The Internet Financial Reporting by Listed Saudi Companies on Tadawul Website: (Between 2004 and 2005)

Nizar Saleh Alshowaiman
Assistant Professor, Accounting Department,
College of Business and Economics, Qassim University
Saudi Arabia

Abstract. This study uses a self-constructed Internet Financial Reporting (IFR) index to examine the extent to which companies in Saudi Arabia, a developing country with an emerging financial market, use the Internet for financial disclosure. The paper also considers factors affecting such disclosure. According to data collected from the Tadawul Website for all listed companies in years 2004 and 2005, all 74 Saudi Listed Companies (SLCs) had active and accessible websites during that period. In addition to descriptive analyses, hypotheses were tested to identify the determinants of Internet-based financial disclosure. It was found that, the Saudi Capital Market Authority (CMA) emerges as the most significant factor affecting IFR in Saudi Arabia as minimum IFR requirements are applied. Aside from the employment of the BIG-4 international auditors that they implement IFR, the empirical results show that banking industry and the location of main cities play an important role in the implementation of IFR. Moreover, in both years government and foreign ownerships were shown to be insignificant for IFR adoption. These current findings indicate that exploitation of the full potential of Internet financial disclosure by Saudi companies has yet to be made.
Keywords: Tadawul; Capital Market Authority; Voluntary financial disclosures; Internet financial reporting; Saudi listed companies.

Introduction

This paper investigates listed Saudi companies' use of the Internet to disseminate financial and other corporate information, and the factors that affect this use. This topic is important because information is critical to the functioning of a capital market (Lee, 1987; Saudagaran and Diga, 1997). The Saudi government has made considerable efforts to develop the capital market, particularly the stock market. Stock trading in Saudi Arabia began in 1935 when the first public company, the Arab Automobile Company was established. However, the market remained informal and trading did not become organised until the early 1980s, when the Saudi government embarked on a rapid development programme. In 1984, the Saudi government placed all stock trading under the supervision and control of the Saudi Arabian Monetary Agency (SAMA) and authorised commercial banks to act as brokers. Currently, there are ten commercial banks working in Saudi Arabia. Only one bank is not being listed on the Saudi stock market.

A major development in the Saudi stock market was the introduction of an electronic stock trading system named Tadawul, in October, 2000. This technology provides investors with the opportunity to invest from the comfort of their own homes or offices, via the Internet. Market prices, news and corporate information are available to everyone, as they emerge, within Saudi Arabia and abroad. This new technology has boosted the transparency of the Saudi stock market, with issuers submitting regulatory announcements, such as financial statements, which are then released immediately to the public, via the Internet.

The scope of this investigation includes factors identified as being relevant to voluntary corporate disclosures in the mature economies. I also distinguish among dimensions of IFR (e.g., presentation format, content and audit) over two years. The primary focus, however, is on factors unique to the Saudi Arabian context, such as the existence of state ownership dominance and considering Saudi's strong push to attract foreign investment. Our sample consists of all 74 listed companies that have issued shares. I found that a significant number of those companies voluntarily undertake IFR.

The rest of this paper is organized as follows. Section 2 reviews prior studies of IFR. Section 3 shows the study five hypotheses. Section 4 describes our methodology, sample, and data. Section 5 reports the results and analyses. Section 6 relates the results with hypotheses. The last section presents a summary.

This study sought to explore IFR and auditing by Saudi Arabian listed companies. Specifically, its aim is to examine the extent to which Saudi companies adopt Internet reporting, identify determinants of Internet reporting in Saudi Arabia and discover how Internet reporting relates to auditing. Further, the study tries to contribute to the literature by confirming the low level of IFR implementation in Saudi Arabia and in SLCs (Saudi Listed Companies) in particular. It also shows that this level is significantly lower than the level required by the users of companies' financial statements in Saudi Arabia. This study highlights to Saudi CMA (Capital

Market Authority), SLCs, policy makers in Saudi Arabia and any related party the need and importance of implementing IFR to the level required by the Saudi market.

Literature Review

Several studies have attempted to identify determinants of IFR (Internet Financial Reporting) in developed countries. Ashbaugh, et. al. (1999), Craven and Marston (1999), and Ettredge, et. al. (2001) found that larger US and UK companies are more likely to provide financial information on the Internet. Pirchegger and Wagenhofer (1999) found that whereas firm size and profitability affect the IFR of Austrian companies, they do not affect German companies' IFR choices.

A problem in interpreting and integrating the findings of these early studies is that they provide little theoretical underpinning for their analysis. Two recent studies have attempted to alleviate this problem. Both use voluntary disclosure theories to generate hypotheses. Ettredge, et. al. (2002) studied the determinants of voluntary IFR in the US. A distinction is made between disclosure of items that are mandated by the SEC (Securities and Exchange Commission), and those not required by regulation. The findings indicate that the former are associated with company size and information asymmetry between the company and investors whereas the latter vary with company size, information asymmetry, demand for external capital, and disclosure reputation. However, the study only examined the content aspect of disclosure. It also did not explore the potential spillover effect between mandated and voluntary disclosure items (Verrecchia, 2001).

Debreceny, et. al. (2002) found that voluntary adoption of IFR in 22 countries is associated with company size and listing on an US stock exchange, but not with leverage, risk, and Internet penetration in those countries. In contrast to Ettredge, et. al. (2002), this study distinguished between presentation format and disclosure content. It found that the level of technology and disclosure environment are associated with presentation format, but not with content. However, the study did not distinguish between the disclosure of mandated and non-required items. Moreover, by including companies without a Web site and classifying them as non-disclosing companies, the strong (and debatable) implicit assumption was made that corporate disclosure is the only or primary motivation for companies to establish a Web site. Another shortcoming of these studies is treating Internet-based disclosure as if it were just an electronic version of hard copy reporting. By overlooking the innovation aspect of the former, they fail to engage the insights from studies of how innovations are adopted and spread (Wolfe, 1994).

Some studies have attempted to identify determinants of IFR in developed countries. Craven and Marston (1999), Ashbaugh, et. al. (1999), and Ettredge, et. al. (2001) discovered that bigger UK and US corporations are more liable to provide financial information online. Another study by Pirchegger and Wagenhofer (1999) discovered that whereas profitability and firm size influence the IFR of Austrian corporations, they do not influence German corporations' IFR selections.

A difficulty in understanding and incorporating the results of these early studies is that they give little hypothetical foundation for their investigation. Two recent studies have attempted to reduce this difficulty. These studies together employ voluntary disclosure theories to produce hypotheses. Ettredge, et. al. (2002) considered in their study the determinants of voluntary IFR in the US. A distinction is made between disclosures of objects that are mandated by the Securities and Exchange Commission (SEC) in the US, and those not required by law. The results show that the former are associated with company size and information abnormality between the company and investors whereas the latter differ with company size, information asymmetry, demand for external capital, and disclosure reputation. However, the study only examines the content aspect of disclosure. Additionally, it did not explore the potential effect between mandated and voluntary disclosure objects (Verrecchia, 2001).

For fifty-six firms managers' views have been used along with data gathered from websites, a recent study by (Aerts, et. al. 2006) examined how multinational firms' executives' motivations map into corporate website performance disclosure which focused on managements' beliefs about the relevance of financial, social and environmental performance disclosures and how these beliefs relate to the firm's website disclosure practices. The study found that executives' perceptions of stakeholders' importance affect their firms' web-based disclosure practices. Furthermore, media, profitability, size of business, leverage, analyst following and strategic focus are found powerful in explaining types of disclosures completed.

A survey of 17 UK-based professionals in the accounting/Internet conducted by (Xiao, et. al. 2005) developed a conceptual framework of the impact of the Internet on corporate financial reporting on the basis of the issues. That framework provides a basis for mapping existing and future studies on Internet reporting and constructing scenarios of future Internet-based financial reporting.

Within a few years after the Internet technology, the occurrence of large companies disclosing FI online has significantly improved. IFR can be characterised as (1) exclusively another distribution channel for existing printed material, (2) having the ability to interact with Internet instruments such as email tools and search engines or (3) providing enhanced or expanded information that could not be cost effectively (or even possibly) produced in paper form and which may be interrogate using interactive analysis tools (Lymer and Debreceny, 1999).

The continued growth of IFR within and beyond countries with capital market orientations is evident from replicated descriptive studies undertaken in numerous countries since 2000 (for example Barac, 2003; Nasir, et. al. 2003; Joshi and Al-Madhaki, 2003; Allam and Lymer, 2003; Bonson and Escobar, 2002; Fisher, et. al. 2000).

The potential of IFR is well documented. The possibilities of extracting data from underlying databases, tailoring content to match user needs, using multimedia communications to generate dynamic and responsive content, and using artificial intelligence applications to make possible interactive exchanges between preparers and users all lend credence to the claim that IFR 'democratises' corporate reporting

(Xiao, et. al. 2002; FASB, 2000; Trites, 1999; Ashbaugh, et. al. 1999; Lymer, 1999; Spaul, 1998; Tapscott, 1996).

A study by (Smith and Pierce, 2005) focused on the integrity IFR by reference to the adequacy of underlying corporate governance procedures. Using a sample of 100 large European companies, a questionnaire survey was used to identify whether or not governance procedures that specifically address the distinguishing features of web-based financial reporting are used by large companies. The results confirm the trend identified in prior research of increasing Internet usage to replicate paper-based FI.

A research by (Allam and Lymer, 2003) focuses on the very largest companies in five countries around the world. It examined online reporting practices of 250 companies at the end of 2001 and in early 2002 by creating a detailed attribute analysis of common factors across the companies examined. Also, the study shows developments in IFR practices since the previous extensive studies were conducted in 1999 and early 2000. The results provide new insight into recent changes in this domain. Further, the research addresses the relationship between the size of companies and its level of reporting practices, and the differences between reporting practices of large companies listed primarily in the different countries examined. These results illustrate that reporting practices differ significantly between companies in different domains.

Azwadi, et. al. (2005) conducted a study that investigated possible causes of the extent of the IFR of organisations traded under Kuala Lumpur Companies Index. While 77 of 97 companies practice some IFR activities, 74 firms used PDF format and 69 of them also used HTML. In this study's findings, financial leverage and company size were found to influence the extent of IFR, while no significant association between both industry and profitability with the extent of IFR.

The extent to which the Internet is used for financial reporting in the Netherlands was investigated in a study by (Lybaert, 2002). Results show that corporate reporting via the Internet seems to be a recognized fact. Most large companies have websites, and a growing percentage of those companies are placing business reporting information, including financial data, on their sites. Further results show that Dutch corporations differ not only in their stage of Web-use, but also in the depth or volume of released information (divided into financial statement information and other investor related information). More to the point, there is considerable variability in the manner in which the data are delivered, as shown by the scores of timeliness, technology and user support. Focussed on two sectors, it is found that the reporting behaviour within a single sector seems to be more or less consistent.

A research study of the use of the Internet for communicating corporate financial information to stakeholders was carried out by (Gowthorpe, 2004). Senior officers in a sample of smaller listed companies in the UK were interviewed about their use of the Internet for reporting corporate financial information, and about the ways in which they identify corporate stakeholders and their needs. It was found that assessment of stakeholder requirements is random, but is informed in many cases by

an intention to correct long-standing inequities in the provision of corporate information. Because the assessment of needs is largely intuitive, it is difficult to judge the effectiveness of the Internet as a mechanism for communication of corporate financial information. However, it is clear that the additional medium of communication offered by the Internet has not so far radically changed the essential nature of the dialogue between company and stakeholder, which remains irregular.

Olivier (2004) examined the evolution of business reporting on the Internet and its likely consequences for accounting, accountants and assurance services provided by auditors. It then reviews the evolving regulatory framework, noting that this is reaching into new areas, including environmental reporting, social reporting and corporate governance. It concludes with an examination of the paradoxes of globalization in the context of accounting regulation.

Wai and Nilmini (2006) maintain in their study the powerful of the Internet as communication device and their paper explores this new opportunity for the internet; as a voluntary disclosure medium. This is done by extending previous studies, which have examined the effect public accounting firm quality has on the adoption of IFR and testing this in the Australian context. The empirical results show that, while accounting firm size plays a significant role in explaining the IFR quality, the public accounting firm quality is not important for the IFR adoption which in turn has far reaching implications for using the Internet as a tool for disclosing financial information online.

Hypotheses

State Ownership

SLC's have, as companies in other countries, several types of ownership. Those types are divided to three classes as follow:

First, shares held by government agencies. According to the Saudi (CMA, 2005), 28 SLCs' 36% had shares held by government agencies. Government ownership ranged between (0.44% and 74.15%) in 2006. Second, shares held by private agencies (private individuals or private companies). As of April 2006, the shares of 13 of 78 SLCs were held by the private sector ranging from 8.00% to 88.36% for private individuals and from 4.00% to 79.00% for private companies. Third, shares held by foreign companies. As of April 2006, only 10 SLCs had shares were held by foreign companies, ranging from 3.56% to 40%. Efficiency, competence or profitability are not the goal of the state agencies. Rather they seek some specific objective. For example, government may place top priority on maintaining social order and creating job opportunity, which may favour companies employing more workers than is dictated by efficiency or profitability concerns (Xu and Wang, 1999). Further, with less restrictions government agencies usually have direct access to inside information (Defond, et. al. 1999). Like China, in Saudi Arabia political pressure might be expected on companies where government holds proportion of their total shares. Wang (2003) suggests that government investors might be subject to a high degree of political control due to simply being

government representatives.(Xiao, et. al. 2004) support that firms with government agency-held ownership perform significantly worse than other types of firms. So these would reduce IFR because it might be surmised that companies with a higher percentage of government ownership have less motivations to employ IFR than other ownership types. It is therefore hypothesised that:

H1: The extent of IFR is negatively associated with the proportion of government ownership.

Foreign listing/share ownership

Agency theory implies that Saudi firms with foreign listings would voluntarily disclose more information, including that designed for foreign investor use. More extensive voluntary disclosures and a widened dissemination of financial information also can create an impression of greater transparency, which may be particularly important for foreign investors. Along the lines of this argument, Cooke (1998), Ferguson, et. al. (2002), and Xiao, et. al. (2004) report that firms that are listed on several stock exchanges make more information disclosures. It is understandable that foreign investors or shareholders in general would want to have reports presented in accordance with International Accounting Standards (IAS) or the accounting standards of foreign countries which will lead to additional disclosure and the requirement to be audited by one of the big-4 audit firms. Auditing by the big-4 firms should enhance the implementing IFR. Consequently, it is hypothesised:

H2: The extent of IFR is positively associated with the proportion of foreign ownership.

Auditor type

Agency theory posits that auditing assists to alleviate the interest conflicts between management and shareholders. Commonly, because they have more to lose from losses of reputation, larger audit firms have a greater incentive to uphold their independence and to enforce tougher and more extensive disclosure standards (DeAngelo, 1981; Malone, et. al. 1993; Xiao, et. al. 2004). Therefore, larger auditors are likely to be engaged by managements who recognise probable gains from objective high level evaluation and assessment by outside agents. This assumption is in accord with signalling theory. Organizational administrators appreciate the motivations which drive reputable auditors to demand top quality disclosure, and their engagement of such auditors is an indication of their acceptance of such demands (Datar, et. al. 1991; Healy and Palepu, 2001; Xiao, et. al. 2004). Xiao, et. al. (2004) supported the findings of Craswell and Taylor (1992) and Inchausti (1997) which indicate a positive link between firms employing bigger auditors and their level of disclosure. To the extent that IFR stands for more extensive disclosure, both agency and signalling theories imply a positive relation with the hiring of a large audit firm with the engagement of a big audit firm. The fashion perspective of

innovation diffusion supports such anticipation too by considering auditors as change agents. In contrast to smaller Saudi auditors, large auditors, especially Big-4 international audit firms, are more likely to facilitate the transmission of innovative practices, as well as IFR. First, these auditors' reputation provides safety against the improbability and failure of control from disclosure via the Internet. Second, they can both serve as role models and provide implementation assistance. After considering agency and, signalling theory, and innovation diffusion theory, it is hypothesised:

H3: The extent of IFR is greater among Saudi companies audited by Big-4 international audit firms.

Industry type

Prior studies on voluntary disclosure have found evidence that firms from some industries disclose more information than others. (Inchausti, 1997; Ferguson, et. al. 2002). However, Craven and Marston (1999) did not find any relationship between industry type and IBD extent. SLCs are the most important of all Saudi companies to the economy and the banking industry is one of the most important industries due to the leading role in commercial and financial activities. Also, it is the only industry that is supervised both by Saudi Arabian Monetary Agency (SAMA) and the Saudi Capital Market Authority (CMA). Banking companies are more likely than other companies to adopt IBD because of their expertise with the Internet. Saudi banks have more accurate and advanced financial reporting system since they are supervised and controlled by two parties (SAMA, 2005). In addition, banks have unique and advanced system that relates banks with their customers online, this system called Internet banking system. It allows customers to deal with their accounts and business easily, fast and secure (SAMA, 2003).

Cohen and Levinthal (1990) argue that organisations with a better prior related knowledge to incorporate and use new knowledge are more likely to adopt novelties.

H4: The extent of IFR is greater among Saudi companies in the banking industry than in other industries.

Location

Companies in large cities enjoy better information technology infrastructure. For example, it is easier for them to be connected to the Internet, to obtain the necessary resources (such as trained Internet experts) for establishing and maintaining a Website and for converting financial data from hardcopy report to Web formats. In Saudi Arabia more than three-quarters of its listed companies are in main cities. Statistically, 56 (76%) of SLCs are located in three main cities, namely, Riyadh, Jeddah, and Dammam (CMA, 2005). In addition, in Saudi small cities, using the Internet is limited since the Internet might not be available all the time. As a result of that, companies in small cities would be more interested in using printed

disclosure rather than the Internet disclosure. According to Al-Htaybat and Napier (2005), if Internet usage is relatively limited in a particular location, then we would expect that companies would be comparatively slow to use the Internet to supplement printed disclosure. Further, main cities are more likely to be the location of larger firms or their headquarters. For example in Saudi Arabia more than three-quarters of its listed companies are in main cities. Statistically, 56 (76%) of SLCs are located in three main cities, namely, Riyadh, Jeddah, and Dammam (CMA, 2005). Larger companies are more likely to be located in bigger or main cities, hence I hypothesize:

H5: The extent of IFR is greater among companies in main Saudi cities than in other cities.

Methodology

Sample

My sample was 74 Saudi listed companies (in terms of total assets for two periods of time, at December 31, 2004 and 2005, respectively). This sample was used for three reasons. First, consistent with prior studies, I assumed that listed companies are more likely to have the resources to adopt IFR, and their failure to do so is more likely reflect the result of a deliberate choice. Second, Saudi listed companies make the most important contribution to the Saudi Arabian economy. Third, the sample size of all 74 SLCs as of Dec. 2004 satisfied the resource needs for data collection.

Disclosure index

I developed a disclosure index of 75 items based on the framework of Web-based disclosure proposed by Xiao, et. al. (2004) and Debreceny, et. al. (2001), with further reference to other prior studies by Deller, et. al. (1999), Pirchegger and Wagenhofer (1999), Marston and Polei (2004), Ettredge, et. al. (2002), Debreceny and Gray (1999), Fisher, et. al. (2004), Cook (1999), and Azwadi, et. al. (2005). The index encompassed 38 items of disclosure content, 12 items about presentation format, and 25 items about audit. The content items show what Saudi companies disclosed on their Web site (e.g., current year financial statement, current year cash flow statement), The presentation format items dealt with how the information was presented (e.g., whether in a processable format) and its convenience of use (e.g., whether there were flash files, search engine or table of contents). The audit items such as whether the auditor report of the current year was included, or the financial statements were audited by big 4 audit firms. There are 19 items in the index below which have not been adopted in prior studies, but they were included because some of them were found in a number of the reporting companies' websites e.g. item number 9 (third quarter report of last year) or item number 56 (auditor scanned seal of current year report). In addition, some items were unique to Arab societies like Saudi Arabia society such as item number 43 (Arabic language Web pages). It gave

an indication to the researcher that they could be interesting to the users of the reporting companies' financial statements if considered. Moreover, two items that were not found in the reporting companies' websites or that were not unique to Saudi Arabian culture, namely items 58 (publishing details on the website about the external auditor) and 75 (financial statements are hyperlinked to unreliable third party websites), were included "because the reliability of Web-based information is a major concern to users" (Xiao, et. al. 2002).

Disclosure index analyses and results

Descriptive analyses

There are two datasets for the index disclosure analyses for 74 companies used. The researcher looked at the total number of items disclosed on the Tadawul Website in the same years for those companies. He found that, in 2004 and 2005, all 74 companies disclosed board information, historical share prices financial year end, while, none of them disclosed management report/analysis of current year, management report/analysis of last year, correction or revision to current year annual report, or Internet banking.

Table (1). Contents, presentation and audit items of Internet-based disclosure by all Saudi listed firms on Tadawul Website (as of Dec. 2004 and Dec. 2005).

Item No.	Disclosure items	Overlap with previous studies*	No. & % of companies disclosing this item on Tadawul Website for 2004 and 2005			
			2004		2005	
	Content items		#	%	#	%
1	Company Web site.	10	74	100	74	100
2	First quarter report of current year.	1,5,10	64	86.5	74	100
3	Second quarter report of current year.	10	64	86.5	74	100
4	Third quarter report of current year.	10	60	81.1	74	100
5	Fourth quarter report of current year.	10	3	4.1	0	0
6	Annual report of current year.	1	0	0.0	0	0
7	First quarter report of last year.	1	64	86.5	74	100
8	Second quarter report of last year.		67	90.5	74	100
9	Third quarter report of last year.		69	93.2	74	100
10	Fourth quarter report of last year.		54	73.0	74	100
11	Annual report of last year.	1	70	94.6	74	100
12	Half year report of current year.	1,2,3,4,10	63	85.1	74	100
13	Half year report of last year	1	67	90.5	74	100
14	Annual report of current year (full text).	1,3,4,5,10	0	0.0	0	0
15	Annual report of last year (full text).	1,4	0	0.0	74	100
16	Annual report of two years ago (full text).		0	0.0	74	100
17	Annual report of three years ago (full text).		0	0.0	74	100
18	Annual report of current year (quotation).		0	0.0	74	100
19	Balance sheet of current year.	1,2,3,4,5,6	0	0.0	0	0
20	Balance sheet of last year.	1,2	71	95.9	74	100
21	Income statement of current year.	1,2,3,4,5,6	0	0.0	0	0
22	Income statement of last year.	1,2	73	98.6	74	100
23	Cash flow statement of current year.	1,2,3,4,5,6	0	0.0	0	0
24	Cash flow statement of last year.	1,2	73	98.6	74	100
25	Notes to financial statements of current year.	1,2,3,4,5,6	0	0.0	0	0
26	Notes to financial statements of last year.	1,2	72	97.3	74	100
27	Management Report/Analysis of current year.	1,2,3,4	0	0.0	0	0
28	Management Report/Analysis of last year.		0	0.0	0	0
29	Correction or revision to current year annual report.		0	0.0	0	0
30	Internet Banking.		0	0.0	0	0

Item No.	Disclosure items	Overlap with previous studies*	No. & % of companies disclosing this item on Tadawul Website for 2004 and 2005			
			2004		2005	
Content items					
31	Board information.		74	100.0	74	100
32	Financial year end.		74	100.0	74	100
33	Date company established.		0	0.0	74	100
34	Historical share prices.	1,4,5	74	100.0	74	100
35	Current share price/ average trading price.	1,2,3,4,5,6	56	75.7	74	100
36	E-mail address for investors.	1,2,3,4,5	74	100.0	74	100
37	Phone number for investors.	1,5	74	100.0	74	100
38	Postal address for investors.	1,3,5	74	100.0	74	100
	Presentation items					
39	Help information / Email form.	1,4,5	0	0.0	74	100
40	Table of content/ Sitemap.	1,3,4,5	0	0.0	74	100
41	Internal search engine.	1,2,3,4,5	0	0.0	74	100
42	English language Web pages.	1,3,5	54	72.9	74	100
43	Arabic language Web pages.		58	78.4	74	100
44	Hyperlinks inside the annual report.	1,2,3,4,5	0	0.0	0	0
45	Annual report in PDF-format.	1,2,4,5,10	0	0.0	0	0
46	Annual report in html-format.	1,5,10	0	0.0	74	100
47	Clear direction for annual report.		0	0.0	0	0
48	Use video files in the annual report.	1,3,5	0	0.0	0	0
49	Use audio files in the annual report.	1,5	0	0.0	0	0
50	Use flash files in the annual report.	1,5	0	0.0	0	0
	Audit items					
51	The name of the external auditor.		71	95.9	74	100
52	Auditor report of current year.	1,2,3,4,5	0	0.0	0	0
53	Auditor report of last year.	1,2	0	0.0	74	100
54	Auditor scanned signature of current year report.	1	0	0.0	0	0
55	Auditor scanned signature of last year report.	1	0	0.0	74	100
56	Auditor scanned seal of current year report.		0	0.0	0	0
57	Auditor scanned seal of last year report.		0	0.0	74	100
58	Publishing details on the website about the external auditor.		0	0.0	0	0
59	Auditor's report is posted along with the statements.	9	0	0.0	74	100
60	Links to the external auditor's Website.	9	0	0.0	0	0
61	Links from the auditor's report to the company's home.	7,8	0	0.0	0	0
62	Links from the auditor's report to the company's financial statements.	7,8	0	0.0	0	0
63	Links from the auditor's report to the company's other web pages.	7,8	0	0.0	0	0
64	Direct link to auditor's report from the company's other WebPages.	8	0	0.0	0	0
65	Warning users when leaving audited pages.	8	0	0.0	0	0
66	The auditor's report is available on-line all the time.	8	0	0.0	74	100
67	The auditor's report is on demand basis.	8	0	0.0	0	0.0
68	The auditor's report is dated.	8	18	0	0.0	74
69	Audit firm logo is placed in the audit report.	8	0	0	0.0	0
70	Audit report is listed in table of contents.	8	10	0	0.0	74
71	Audited financial statements are distinguished from non-audited statements.	8	16	0	0.0	74
72	Audit report on the website is complete.	1	18	0	0.0	0
73	The financial statements on the website are comprehensive.	1	0	0	0.0	0
74	Indication on the company's website if it is audited by one of the big-4 audit firms.	1	35	35	47.3	35
75	Financial statements are hyperlinked to unreliable third party websites.		0	0	0.0	0

Notes: 1= Xiao, et. al. (2004), 2= Deller, et. al. (1999), 3= Pirchegger and Wagenhofer (1999), 4= Debreceny, et. al. (2001), 5= Marston and Polei (2004), 6= Ettredge, et. al. (2002), 7= Debreceny and Gray (1999), 8= Fisher, et. al. (2004), 9= Cook (1999), and 10= Azwadi, et. al. (2004)

Each content item is assigned either a 1 or a 0 depending on whether it is disclosed or not.

Table (1) above lists all 75 index items and whether these are disclosed in two time periods; Tadawul Websites in 2004 (dataset 1), Tadawul Websites in 2005 (dataset 2). It also shows which items overlap those in prior related studies, and which are unique to my study to reflect special features of the Saudi environment.

There are 19 of the 75 items in the index below which have not been adopted in prior studies. They were included because some of them were found in some of the reporting companies' websites e.g. item number 9 (Third quarter report of last year) or item number 56 (Auditor scanned seal of current year report). In addition, some items were unique to Arabic societies like Saudi Arabia society such as item number 43 (Arabic language Web pages). It gave an indication to the researcher that they could be in interest of the users of the reporting companies' financial statements if they considered. Moreover, two items that were not found in the reporting companies' websites or were not unique items to Saudi Arabia culture, they are item 58 (Publishing details on the website about the external auditor) and item 75 (Financial statements are hyperlinked to unreliable third party websites), these two items were included "because the reliability of Web-based information is a major concern to users" (Xiao, et. al. 2002).

The first dataset on Table (1) shows some interesting results from the descriptive statistics. While 27% of the 74 companies published an annual report in PDF format, only 8.1% provided an annual report in HTML format. Further, even though 22.9% put current share prices, only 8.1% published the historical share prices. Just 2.7% showed corrections or revision to the current year annual report. Additionally, 60.8% used Arabic and English publishing their financial information. The most often disclosed content items include the phone number for investors 64.9%, the email for investors 62.1%, postal address for investors 60.8%, date the company was established 44.5%, the financial year end 43.2%, and board information 37.8% The three most frequently included presentation format items were English and Arabic Web pages 60.8%, help information/email form 29.7%, and clear direction to annual report 31%. The most often disclosed audit items include the financial statements audited by big 4 audit firms 47.2%, the name of the external auditor 27%, followed by all of the auditor report of last year. Auditor's report is posted along with statements, direct link to auditor's report from the company's other WebPages, auditor's report is available on-line all the time, date on the auditor's report, and completed audit report in the clients' Websites with a percentage of 24.3%, and distinguishing between audited and non-audited financial statements 21.6%. None of the dataset firms used video or audio files in the annual report, showed a clear relationship between the company and its external auditor, provided links to the external auditor's Website or links from the auditor's report to the company's homepage, financial statements, or the Website's other Web pages, warned users when leaving audited pages, provided the auditor's report on demand basis, or placed the audit firm logo on the audit report. Moreover, financial statements on company's Website differed from those on the central Website, and

clients' financial statements were hyperlinked to unreliable third party Websites. Findings also reveal that just one company published an annual report of the current year (full text), one company published an annual report of the current year (quotation), one company used hyperlinks inside the annual report, one company used flash files in the annual report, and very few companies presented an annual report of current year. Just two companies provided revision to the current year annual report. I myself also faced difficulty using the Web sites in general. For example, only 21.6% of the sites had an internal search engine, and only 17.5% had a table of contents/site map.

The second dataset on Table (1) states some interesting observations. While 25.7% of the 74 companies published an annual report in PDF format, less than in 2004, 10.8% provided an annual report in HTML format, a higher percentage than in 2004. Further, while 23% published current share prices, no more than 17.6% published the historical share prices. Only one company showed corrections or revision to the current year annual report. While, 54.1% published using the Arabic language, 63.5% published using the English language.

Similar to dataset 1, in year 2004, the most often disclosed content items include the phone number for investors 64.9%, the email for investors 60.8%, the postal address for investors 59.5%, the date the company was established 55.4%, both the financial year end and the board information 43.2%. The three most frequently included presentation format items were English Web pages 63.5%, Arabic Web pages 63.5%, help information/email form 33.8%, and clear direction to the annual report 29.7%. The most often disclosed audit items include financial statements audited by big 4 audit firms 47.2%, the name of the external auditor 28.4%, followed by all of the auditor report of last year, auditor's report is posted along with statements, direct link to auditor's report from the company's other WebPages, auditor's report is available on-line all the time, date on the auditor's report, and completed audit report in the clients' Websites with a percentage of 25.7%, and distinguishing between audited and non-audited financial statements 20.3%.

Moreover, similar to dataset 2004, none of the 2005 dataset firms used video or audio files in the annual report, showed a clear relationship between the company and its external auditor, provided links to the external auditor's Website, links from the auditor's report to the company's homepage, financial statements, or the company's other Web pages, warned users when leaving audited pages, provided the auditor's report on a demand basis, or placed the audit firm logo on the audit report. In addition, financial statements on a company's Website are differed from those on the central Website, and clients' financial statements were hyperlinked to unreliable third party Websites. Further, there are more items with a zero score, which meant they were not disclosed in 2005, such as the forth quarter and annual reports of the current year, full text of annual report, management report/analysis of current year, and auditor scanned seal of 2005. Also, findings indicate that just one company published an income statement of the current year, one company published corrections or revision to the current year annual report, one company used

hyperlinks inside the annual report, one company used flash files in the annual report, and an auditor scanned signature on the current year report. Only three companies presented an annual report of the current year (quotation). The researcher faced difficulty finding information needed from companies' Websites, in 2005. He found that only 27% of all SLCs sites had an internal search engine, and 20.3% had a table of contents/site map.

Table (2). Explanation of dependent and independent variables

Variables	Explanation
Dependent variables	
TOTALSCORE	Total score for all 75 disclosure items
CONTENT	Total score for content items
FORMAT	Total score for presentation items
AUDIT	Total score for audit items
Test Variables	
GASHARE	Shares held by government agencies as a proportion of total shares in 2005
FRSHARE	Foreign shares as a proportion of total shares in 2005
BIG-4	1 for companies audited by a Big-4 auditing firm in 2004, 0 if not
INDUSTRY	1 for Banking companies in 2004, 0 if not
LOCATION	1 for companies located in Saudi main cities: Riyadh, Jeddah, or Dammam, 0 if not
Control Variables	
SIZE	The natural Logarithm of the paid capital of companies at December 31, 2005
FIXED ASSETS	Fixed assets over total assets in each of the years 2004 and 2005
LEVERAGE	The ratio of total liabilities to total assets in each of the years 2004 and 2005
RTA	Return on Total Assets in each of the years 2004 and 2005

Table (2) above provides a summary of all the variables used in the hypothesis tests of this research. The dependent variables are constructed from the items in the disclosure index. Four measures of IFR were used; the main measure is TOTAL-SCORE, a company's total disclosure score across the entire 75 items. The remaining measures are constructed from different subsets of the 75 items to focus on specific aspects of disclosure. Consistent with Xiao, et. al. (2004), the researcher differentiates between CONTENT, FORMAT and AUDIT (a company's disclosure scores for the content, presentation format, and audit items respectively).

Table (3). Descriptive statistics for categorised variables

Panel A: Categorical variables (test variables):		
	Number of companies (#)	Percentage (%)
BIG-4	35	47.3
INDUSTRY	9	12.2
LOCATION	57	77

Table (3) states the descriptive statistics for the categorised variables, it indicates that 35 (47.3%) of companies had a Big-4 auditor. As a point of reference, Xiao, et. al. (2004) reported a corresponding statistic of 17.2% for their sample of 300 listed Chinese companies as of 2004. It also shows 9 (12.2%) of companies

were in the Banking industry, and 57 (77%) were located in Saudi main cities (i.e. Riyadh, Jeddah, and Dammam) as of December 2005.

Table (4). Mean, Standard deviation and Paired T-tests for four IFR measures

YEAR		2004		2005		2004-2005
Mean, Standard Deviation & M. Diff.		Mean	Standard Deviation	Mean	Standard Deviation	Mean Difference
Tadawul Website	TotalScore	23.18	3.80	43.46	.50	-20.28***
	Format	20.16	3.21	27.00	.00	-6.84***
	Content	1.51	.83	7.00	.00	-5.49***
	Audit	1.43	.57	9.47	.50	-8.04***

*** Significant at p= .001 level of significance (2-tailed significance)

Table (4) displays the four dependent variables TOTALSCORE, CONTENT, FORMAT and AUDIT and shows what the trend is across the Tadawul Website over two years. The mean and standard deviation for each combination of YEAR is given along with paired samples t-test results comparing the mean scores for each of the four IFR measures across the 2 years at Tadawul Website.

The paired samples t-test results reveal that for the Tadawul Website, there is a significant difference over the two years, with the mean scores being higher in 2005 compared to 2004 for each of the four index disclosure measures.

For the Tadawul Website, the researcher initially looked at the 2004 and 2005 datasets separately and then a combined analysis over the two years is carried out. Mean scores have sharply increased from 23.18 in 2004 to 43.46 in 2005 for all 75 items, from 20.16 in 2004 to 27 in 2005 for the format items, from 1.51 in 2004 to 7 in 2005 for the content items, and from 1,43 in 2004 to 9.47 in 2005 for the audit items. Further, on Tadawul Website, the standard deviation for all disclosure indices has in general decreased from 2004 to 2005. The significant changes between the two years on Tadawul Website might have occurred because of the establishment of the Saudi CMA by the Capital Market Law, issued by Royal Decree No. (M/30) dated 16th June, 2003. In 2004, following its foundation, CMA began through new regulations to enforce gradually all SLCs to publish some required financial information on the CMA's Website, which is Tadawul Website. The CMA, for example, requires all SLCs to publish their quarterly financial statements online immediately and no later than fifteen days after every quarterly report, and for annual statements (i.e. end of year reports), no later than forty days. To make that easy, CMA or Tadawul provides specific online forms to be filled in, usually by one of the SLCs' coordinators who enter new data with a unique password that has been provided by Tadawul.

Tadawul Website's datasets:

The following two subsections survey and analyse the financial information available in the Tadawul Website which belongs to the Saudi CMA in 2004 and 2005, respectively. As previously indicated, the Saudi CMA regulates the disclosure

of all financial information items needed by users. The Saudi CMA requires
companies to publish some of this information at specific times in the financial year.

Tadawul Websites in 2004:

As shown above, Table (1) indicates that 74 companies were linked to
Tadawul and have Websites. No annual reports of current year, no annual report of
current year (full text), no annual report of last year (full text), no annual report of
two years ago (full text), no annual report of three years ago (full text), and no
balance sheet nor income statement of current year of all of the 74 SLCs were
disclosed on the Tadawul Website. On the other hand, all of the SLCs show board
information, historical share price and financial year end. Yet, all of them put some
useful information for investors such as email addresses, phone numbers, and postal
addresses.

Table (5) shows that for the 74 companies, the mean score for all 75 items in
the disclosure index is 23.18 (range: 9–27). Mean scores for the 38 content items, 12
presentation format items, and 25 audit items are 20.16, 1.51, and 1.43, respectively
with ranges of 7-23, 0-2, and 0-2, respectively.

Table (5). Descriptive statistics for IFR measure variables (Tadawul Website 2004)

	Minimum	Maximum	Mean	Median	Std. dev.	Skewness	Kurtosis
Dependent variables							
TOTALSCORE	9	27	23.18	25	3.80	-2.05	3.91
CONTENT	7	23	20.16	21	3.21	-2.38	5.52
FORMAT	0	2	1.51	2	.83	-1.22	-.41
AUDIT	0	2	1.43	1	.57	-.39	-.75

Note: Variables are defined in Table (2).

Univariate analysis and multicollinearity diagnostics (Tadawul Website 2004)

Table (6) shows a number of significant correlations among dependent and
independent variables which provide support for some of the hypotheses.
INDUSTRY is significantly and positively correlated with TOTALSCORE,
FORMAT and AUDIT. Also, BIG-4 has significantly positive correlations with
TOTALSCORE, CONTENT, FORMAT and a highly significant correlation (0.80)
with AUDIT. LOCATION has significantly positive correlations with
TOTALSCORE, CONTENT and FORMAT. FRSHARE has a significantly positive
correlation with FORMAT. SIZE has a significant correlation with FORMAT. RTA
has significant correlations with TOTALSCORE and CONTENT while
FIXEDASSETS has a negative correlation with AUDIT.

Among the independent variables, a slightly high correlation exists between
FRSHARE and INDUSTRY (.59) while there is a moderately negative significant
correlation between FIXEDASSETS and INDUSTRY (-.50). All remaining
correlations are relatively low. To further assess the potential for multicollinearity,
the researcher regressed TOTALSCORE on all explanatory variables, and obtained

Variance Inflation factors (VIF) below 2.5 and tolerance levels above 0.40 for all independent variables (see Table (7) below). Therefore, multicollinearity should not be a serious concern in the study.

In the robustness tests section of this chapter, the researcher looks at models excluding industry to see if there were any changes in relation to the hypotheses, given the fairly high correlation between the test variables INDUSTRY and FRSHARE.

Table (6). Pearson correlation coefficients (Tadawul Website 2004)

		1	2	3	4	5	6	7	8	9	10		11	12
1	TOTALSCORE	1												
2	CONTENT	.95	1											
3	FORMAT	.51	.31	1										
4	AUDIT	.50	.35	.16	1									
5	GASHARE	.03	.00	.08	-.05	1								
6	FRSHARE	.04	-.02	.20	.12	-.16	1							
7	BIG-4	.41	.24	.30	.80	-.01	.26	1						
8	INDUSTRY	.26	.19	.22	.37	-.10	.59	.39	1					
9	LOCATION	.26	.20	.34	.08	.01	.19	.13	.20	1				
10	SIZE	.12	.03	.31	.14	.43	.30	.31	.39	.16	1			
11	FIXD ASSETS	-.05	.05	-.14	-.24	.32	-.32	-.33	-.50	-.34	-.07	1		
12	LEVERAGE	.05	.02	.09	.16	.18	-.08	.17	-.20	.04	.23	.22	1	
13	RTA	.22	.23	.09	.10	-.01	-.14	.15	-.13	-.02	.07	.18	-.14	1

1. Variables are defined in Table (2).
2. All coefficients are based on 74 observations
3. Coefficients that are significant at p= 0.05 or better (one-tailed) are highlighted in bold type

Table (7). Tolerance and Variance Inflation Factors (Tadawul Website 2004)

		B	Tolerance	VIF
	(Constant)	20.36***		
1	GASHARE	.24	.62	1.61
2	FRSHARE	-6.74	.60	1.68
3	BIG-4	2.76***	.66	1.52
4	INDUSTRY	4.23**	.43	2.32
5	LOCATION	2.51**	.84	1.19
6	SIZE	-.39	.52	1.93
7	FIXD ASSETS	3.43*	.53	1.88
8	LEVERAGE	.01	.70	1.44
9	RTA	.08	.77	1.30

Notes:
1. Dependent variable is TOTALSCORE.
2. Variables are defined in Table (2).
3. VIF = variance inflation factor.
4. *, **, and *** —Significant at p = 0.10, p = 0.05, and p = 0.01 respectively (one-tailed probabilities).

Multivariate hypothesis tests (Tadawul Website 2004)

Table (8) shows the outcome of four regression models used to test all disclosure index hypotheses of this research. These models were derived from crossing four alternate measures of IFR (TOTALSCORE, CONTENT, FORMAT, and AUDIT) with two ownership variables, GASHARE, and FRSHARE, and three independent categorical variables, BIG-4, INDUSTRY, and LOCATION.

In Table (8), I found no heteroscedasticity detected in any of these OLS models using White's test. Among the test variables, for INDUSTRY, three out of four coefficients are positive and significant, the exception being FORMAT. Also, BIG-4 is positively and highly significantly associated with two of the IFR measures: TOTALSCORE and AUDIT. LOCATION is significantly and positively associated with three out of four IFR measures, TOTALSCORE, CONTENT and FORMAT. FRSHARE has a significantly negative association with the AUDIT IFR measure.

Further, among the control variables SIZE is significantly and negatively correlated with the AUDIT IFR measure, while FIXEDASSETS is significantly and positively associated with TOTALSCORE and CONTENT. In contrast, the coefficients for GASHARE, RTA and LEVERAGE are all insignificant.

Table (8). Regression results for 74 companies (Tadawul Website 2004)

Ordinary least squares regressions				
	TOTALSCORE	**CONTENT**	**FORMAT**	**AUDIT**
Constant	20.36***	18.54***	.13	1.36***
GASHARE	.24	-.38	.01	-.01
FRSHARE	-6.74	-6.21	.49	-1.01*
BIG-4	2.76***	1.31	.30	.91***
INDUSTRY	4.23**	4.08**	.06	.50***
LOCATION	2.51**	1.92**	.57**	.00
SIZE	-.39	-.40	.11	-.07*
FIXD ASSETS	3.43*	3.56*	.14	.18
LEVERAGE	.01	.01	.00	.00
RTA	.08	.08	.01	.00
Model summary				
Adjusted R- squared	.23	.13	.12	.65
F- ratio	3.35***	2.22*	2.06*	16.05***

Notes:
1. Variables are defined in Table (2).
2. *, ** and *** —Significant at p= 0.10, p= 0.05, and p= 0.01 respectively (one-tailed probabilities for explanatory variables and two-tailed probabilities for constants, model summary and diagnostics).
3. Heteroscedasticity Test Passed (no heteroscedasticity is detected using White's Test)

Tadawul Website in 2005:

As previously observed in Table (4) above, Tadawul disclosed more SLC's financial information in 2005 than in 2004. In 2005 (as was the case in 2004), 74 SLC's Websites were linked to Tadawul Website (from Table (1)). Table (9) shows that for the 74 companies, the mean score for all 75 items in the disclosure index is 43.46 (range: 43–44). Mean scores for the 38 content items, 12 presentation format items, and 25 audit items are 27, 7, and 10, respectively with ranges of 27-27, 7-7, and 9-10, respectively. It should be noted that there is no variation for the content and format scores in 2005 on the Tadawul Website; that is, for all 74 companies, the same number of items is disclosed for these two disclosure indexes.

Table (9). Descriptive statistics for IFR measure variables (Tadawul Website 2005)

	Minimum	Maximum	Mean	Median	Std. dev.	Skewness	Kurtosis
Dependent variables							
TOTALSCORE	43	44	43.46	43	.50	.17	-2.03
CONTENT	27	27	27	27	.00	-	-
FORMAT	7	7	7	7	.00	-	-
AUDIT	9	10	9.47	9	.50	.11	-2.04

Note: Variables are defined in Table (2).

Univariate analysis and multicollinearity diagnostics (Tadawul Website 2005)

Table (10) shows a number of significant correlations among dependent and independent variables which provide support for some of the hypotheses. As FORMAT and CONTENT scores do not vary, correlations cannot be computed for these IFR measures. INDUSTRY, BIG-4, FRSHARE all have significant and positive correlations with both TOTALSCORE and AUDIT with the correlation coefficients for BIG-4 being particularly high. Also, SIZE has significantly positive correlations with both TOTALSCORE and AUDIT while FIXEDASSETS has significantly negative correlations with each IDB measure.

Among the independent variables, a slightly high correlation exists between FRSHARE and INDUSTRY (b=.59) while there is a moderately negative significant correlation between FIXEDASSETS and INDUSTRY (-.48). All remaining correlations are relatively low.

To further assess the potential for multicollinearity, the researcher regressed TOTALSCORE on all explanatory variables, and obtained variance inflation factors (VIF) below 2.5 and tolerance levels above 0.40 for all independent variables (see Table (1)1). Therefore, multicollinearity should not be a serious concern in the study.

In the robustness tests section of this chapter, the researcher looks at models excluding industry to see if there were any changes in relation to the hypotheses, given the fairly high correlation between the test variables INDUSTRY and FRSHARE.

Table (10). Pearson correlation coefficients (Tadawul Website 2005)

		1	2	3	4	5	6	7	8	9	10	11	12	13
1	TOTALSCORE	1												
2	CONTENT	a	a											
3	FORMAT	a	a	a										
4	AUDIT	.97	a	a	1									
5	GASHARE	-.08	a	a	-.10	1								
6	FRSHARE	.22	a	a	.21	-.16	1							
7	BIG-4	.86	a	a	.84	-.01	.26	1						
8	INDUSTRY	.40	a	a	.39	-.10	.59	.39	1					
9	LOCATION	.12	a	a	.07	.01	.19	.13	.20	1				
10	LOGSIZE	.21	a	a	.23	.43	.30	.31	.39	.16	1			
11	FIXDASSETS	-.31	a	a	-.26	.32	-.33	-.27	-.48	-.31	-.05	1		
12	LEVERAGE	.15	a	a	.14	.11	-.08	.24	-.20	.08	.27	.21	1	
13	RTA	.02	a	a	.02	-.02	-.15	.08	-.14	-.04	.07	.16	-.03	1

Notes: 1. Variables are defined in Table (2).
2. All coefficients are based on 74 observations.
3. Coefficients that are significant at p= 0.05 or better (one-tailed) are highlighted in bold.
a. Cannot be computed because Content and Format scores are constant.

Table (11). Tolerance and Variance Inflation Factors (Tadawul Website 2005)

		B	Tolerance	VIF
	(Constant)	43.20***		
1	GASHARE	-.14	.61	1.64
2	FRSHARE	-.45	.60	1.67
3	BIG-4	.86***	.68	1.46
4	INDUSTRY	.14	.42	2.38
5	LOCATION	.00	.85	1.17
6	LOGSIZE	-.01	.48	2.07
7	FIXD ASSETS	-.05	.58	1.71
8	LEVERAGE	.00	.66	1.52
9	RTA	.00	.85	1.17

Notes: 1. Dependent variable is TOTALSCORE.
2. Variables are defined in Table (2).
3. VIF = variance inflation factor.
4. *, **, and *** —Significant at p = 0.10, p = 0.05, and p = 0.01 respectively (one-tailed probabilities).

Multivariate hypothesis tests (Tadawul Website 2005)

CONTENT and FORMAT dependent variables were not computed since all scores were the same. Table (1)2 presents the outcomes of two regression models for TOTALSCORE and AUDIT. These models were also used to test the disclosure index hypotheses. No heteroscedasticity is detected in any of these OLS regression models using White's test. BIG-4 is positively and highly significantly associated with both the IFR measures TOTALSCORE and AUDIT. The coefficients for GASHARE, FSHARE, INDUSTRY, LOCATION, SIZE, LEVERAGE, and RTA are insignificant.

Table (12). Regression results for 74 companies (Tadawul Website 2005)

Ordinary least squares regressions				
	TOTALSCORE	CONTENT	FORMAT	AUDIT
Constant	43.20***			9.06***
GASHARE	-.14			-.31
FRSHARE	-.45			-.53
BIG-4	.86***			.85***
INDUSTRY	.14			.14
LOCATION	.00			-.04
SIZE	-.01			.02
FIXD ASSETS	-.05			.08
LEVERAGE	.00			.00
RTA	.00			-.01
Model summary				
Adjusted R- squared	.74			.69
F- ratio	23.95***			19.29***

Notes:
1. Variables are defined in Table (2).
2. * , ** ,and *** —Significant at p= 0.10, p= 0.05, and p= 0.01 respectively (one-tailed probabilities for explanatory variables and two-tailed probabilities for constants, model summary and diagnostics).
3. Heteroscedasticity Test Passed (no heteroscedasticity is detected using White's test).

Tadawul Website 2004-2005 combined model

In this section, the researcher combines the two years of data for the Tadawul Website in one model using GEE (Generalised Estimable Equations). Since there was a difference over the two years in the dependent variables, the results of individual regressions from each year are given and then the two years are combined using GEE in SPSS 15 Statistical software. GEE is used as there are repeated measurements for each company, that is, two years. As the observations are not independent, a pooled OLS regression is not used.

The results of this model are shown in Table (1)3.

From Table (1)3, first focusing on the test variables; BIG-4 and INDUSTRY coefficients are positive and significant for all IFR measures apart from FORMAT. In addition, the coefficient for LOCATION is positive and significant for all IFR measures apart from AUDIT. Contrary to the expectations of H2, FRSHARE has a significantly negative coefficient in the AUDIT model and has negative coefficients in the TOTALSCORE and CONTENT models, but they are insignificant. GASHARE is insignificant in all four models.

Among the control variables, the coefficient of RTA is positive and significant in the TOTALSCORE and CONTENT models while FIXEDASSETS has a significant and positive association in the CONTENT model. SIZE and LEVERAGE are insignificant in all four IFR models. YEAR is significantly and positively associated in all four IFR models.

Table (13). Regression coefficients from GEE models for Tadawul Website (years 2004 and 2005 combined)

	TOTALSCORE	CONTENT	FORMAT	AUDIT
Constant	21.72***	19.45***	.83**	1.27***
GASHARE	.13	-.10	.01	-.08
FRSHARE	-3.46	-2.96	.25	-.68*
BIG-4	1.81***	.65*	.15	.85***
INDUSTRY	2.15**	2.00**	.02	.35***
LOCATION	1.24**	.94**	.28**	-.04
SIZE	-.21	-.21	.05	-.04
FIXD ASSETS	1.65	1.72*	.07	.05
LEVERAGE	.00	.00	.00	.00
RTA	.03*	.04**	.00	.00
YEAR	20.25***	6.80***	5.48***	8.04***

Notes:
1. Variables are defined in Table (2).
2. * , ** ,and *** — Significant at p= 0.10, p= 0.05, and p= 0.01 respectively (one-tailed probabilities for explanatory variables and two-tailed probabilities for constant).

As shown above there were some useful statistical analysis, i.e. descriptive statistics for IFR measure variables (Tadawul Website 2005), univariate analysis and multicollinearity diagnostics (Tadawul Website 2005), Pearson correlation coefficients (Tadawul Website 2005), and tolerance and Variance Inflation Factors (Tadawul Website 2005). Also, multivariate hypothesis tests (Tadawul Website 2005) was also shown by using regression results for 74 companies (Tadawul Website 2005). Moreover, a combining model of the two years (2004-2005) of data for the Tadawul Website in one model using GEE (Generalised Estimable Equations) was used and regression coefficients from GEE models for Tadawul Website (years 2004 and 2005 combined) was adopted and results of this model are shown in Table (1)3 above.

Relating results to hypotheses

H1 states that the extent of IFR is negatively associated with the proportion of government ownership. Results show that two coefficients for GASHARE are positive and two are negative without significance in 2004. In contrast, in 2005, the two coefficients for GASHARE are negative without significance. Tadawul Website and a combination of both are all insignificant with only one exception. The exception is that GASHARE has a positive and significant association with audit-related IFR. This association might arise from the control of SOCPA as government regulator on the audit firms in Saudi Arabia. So we can say that H1 (GASHARE) is not supported in either year 2004 or in 2005.

H2 proposes that the extent of IFR is positively associated with the proportion of foreign ownership. In the combined analysis for the two years, 2004 and 2005, three out of four coefficients for FRSHARE were negative and in the AUDIT model, the coefficient was negative and significant.

H2 is not supported in relation to the Saudi background for two reasons: first, the average foreign ownership in the Saudi stock market is too small (4%). This small percentage does not help to push the SLCs' tendencies to adopt IFR. This is so even though it is difficult for non-Arabic investors to deal with the Arabic language.

The implication of the fact that H2 is unsupported is that policy makers should work to facilitate, encourage, and increase foreign investment. This would depend on ensuring that all financial information published online could be easily and completely comprehensible. Such clarity would be helped by the addition of certain rules prior to the publication of financial information online. For example, regulators could introduce a rule that SLCs and Tadawul should, as far as possible, work on translating all financial information bilingually (Arabic and English), or at least the main information that could affect foreign investment decisions. However, regulators and reporting companies should also take into account the cost of publishing and maintaining translated financial information. Furthermore, the non-support case of the hypothesis carries implications for foreign users. Since they are interested in the Saudi stock market, they should take more care to obtain a complete picture of Saudi culture, including learning Arabic. This would help them to understand the trends of the Saudi exchange market and make appropriate investment decisions.

H3 contends that IFR is greater among Saudi companies audited by BIG-4 international audit firms; the coefficients for BIG-4 are positive and significant for both years of Tadawul Website in most models, the only exception being the FORMAT model on the Tadawul Website (years 2004 and 2005 combined).

Consistent with Xiao, et. al. (2004), the study's test variable (BIG-4), H3 is completely connected with IFR. Xiao, et. al. (2004) show that the presentation format of IFR is associated with the employment of a BIG-five[1] audit firm.

In the Saudi context, this hypothesis is supported: some previous studies have indicated a positive link between firms employing larger auditors and their level of disclosure (e.g., Craswell and Taylor, 1992). Xiao, et. al. (2004) and Inchausti (1997), in particular, shows a positive association between employment of larger auditors and the level of disclosure online. In contrast to smaller Saudi auditors, large auditors, especially BIG-4 international audit firms, are more likely to facilitate the transmission of innovative practices, as well as IFR. Firstly, these auditors' reputation provides safety against the improbability and failure of control from disclosure via the Internet. Secondly, they can both serve as role models and provide implementation assistance. In addition, perhaps H3 was supported in this study because CMA might request that SLCs are audited by one of the BIG-4 audit firms to pay more attention to online annual reports and other financial information, along with a hard copy version.

H4 contends that IFR is greater among Saudi companies in the banking industry than in other industries. The coefficients for INDUSTRY are positive and mostly significant at high levels, so the expectation for INDUSTRY is completely

---

1 The BIG-4 with the addition of Arthur Anderson audit firm.

supported, the only exception being the FORMAT model on the Tadawul Website (years 2004 and 2005 combined). Therefore, the results imply that companies in the banking industry disclose more information, and have more extensive and elaborate presentation formats than do other companies.

As a point of reference for the industry test variable H4, while this study shows that the presentation format of IFR is associated with companies in the banking industry, Xiao, et. al. (2004) demonstrate that the presentation format of IFR is associated with the employment of the IT industry.

Saudi banks are relatively more advanced in using their Websites as tools of communication with their customers and investors because Saudi banks want to have a complete satisfaction of their customers and investors. In addition, Saudi banks are supervised and controlled by two parties, the SAMA and the Saudi CMA; they tend to have more accurate and advanced financial reporting systems (SAMA, 2005). Moreover, banking in Saudi Arabia is one of the most important industries, due to its leading role in commercial and financial activities. In addition, banks have a unique and advanced system, called the Internet banking system that relates them with their customers online. This allows customers to deal with their accounts and business easily, quickly and securely (SAMA, 2003).

Since the banking sector is one of the most important sectors, policy makers in Saudi Arabia must focus on protecting their system security from Internet hacking or changing important information either on the Tadawul Website or on the SLCs' own Website. However, users would feel more comfortable knowing that this sector is supervised by two government entities. As a result, this dual supervision would encourage more financial information users and more investors to invest in the banking sector, since companies in the sector deal better with IFR and provide more financial information online. In addition, auditors would have to audit carefully for these companies for two reasons. First, the Internet banking system, mentioned above, that relates banks with their customers online, allows more users, beside the investors, to gain access to their Website, although it also exposes them to the risks of hacking and spying. Second, it is the only industry that is supervised by both Saudi SAMA and the Saudi CMA.

H5, the hypothesised effects of location on companies in the three Saudi main cities indicated that, in 2004, three out of four coefficients for LOCATION were significant, the coefficient for the AUDIT model being insignificant, and this is consistent when the two years are combined in one model for the Tadawul Website.

Taking into account the coefficients for the Tadawul Website in 2004 and in the combined analyses, results suggest that companies in the main cities, Riyadh (the capital), Jeddah, and Dammam, relatively disclose more information than do companies in other Saudi cities. Signalling theory, agency theory, and cost benefit analysis theory, all agree that there could be a positive association between location and the Internet disclosure.

This hypothesis was formulated and tested because, as indicated earlier, in Saudi Arabia more than three-quarters of its listed companies are in the main cities. Statistically, 56 (76%) of SLCs are located in three main cities, namely, Riyadh,

Jeddah, and Dammam (CMA, 2005). In addition, in small Saudi cities, Internet use is limited, since the Internet might not be available all the time; as a result, companies in small cities would be more interested in using printed rather than Internet disclosure. According to Al-Htaybat and Napier (2005), if Internet usage is relatively limited in a particular location, then we would expect companies to be comparatively slow to use the Internet to supplement printed disclosure.

Regulators should look at the amount of Internet disclosure made by SLCs in all Saudi cities, the three main Saudi cities and others. In addition, they should encourage companies with less Internet disclosure to increase this as much as possible, which would help users to care not only about those located in Riyadh, Jeddah and Dammam, but also in other cities. Furthermore, regulators should be aware of the poor Internet services in those areas not located in the three major cities, and then help improve Internet services there. This would allow users, investors and auditors in those areas to use the Internet with the same quality as in the major cities.

Auditors in particular should not differentiate between audit work in the main cities and that in others, even if there is more IFR in the three Saudi main cities. Such discriminative action would result in audit firms being centralised only in Riyadh, Jeddah or Dammam.

Table (14). Hypothesis summary

Hypotheses	2004	2005	combined
H1	not support	not support	not support
H2	not support	not support	not support
H3	support	support	support
H4	support	support	support
H5	support	support	support

Robustness tests

A number of implicit assumptions and design choices were made in this analysis. Therefore, three tests were performed to assess the robustness of the results.

New and conventional auditing items

In the analysis of section 7.3, the total number of auditing items consisted of 25 items which included 5 new auditing items introduced by the researcher compared to previous studies. Regression analyses for auditing were carried out consisting of a total for the conventional auditing items used in previous studies and excluding the 5 new auditing items. The results were consistent with those of section 7.3 with the exception that in the Tadawul 2004 model, industry (INDUSTRY) was no longer significant in the model excluding the new auditing items. Therefore, interesting findings after adding up these five new audit items indicate that those

conventional auditing items made the coefficients significant in the first model of Tadawul Website (in 2004).

Correlation between industry and foreign share

Although multicollinearity did not appear to be a major factor in the study, there was a moderately high correlation between industry (INDUSTRY) and foreign share (FRSHARE) and the researcher looked at this further. The researcher reran models where INDUSTRY was excluded and found that, for the companies' own Websites, the coefficient of FRSHARE changed depending on whether or not INDUSTRY was present.

The exclusion of INDUSTRY in the Tadawul Website models only had an impact on the AUDIT model in 2004. In this instance, the coefficient for FRSHARE was negative and significant initially but became insignificant, although still negative when INDUSTRY was excluded.

Summary and conclusions

Results based on data relating to the 74 SLCs derived from the Tadawul Website support the expectation that IFR by SLCs is affected by certain systematic influences. An examination of all companies listed in the Saudi Stock Market in 2004 and 2005 from the Tadawul Website revealed evidence of differences in how companies used the Internet for publishing financial statements online. Significant development in this regard was also evident over the course of one year, from the end of 2004 to the end of 2005. Following a survey of the Tadawul homepage over the two years, 2004 and 2005, to assess the level of IFR use by all 74 SLCs in Saudi Arabia, it was apparent that apart from the employment of BIG-4 auditors, a significant role was played by industry and location in the implementation of IFR. Furthermore, the contribution of government and foreign ownerships to IFR adoption was found to be insignificant in both years. Coefficients for BIG-4 are positive and significant for both years of Tadawul Website in most models, the only exception being the FORMAT model on the Tadawul Website (years 2004 and 2005 combined). Companies in the banking INDUSTRY, disclose more information, and have more extensive and elaborate presentation formats than do other companies. Companies in the three Saudi main cities indicated that, in 2004, three out of four coefficients for LOCATION were significant, the coefficient for the AUDIT model being insignificant, and this is consistent when the two years are combined in one model for the Tadawul Website.

The principal implications of this paper's findings, both for future research and policy-making by companies, users and reporting companies, are that the full potential of Internet financial disclosure by Saudi companies has yet to be made. An interesting aspect of future research would be a comparison between the findings from the same companies on the Tadawul Website and the Websites of those companies during the same period (from 2004-2005) or with other periods of time after 2005 to explore changes in practice. Similarly, it would be interesting to

compare findings from the Websites of those companies with other disclosing sources, e.g. the Saudi Central Website. Moreover, a comparison of the findings with those obtained from similar economies, beside Saudi Arabia, would also be of interest. This paper clearly indicates the need and importance of implementing IFR, at the level required by the Saudi context, for the Saudi CMA and SLCs, as well as the users of financial statements and policy making.

References

Aerts, W., Cormier. D., Gordon, I., and Magnan M., (2006). Performance disclosure on the web: an exploration of the impact of managers' perceptions of stakeholder concerns. The International Journal of Digital Accounting Research, 6(12), 159-194.

Al-Htaybat, K. A., and Napier, C., (2005). Online Corporate Financial Reporting In Developing Countries: The Case Of Jordan. BAA's Annual Conference, Southampton, University of Southampton, UK.

Allam, A., and Lymer A., (2003). Developments in Internet Financial Reporting: Review and Analysis Across Five Developed Countries. The International Journal of Digital Accounting Research, 3(6), 165-199.

Ashbaugh, H., Johnstone, K. and Warfield, T., (1999). Corporate Reporting on the Internet. Accounting Horizons, 13(3), 241-258.

Azwadi, A., Hafiza, H., and Zalailah, S., (2005). Internet Financial Reporting by Leading Public Listed Companies in Malaysia. Kuala Terengganu, University College of Scince and Technology Malaysia.

Barac, K., (2003). Internet Reporting in South Africa. the Financial Reporting and Business Communication Research Unit Sixth Annual Conference. Cardiff, UK.

Bonson, E. and Escobar, T., (2002). A Survey on voluntary Disclosure on the Internet: Empirical Evidence from 300 European Union Companies. The International Journal of Digital Accounting Research, 2(1), 27-51.

CMA, (2005). Capital Market System, Riyadh, Saudi Arabia.

Cohen, W. M., and Levinthal, D. A., (1990). Absorptive capacity: A new perspective on learning and innovation. Administrative Science Quarterly, 35(1), 128–152.

Cook, J., (1999). Information and Communication Technology: The Internet and Company Law. Cambridge, ESRC centre for Business Research, University of Cambridge, UK.

Cooke, T. E. (1998). Regression analysis in accounting disclosure studies. Accounting and Business Research, 28(3), 209–224.

Craswell, A., and Taylor, S. L., (1992). Discretionary disclosure of reserves by oil and gas companies: An economics analysis. Journal of Business, Finance, and Accounting, 19(2), 295–309.

Craven, B. M., and Marston, C. L., (1999). Financial reporting on the Internet by leading UK companies. European Accounting Review, 8(2), 321–333.

Datar, S., Feltham, G., and Hughes, J. (1991). The role of auditor and audit quality in valuing new issues. Journal of Accounting and Economics, 14, 3–49.

Deangelo, L., (1981). Auditor size and audit quality. Journal of Accounting and Economics, 3(3), 183-199.

Debreceny, R., and Gray, G., (1999). Financial reporting on the Internet and the external audit. European Accounting Review, 8(2), 335-350.

Debreceny, R., Gray, G., and Mock, T., (2001). Financial Reporting Web Sites: What users Want in Terms of Form and Content. The international Journal of Digital Accounting Research, 1(1), 1-23.

Debreceny R., Gray G. L., and Rahman, A., (2002). The determinants of Internet financial reporting. Journal of Accounting and Public Policy, 21(4-5), 371-394.

Defond, M. L., Wong, T. J., and Li, S., (1999). The impact of improved auditor independence on audit market concentration in China. Journal of Accounting and Economics, 28(3), 269–305.

Deller, D., Stubenrath, M., and Weber, C., (1999). A survey on the use of the Internet for investor relations in the USA, UK and Germany. European Accounting Review, 8(2), 351–364.

Ettredge, M., Richardson, V. J. and Scolz, S., (2001). The presentation of financial information at corporate Web sites. International Journal of Accounting Information Systems, 2(1), 149–168.

Ettredge, M., Richardson, V. J. and Scolz, S., (2002). Dissemination of information for investors at corporate Web sites. Journal of Accounting and Public Policy, 21(4), 357–369.

FASB (2000). Electronic Distribution of Business Reporting Information. Connecticut. Financial Accounting Standards Board, USA

Ferguson, M. J., Lam, K. C. K. and Lee, G. M., (2002). Voluntary disclosure by state-owned enterprises listed on the stock exchange of Hong Kong. Journal of International Financial Management and Accounting, 13(2), 125–152.

Fisher, R., F. Laswad And Oyelere, P., (2000). Financial Reporting on the Internet. Chartered Accountants' Journal, 79(3) 68-72.

Gowthorpe, C., (2004). Asymmetrical dialogue? Corporate financial reporting via the Internet. Corporate Communications: An International Journal, 9(4), 283-293.

Fisher R., Oyelere, P. and Laswad, F., (2004). Corporate reporting on the Internet: Audit issues and content analysis of practices. Managerial Auditing Journal, 19(3), 412-439.

Healy, P. M. and Palepu, K. G., (2001). Information asymmetry, corporate disclosure, and the capital market: A review of the empirical disclosure literature. Journal of Accounting and Economics, 31(1-3), 405–440.

Inchausti, B. G., (1997). The influence of company characteristics and accounting regulation on Information disclosed by Spanish firms. European Accounting Review, 6(1), 45–68.

Joshi, P., and Al-Modhahk, J., (2003). Financial reporting on the Internet: Empirical evidence from Bahrain and Kuwait. The Financial Reporting and Business Communication Conference. Cardiff Business School, Cardiff, UK.

Lee, J., (1987). Accounting infrastructure and economic development. Journal of Accounting and Public Policy, 6(2), 75–85.

Lybaert, N., (2002). On-Line Financial Reporting. An Analysis of the Dutch Listed Firms. The International Journal of Digital Accounting Research, 2(4) 195-234.

Lymer, A., (1999). The Internet and the future of corporate reporting in Europe. The European Accounting Review, 8(2), 289-301.

Lymer, A. and Debreceny, R., (1999). Business Reporting On the Internet. A Report prepared for the International Accounting Standards Committee (IASC).

Malone, D., Fries, C. and Jones, T., (1993). An Empirical Investigation of the Extent of Corporate Financial Disclosure in the Oil and Gas Industry. Journal of Accounting, Auditing and Finance, 8(3), 249-273.

Marston, C. and Polei, A., (2004). Corporate reporting on the Internet by German companies. International Journal of Accounting Information Systems, 5(3), 285-311.

Nasir, N., Said, J., Ghani, E., Hashim, A, and Othman, R., (2003). Enhancing Corporate Governance of Malaysian Local Authorities through Internet Financial Reporting. the 4th International Conference for the British Accounting Association Special Interest Group in Corporate Governance. Liverpool, UK.

Olivier, H. (2004). Business and Management, Accounting and IT and Innovation. European Accounting Review, 9(4), 603-624.

Pirchegger, B. and Wagenhofer, A., (1999). Financial reporting on the Internet: A survey of the homepages of Austrian companies. European Accounting Review, 8(2), 383–395.

SAMA (2003). the thirty-ninth annual report, SAMA. Riyadh, Saudi Arabia.

SAMA (2005). The forty one annual report, SAMA. Riyadh, Saudi Arabia.

Saudagaran S. M. and Diga J. G., (1997). Financial reporting in emerging capital markets: Characteristics and policy issues. Accounting Horizons, 11(2), 41-64.

Smith, B. and Pierce A., (2005). An Investigation of the Integrity of Internet Financial Reporting. The International Journal of Digital Accounting Research, 5(9), 47-78.

Spaul, B., (1998). Corporate Dialogue in the Digital Age. Institute of Chartered Accountants in England and Wales. London, UK.

Tapscott, D., (1996). The Digital Economy: Promise and Peril in the Age of Networked Intelligence, McGraw-Hill Education, USA.

Trites, G., (1999). The Impact of Technology on Financial and Business Reporting. Canadian Institute of Chartered Accountants. Canada.

Verrecchia, R., (2001). Essays on disclosure. Journal of Accounting and Economics, 32(1), 97–180.

Wang, J. W., (2003). Governance role of different types of state-share holders: Evidence from China's listed companies. PhD Thesis, Hong Kong University of Science and Technology. Hong Kong.

Wai Kin, C., Nilmini, W., (2006). Using the internet for financial disclosures: the Australian experience. International Journal of Electronic Finance, 1(1), 118-150.

Wolfe, R. A., (1994). Organisational innovation: Review, critique and suggested research directions. Journal of Management Studies, 31(3), 405–431.

Xiao. J., Jones, M. and Lymer A., (2005). A Conceptual Framework for Investigating the Impact of the Internet on Corporate Financial Reporting. The International Journal of Digital Accounting Research, 5(10), 131-169.

Xiao, J., Yang, H. and Chow, C., (2004). The determinants and characteristics of voluntary Internet-based disclosures by listed Chinese companies. Journal of Accounting and Public Policy, 23(3), 191-225.

Xiao, J. Z., Jones, M. J. and Lymer, A., (2002). Immediate trends in Internet reporting. European Accounting Review, 11(2), 245–275.

Xu, X. and Wang, Y., (1999). Ownership structure and corporate performance in Chinese stock companies. Chinese Economic Review 10(1), 75–98.

التقارير المالية على الإنترنت بواسطة الشركات المساهمة السعودية في موقع تداول
(بين ٢٠٠٤ – ٢٠٠٥م)

نزار صالح علي الشويمان

أستاذ مساعد, قسم المحاسبة، كلية الاقتصاد والإدارة, جامعة القصيم،المملكة العربية السعودية

ملخص البحث. تستخدم هذه الدراسة قائمة لفحص التقارير المالية بالانترنت، ومدى تطبيق ذلك في الشركات المساهمة في المملكة العربية السعودية؛ كسوق مـالي نامٍ بين أسواق مالية ناشئة يستخدم الانترنت للإفصاح المالي. تأخذ الدراسة بالاعتبار عوامل مؤثرة في الإفصاح, فحسب البيانات المستجمعة من موقع تداول على الانترنت لجميع الشركات المساهمة السعودية بين عامي ٢٠٠٤ و ٢٠٠٥، تبين أن جميع الشركات المساهمة السعودية. وكانت آنذاك ٧٤ شركة مساهمة فقط. لديها موقع بوصلة نشطة مباشرة من موقع تداول. في هـذه الدراسة. وزيادة على التحليل الإحصائي الوصفي تم اختبار فرضياتها لتحديد عناصر ومحددات الإفصاح المالي بالانترنت. وجدت الدراسة أن هيئة سوق المال هي العامل المؤثر في إلزام وتفعيل التقارير المالية بالانترنت في المملكة العربية السعودية حيث تتطلب الهيئة حداً أدنى من تطبيق التقارير المالية للشركات على الانترنت. إضافةً إلى أن الشركات المطبقة للإفصاح المالي بالانترنت هي من تلك الشركات التي تستخدم في مراجعة قوائمها المالية شركات مراجعة من الشركات الأربع الكبار، أوضحت النتائج أن الشركات المالية (قطاع البنوك) وكذلك الشركات في المدن السعودية الرئيسة عاملان أساسيان في تطبيق التقرير المالي في الانترنت كذلك، ولكلا السنتين أوضحت الدراسة أن التملك الجزئي للشركات من قبل الحكومة أو من قبل الشركات الأجنبية لا يمثلان عوامل أساسية، ولم تعط دلالة إحصائية في تبني الشركة للتقرير المالي بالانترنت من عدمه. تشير هـذه النتائج إجمالا ولهذه الفترة – بين عامي ٢٠٠٤ و ٢٠٠٥ – إلى أن استخدام الانترنت للإفصاح المالي الكامل بواسطة الشركات السعودية لم يحن بعد.

الكلمات المفتاحية: تداول, هيئة سوق المال، التقارير المالية بالانترنت، الإفصاح المالي بالانترنت، الشركات المساهمة السعودية..