the proprietary costs of corporate financial information (Hassan *et al*, 1999). This theoretical background forms the basis for the first hypothesis:

H₁: There is a positive relationship between company size and the extent of IFR.

Signalling theory suggests that profitable companies have the incentive to distinguish themselves from less successful companies to raise capital at the lowest possible price. Highly profitable companies are expected to be more likely to disclose good news to avoid undervaluation of their shares. The reason is that company profitability provides a signal of management quality, which may benefit the company to reduce interest costs (Watts and Zimmermann, 1978). Voluntary disclosure on the web is one way to achieve this. Furthermore, Lev and Penman (1990) argued that nondisclosure of information is perceived as bad news by investors.

Hassan *et al* (1999) found that a significant (at 5% level) positive relationship between financial performance by Malaysian companies, as measured by profit after tax and extraordinary item. Ashbaugh *et al* (1999) found that the association between profitability and disclosure was insignificant. Ettredge *et al*, (2002) revealed that no relationship between dissemination of information for investors at US corporation websites. Therefore, the second hypothesis, in alternate form, on the relationship between the IFR and the company profitability is stated as follows:

H₂: There is a positive relationship between company profitability and the extent of IFR.

A highly leveraged company has wider obligation to satisfy the needs of its long-term creditors for timely information (Watts and Zimmermann, 1978). As such, companies with a high leverage may provide more timely information via the Internet to satisfy those needs compared to those with a lower leverage companies. In discussing agency theory, Jensen and Meckling (1976) argued that more highly leveraged companies incur higher monitoring costs. To mitigate the effects of price-protection by fixed claimants, highly leveraged firms have an incentive to voluntarily increase the level of corporate disclosure to such stakeholders through traditional statements, and other media, such as IFR (Oyelere *et al*, 2003). As such, a positive relationship between leverage and the extent of IFR can be expected. Therefore, this discussion leads to the third hypothesis:

H₃: There is a positive relationship between company leverage and the extent of IFR.

METHODOLOGY

The population of this study consists of all companies listed in Saudi Stock Market (www.tadawul.com.sa). As at 31st December 2006, 84 Saudi publicly held companies were listed on the SSM. These companies were classified into eight industry types: 32 industrial, 21 services, 10 banking, 9 agricultural, 8 cement, 2 telecommunication, 1 insurance, and 1 electricity companies. However, for the purpose of this study, cement, telecommunication, insurance and electricity companies were reclassified as others category to give more companies in each sector. The year 2005 was chosen to be the base year because year 2005 annual reports formed the latest source of information available at the time the study was conducted.

The data collected were secondary data, which were obtained from the information disclosed in the companies' websites. The main purpose of the study is to examine the state of IFR among Saudi listed companies as well as to determine factors that influence extent of IFR practices. This was done by first identifying companies' websites and then examining the contents (i.e. financial information) of each website. In order to do this, several search engines such as Google and Yahoo were used.

Measurement of Variables

This study has one dependent variable i.e. the extent of IFR. This variable is defined as the number of financial information published on the Internet. For the purpose of this study, eight types of financial information have been identified to measure the extent of IFR. This information is financial highlight, audit report, balance sheet, income statement, statement of shareholder equity, cash flow, accounting notes, and interim report. The total scores of the extent of IFR would range from “0” (if they do not publish any one of the eight types of information) to “8” (if they publish all).

Size is the most dominant factor that has been identified to influence the extent of IFR (Ashbaugh *et al*, 1999; Hassan *et al*, 1999; Ettredge *et al*, 2002; Martson, 2003; Marston and Polei, 2004; Wesley and Luiz, 2004; Bonson and Escobar, 2006; Chan and Wickramasinghe, 2006). Size of a company can be measured in a number of ways, such as capital employed, turnover, number of employees, company's market value. There is no overriding theoretical reason for selecting one rather than another. For example, Firth (1979) used sales turnover and capital employed to measure the company size, and Cooke (1991) used number of shareholders, total assets and turnover to measure the size of the company. Following Ashbaugh *et al* (1999), this study used total assets to measure the size of the company. For profitability and leverage, this study followed Xiao *et al*, (2004), who measured profitability using Return on Assets (ROA). This can be done by dividing the net profit or loss by total assets. Company leverage was measured by dividing the total of liabilities by the total of assets, whereby the long-term liabilities plus the current liabilities will equal to the total of liabilities.

RESULTS AND DISCUSSIONS

Descriptive Statistics

There are 84 companies listed on SSM. Table 1 shows that 66 out of 84 (79%) Saudi listed companies maintain website addresses. The results in Table 1 indicate that banking sector has the highest percentage of companies with websites (100%), followed by industrial and agricultural sectors (78%) and finally services sector (67%).

Table 1: Cross-tabulation between Presence of Website and Industry Type

Type	Industrial		Banking		Services		Agri.		Others		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
With Website	25	78	10	100	14	67	7	78	10	83	66	79
Without Website	7	22	0	0	7	33	2	22	2	17	18	21
Total	32	100	10	100	21	100	9	100	12	100	84	100

Of particular relevance to this study, only 39 out of 66 (59%) companies with websites published some forms of financial information on those sites. Table 2 provides a breakdown of the types of industry with and without financial information on their websites. The results in Table 2 reveal that while only 78% of companies in the industrial sector maintain websites compared to 100% of companies in the banking sector, 72% of those companies published some forms of financial information on their websites. For banking sector, only 70% of those companies with websites published financial information, followed by agriculture (43%) and services (29%) sectors.

Table 2: Cross-tabulation between Disclosure of IFR and Industry Type

Type	Industrial		Banking		Services		Agri.		Others		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
With IFR	18	72	7	70	4	29	3	43	7	70	39	59
Without IFR	7	28	3	30	10	71	4	57	3	30	27	41
Total	25	100	10	100	14	100	7	100	10	100	66	100

Chi-square tests are then carried out to examine the association between industry type and the presence of website, and also between industry type and the disclosure of IFR. The results of Pearson Chi-square tests indicate an association between industry type and the disclosure of IFR (value = 8.866; $p = 0.065$). However, industry type is not associated with the presence of website (value = 4.664; $p = 0.324$).

Table 3: Type of Published Financial Information on the Internet (n = 39)

Type	Industrial	Banking	Services	Agri.	Others	Total	
	No.	No.	No.	No.	No.	No.	%
Balance sheet	14	7	3	3	4	31	79
Income statement	14	7	3	3	4	31	79
Cash flow statement	14	7	3	2	4	30	77
Statement of stakeholders equity	11	7	3	1	3	25	64
Accounting notes	10	6	3	1	3	23	59
Interim report	9	5	2	2	3	21	54
Auditor report	9	5	3	1	3	21	54
Financial highlight	6	3	1	0	2	12	31

Table 3 shows breakdown of industry type and the nature of financial information published on those sites. In summary, the results in Table 3 reveals that the most commonly published financial information are the balance sheet and income statement which were disclosed by 31 companies (79%), followed by cash flow statement (77%), statement of stakeholders equity (64%), accounting notes (59%), auditor report and interim report (54%), and financial highlight (31%).

Univariate independent sample t-tests are then carried out on the independent variables for the two main groupings of companies to test the possible difference in the means of three variables between companies that published financial information (IFRC) and companies that do not published financial information (N-IFRC). Table 4 presents the results of these tests.

Table 4: Descriptive Statistics and Univariate Sample Tests

Variable	Statistic	Companies with websites		
		N-IFRC (n = 27)	IFRC (n = 39)	t-stats
Size: total assets	Mean	5,405,310,198	21,294,929,386	.044
	Std. Dev.	14,802,066,926	38,116,578,557	
Profitability: net profit/total assets	Mean	.1130	.3985	.325
	Std. Dev.	.1509	1.4863	
Leverage: total liabilities/total assets	Mean	.4981	.6079	.724
	Std. Dev.	1.2460	1.2294	

Results in Table 4 show that IFRCs are larger than N-IFRCs. The mean total assets of IFRCs, at \$21,294,929,386, is greater than that of N-IFRCs (\$5,405,310,198). The size of total assets in IFRCs is statistically significantly higher at the 5% level. IFRCs appear more highly leveraged, with mean total liabilities to total assets ratio of 0.61:1 as compared to 0.50:1 for N-IFRCs. On average, IFRCs also generated more profit than N-IFRCs. IFRCs mean total profit (loss) to total assets ratio is 0.40:1 as compared to 0.11:1 for N-IFRCs. However, the results of independent sample t-tests indicate that IFRCs are not statistically significantly more highly financially leveraged or profitable than N-IFRCs.

One-way ANOVA

The aim of conducting one-way ANOVA test is to examine whether there is a significant difference in terms of the extent of IFR among different sectors. The results in Table 5 show that there is no significant difference between industry

type and the extent of IFR ($F = 1.764$; $\text{Sig.} = 0.159$). Looking at the mean scores of each sector, companies in the banking sector have the highest mean score (6.71), whilst companies in others sector has the lowest mean (3.71). In other words, though not statistically significant, companies in the banking sector published more financial information on their websites than companies in other sectors.

Table 5: Mean of the Extent of IFR by Industry Type

Industry Type	Freq.	Mean	S.D.
Industrial	18	4.83	2.41
Banking	7	6.71	0.95
Services	4	5.25	2.22
Agriculture	3	4.33	1.53
Others	7	3.71	2.63
Total	39	4.97	2.29

$F = 1.764$; $p < 0.1$

Multivariate Regression Analysis

This section presents an analysis and discussion of the relationship between the extent of IFR as dependent variable, and size, profitability and leverage as independent variables, using a multiple regression technique. The general structural equation that was used to explain the association is:

$$D = \alpha + \beta_1 \text{Size} + \beta_2 \text{Lev} + \beta_3 \text{Prof} + \xi$$

Where:

D = the extent of IFR, the score ranges from "0" (no financial disclosure) to "8" (full financial disclosure)

Size = total assets

Prof = net profit or loss divided by total assets

Lev = total liabilities divided by total assets

ξ = error term

The objective of multiple regression analysis is to predict the changes in the dependent variable in response to changes in the independent variables. Each independent variable is weighted by the regression analysis procedure to ensure

maximal prediction from the set of independent variables (Hair *et al*, 1998). In standard multiple regression, all the available independent variables are entered in the equation simultaneously. The outputs of the multiple regressions are presented in Tables 6 and 7.

Table 6: Correlation Matrix

	Extent of IFR	Size	Profitability	Leverage
Extent of IFR	1.000	.431*	.130	.198
Size		1.000	.103	-.055
Profitability			1.000	-.030
Leverage				1.000

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

Table 7: Regression of Extent of IFR against Size, Profitability and Leverage

Variables	Regression coefficient	T value	Sig.	Tolerance	VIF
Size	0.333	4.432	0.000*	.987	1.013
Profitability	0.035	2.311	0.023*	.989	1.011
Leverage	0.040	0.942	0.349	.996	1.004

$R = 0.494$; $R^2 = 0.244$; Adjusted $R^2 = 0.215$; $F = 8.587$; $p < 0.001$

Table 6 displays the results of correlations between the variables, and Table 7 shows the R, R Square, adjusted R Square, and standardized regression coefficient (β). In interpreting the regression variate, Hair *et al* (1998) warned that the researcher must be aware of the impact of multicollinearity. Highly collinear variables can distort the results substantially or make them quite unstable and thus not generalisable. According to Bryman and Cramer (2001), the Pearson's r between each pair of independent variables should not exceed 0.80, otherwise the independent variables that show a relationship at or in excess of 0.80 may be suspected of exhibiting multicollinearity. From the output in Table 6, it is observed that the correlation between each of the independent variables and dependent variable are below 0.5, which indicate that multicollinearity problem does not exist. Furthermore, the tolerance values above 0.1 and VIF values below 10 for all variables further confirm that multicollinearity problem does not exist.

A useful statistical test that is related to R square is the F ratio. The F ratio is based on the multiple correlation (R) for the analysis. The multiple correlation, which

is the square root of the coefficient determination, expresses the correlation between the dependent variable and all the independent variables collectively. The multiple R under consideration is 0.494 ($R^2 = 0.244$). The F test allows the researcher to test the null hypothesis that the multiple correlation is zero in the population from which the sample was taken. The F ratio is usually significant if any of the correlation were statistically significant. In this case, $F = 8.587$ and the significant level is 0.001 suggesting that it is extremely improbable that R in the population is zero.

While the F ratio is useful as a test of statistical significance for the equation as a whole, a “t” value for each coefficient and an associated two-tailed significant test represents a test of the statistical significance of the individual regression coefficients. The output indicates that company size and profitability contributed significantly to regression with t value of 4.432 and 2.311 respectively, thus supported hypothesis 1 and hypothesis 2. However, leverage appeared to be insignificant with the extent of IFR and thus hypothesis 3 can be rejected. Based on the results in Table 7, it can be concluded that statistically there appears to be significant positive relationships between size and the extent of IFR, and between profitability and the extent of IFR. However, it is evident that there is no significant relationship between leverage and the extent of IFR.

SUMMARY AND CONCLUSION

The Saudi government has taken great efforts at improving its investment climate to attract domestic and foreign capital funds. The establishment of Saudi accounting professional body over a decade ago and the rapid development of the Internet as an information medium provide unique opportunity for the development and refinement of disclosure behavior models among Saudi companies. This study examined the status and the possible determinants of discretionary IFR practices in the context of agency and other theories highlighting the incentives for voluntary disclosures among Saudi listed companies.

Results of this study indicate that 66 out of 84 (79%) Saudi listed companies maintain websites. Banking sector was found to have the highest percentage of companies with websites. However, only 39 (59%) companies with websites published some financial information on those sites. Industrial sector has the

highest percentage of companies that published financial information on their websites. The top three published financial information are balance sheet, income statement and cash flow statement.

Compared to Joshi and Jawaher (2003), the percentage of Saudi listed companies with websites (79%) is higher than those in Kuwait (48%) and Bahrain (49%). Yet, the finding suggests that Saudi companies are still behind than those in developed countries such as the US, UK and Japan. Thus, related parties such as Saudi Accounting Association (SAA) and Saudi Organization for Certified Public Accountants (SOCPA) should play a more active role in encouraging Saudi companies to voluntarily disclose their financial information on the Internet. This is important as the extent of IFR could boost the confidence of investors both locally and globally to invest in Saudi companies.

The results of Chi-square tests indicate a significantly positive association between industry type and the disclosure of IFR but not with the presence of website. In addition, the results of independent sample t-tests indicate that companies that published financial information on their websites are larger in size than those that do not. However, the expected positive associations between company profitability and disclosure of IFR, and between company leverage and disclosure of IFR were not found. It appears that profitability is not seen by the management of Saudi companies as a critical means of signaling the image of the company to raise capital at lower price. Similarly, companies with high leverage do not see Internet as an alternative means to voluntarily disclose the information for monitoring purposes.

The same independent factors were then tested with the extent of IFR disclosure. The results of multiple regression analysis reveal that only company size and profitability have significant relationships with the extent of IFR. The significant positive relationship between company size and the extent of IFR is consistent with the findings in many previous studies such as Ashbaugh *et al* (1999), Debreceeny *et al* (2002), Joshi and Jawaher (2003), Oyelere *et al* (2003), Pervan (2005), Bonson and Escobar (2006), Chan and Wickramasinghe (2006). Prior studies have argued that larger companies tend to adopt more voluntary disclosure practices including the IFR due to the proposition of agency theory (e.g. higher cost due to larger number of shareholders), need more capital, able to sustain incremental cost for disclosure due to huge resources held and political cost theory (e.g. higher regulation by the regulatory authorities).

The significant positive relationship found between profitability and the extent of IFR is consistent with the findings in several prior studies such as Ashbaugh *et al* (1999) and Debreceeny *et al* (2002). The finding also supports prior arguments that profitable companies would distinguish themselves from less successful companies by voluntarily disclosing financial information to raise capital. Despite this, the result contradicts to those found by Joshi and Jawaher (2003), Marston (2003), Oyelere *et al* (2003), Marston and Polei (2004), Chan and Wickramasinghe (2006).

Leverage, however, does not appear to have a significant positive relationship with the extent of IFR. While the finding contradicts the argument of agency theory, it is consistent with many prior evidence such as Debreceeny *et al* (2002), Joshi and Jawaher (2003), Oyelere *et al* (2003), and Chan and Wickramasinghe (2006). Finally, the result of one-way ANOVA reveals that there is no significant difference between industry type and the extent of IFR. The finding is consistent with those found by Rodrigues and Carlos (2001) and Marston (2003) but contradicts to Joshi and Jawaher (2003), Oyelere *et al* (2003), Wesley and Luiz (2004).

While this study has been successful in providing useful insight into the status of IFR among Saudi companies, it is also subject to several limitations. The study only examined four factors that might explain IFR practices i.e. industry type, size, profitability and leverage. There are possibly other factors such as level of IT, auditor size, liquidity, listing status, firm risk, growth, disclosure strategic and firm value that could further explain the extent of IFR among Saudi companies. Future research might extend the scope of this study by involving comparative studies with other Arabic or Gulf countries (such as Bahrain, Kuwait, United Arab Emirates, Qatar and Oman). Finally, the future of IFR will not just be about providing traditional information, it is expected that future Internet disclosures are more likely to provide certain advantages over traditional annual report by improving timeliness, expanding the scope of company corporate information to the public, allowing a degree of interactivity, and also the availability of annual financial data on an updated monthly basis or on a rolling basis. Therefore, future research may develop a disclosure index that includes all financial and non-financial variables to measure the extent of IFR.

In summary, the influence of company size on IFR practices among Saudi companies is consistent with the findings of most prior studies. However, while other factors such as profitability, leverage, and industry type seems to be consistent with the findings of some prior studies, the results also contradict others, and thus open for further debate regarding their influence on IFR practices.

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