The value relevance of corporate internet reporting: The case of Egypt

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ABSTRACT

This paper examines the value relevance of Corporate Internet Reporting (CIR) provided by Egyptian non-financial listed companies. It investigates the association between the level of CIR and companies' market values. The findings indicate that CIR information was value relevant over the period of investigation. In addition, an analysis of the sub-components of CIR reveals that the details varied. Specifically, while both the content and user support categories were statistically associated with firms' market value, this was not the case for the presentation category. Overall, the results indicate that investors value CIR-related information when making their equity pricing decisions. The results have implications for both national and international regulators about the relevance of CIR information in developing countries such as Egypt.

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1. Introduction

This paper examines the value relevance of Corporate Internet Reporting (CIR) provided by Egyptian listed companies.[1] In particular, it investigates the relationship between the level of a firm's CIR and its market value; it examines the usefulness of CIR by investigating whether market participants (investors) value this information when making equity pricing decisions. The approach assumes that accounting information is value relevant (decision useful) if it is capable of making a difference to an investor's decision and its publication is associated with a significant share price change (Barth, Beaver, & Landsman, 2001).

The rapidly changing nature of the global business environment has meant that traditional paper-based annual reports have serious limitations and are becoming increasingly less timely, especially with the increase in geographic investor dispersion; they have thus become less useful for decision-making purposes (Ashbaugh, Johnstone, & Warfield, 1999; Debreceny, Gray, & Rahman, 2002). In this context, Ahmed (2013) suggested that in comparison with hard copy reports, online disclosures have the ability to reach a wider proportion of geographically dispersed users with greater volumes of customizable information incorporating dynamic audio and visual communication.

The change towards a web-based reporting paradigm has been made feasible by a pronounced increase in the number of internet users over the past few years. Consistent with this trend, Hindi and Rich (2010) concluded that the internet has become one of investors' most frequently used sources of information; indeed, as the supply of web-based investor relations information has risen, corporate users' demand for CIR has also increased (Debreceny, Gray, & Mock, 2001).

All in all, taking into account the potential of the internet as a reporting medium, CIR practices have the ability "to enhance the qualitative characteristics of disclosure" (Debreceny et al., 2002, p. 376), thereby enhancing the usefulness of that disclosure. Bonsón and Escobar (2006, (p. 304).) acknowledged this possibility explicitly by indicating that: the application of these new technologies to the corporate reporting systems allows companies to have access to many more potential users, to personalize (sic.) the information provided taking into account different profiles, to facilitate its understanding for those users who may not be trained to interpret accounting information, to increase its quantity and quality (comparability, relevance, completeness, clarity, etc.).

Greater demand for web-based financial reporting has led to an increase in the number of market participants, which might itself lead to greater market efficiency (Larrán & Giner, 2002). Furthermore, the ability of companies to provide more timely information has been enhanced, as distribution of information via websites can take place as soon as it is produced, further enhancing pricing efficiency (Larrán & Giner, 2002). The borderless nature of CIR practices also has the potential to "help listed companies to attract new shareholders, thus enabling companies to maintain a healthy demand for shares" (Craven & Marston, 1999, p. 324). Similarly, CIR practices might have an impact on the firms' market value and the cost of capital, as relevant information about companies seeking international finance will be more accessible to global investors, reducing investment risk (Debreceny et al., 2002).

In terms of the pervasiveness of CIR, Debreceny et al. (2002) stated that: "internet disclosure is of importance to securities regulators, accounting standards setters, investors and to the broader accounting community" (p. 373). In keeping with this argument, the main purpose

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[1] A number of terms are used to describe Corporate Internet Reporting such as Internet Financial Reporting (IFR), online reporting and digital reporting. All of these terms essentially refer to the process by which companies and other organisations make financial information available via the internet.

of this paper is to investigate the value relevance of CIR provided by Egyptian non-financial listed companies. Specifically, this investigation provides insight about whether investors value such information when making investment decisions.

The hypotheses investigated in this paper are based on framework encompassing aspects of efficient market theory, decision usefulness theory and signaling theory. If the market is efficient as defined by Fama (1970) and accounting information is useful as explained by the IASB (2010), then in equilibrium, at any time, any information published to the market will be reflected in stock prices. That is, the market will react to the informed information available on the market such as the disclosure of financial information via the internet. Therefore, even though disclosing corporate information via the internet is still voluntary and unregulated in Egypt, it predicts that the market will continue to react to this information if it considers it helpful.

2. Institutional background on Egypt.

The Egyptian Exchange (EGX) is one of the oldest in the world and the first to be established in the Middle East. Its history dates back to the 19th century, and the 1883 establishment of Alexandria Stock Exchange, quickly followed by the Cairo Stock Exchange in 1903. The stock exchange has two locations; the main branch is in Cairo while the other is located in Alexandria. Both branches are directed by the same chairman and board of directors and are now electronically linked in order to facilitate real-time trading (Abdelsalam, 1999). The EGX has experienced several structural developments since its inauguration and the development of the Egyptian capital market can be linked to the economic policies adopted in the country. One of the major dimensions of the reforms launched in the 1990s was the reactivation of the capital market through the issuance of Capital Market Law (CML) No. 95 in 1992 (Azab, 2002). Consequently, market capitalization grew exponentially from L.E.5 billion in 1990 to L.E.112 billion in 1999 and the number of listed companies increased from 627 in 1991 to 1033 in 2000 (EGX, 2009).[2] In 2002, the EGX was the second largest in absolute terms in the Middle East and North African regions, after Saudi Arabia, with a market capitalization of L.E.122 billion.

The Capital Market Authority (CMA) is a public authority having a judicial status under the supervision of the Ministry of Investment.[3] According to the CML 95/1992, the CMA is responsible for the implementation of this law and its executive regulations. In July 2002, the CMA approved new listing rules which came into effect from August 1, 2002. These rules aimed at increasing disclosure and corporate governance requirements for listed companies (The World Bank, 2004).[4] As a result of the strict enforcement of the listing and disclosure rules by the EGX, the number of listed companies decreased dramatically to 214 companies in 2014 compared with 1151 in 2002. Despite the decrease in the number of listed companies, market capitalization grew steadily reaching L.E.768 billion in 2007, but then decreased dramatically to L.E.474 billion in 2008 following the global financial crisis and the sharp decline in stock prices (EGX, 2008). Furthermore, the 2011 uprising had a disastrous impact on the EGX; the interruption to commercial activities and general civil unrest led to a prolonged closure of the EGX, from 30/1/2011 to 23/3/2011 (EGX, 2012). By the end of 2011, the market had lost L.E.194 billion of its market capitalization, as can be seen from Table 1; in January 2011 alone the market lost 21% of its value (EGX, 2012). In this context and in an attempt by the EFSA and the

Table 1
Key indicators for the Egyptian Exchange.
Source: The Egyptian Exchange.

Year	Number of listed companies	Number of traded companies	Market capitalization (in L.E. billion)	Market cap as % of GDP
2001	1110	643	112	31
2002	1151	641	122	32
2003	978	540	172	35
2004	795	503	234	43
2005	744	441	456	74
2006	595	407	534	72
2007	435	337	768	86
2008	373	322	474	46
2009	306	289	500	48
2010	212	211	488	40
2011	213	204	294	21
2012	213	204	376	24
2013	212	206	427	24
2014	214	206	500	25

EGX to encourage listed companies to set up a website and deliver corporate information online, the EFSA issued Decision No. 15 in 2012 which states that companies listed on the EGX should launch a website in order to publish its annual and periodical financial statements with the explanatory notes as well as the auditors' reports and other data and information required by the EGX. According to this decision all listed companies are required to set up a website and engage in CIR practices since March 2013 (EFSA, 2012).

3. Literature review

In recent years the financial reporting literature is replete with studies investigating CIR practices. The aim of this section is to provide an overview of these studies. The first strand of CIR literature included studies that explored the extent of CIR practice in specific countries; most of these early studies were largely descriptive and focused in particular on the information providers' practices and concerns (the supply-side) (e.g. Louwers et al., 1996; Petravick & Gillett, 1996; Ashbaugh et al., 1999; Petravick, 1999; FASB, 2000; Ettredge, Richardson, & Scholz, 2001; Ettredge, Richardson, & Scholz, 2002; Davis, Clements, & Keuer, 2003; Kelton and Yang, 2008; and Hindi & Rich, 2010). In general terms, much of this early work pointed to a growing adoption of the internet as a reporting medium especially in countries with developed capital markets; on the whole practices were less advanced in developing countries.

The second strand included studies that attempted to garner the views of interested parties with respect to CIR practices (the demand-side). In this regard, only a handful of researchers extended the analysis to go beyond the descriptive dimension of CIR practices. These studies sought to explore the views of interested parties regarding CIR practices by focusing more on information-users' concerns.[5] These studies included: Beattie and Pratt (2003); Gowthorpe (2004); Al-Htaybat et al. (2011); AbuGhazaleh et al. (2012); Dunne et al. (2013). In summary, these studies have indicated that respondents value the features of CIR practices and describe these reporting practices as being useful; however, in the vast majority of instances participants view the traditional paper-based annual report as the preferred source of information. Key elements of the financial statements (such as the Statement of Financial Position and the Income Statement) are the most requested elements of the information disseminated online. Participants have also indicated that the potential of enhanced and more symmetrical communication, via CIR practices, is not being exploited as typically the supplier of corporate information takes the dominant role in determining the extent of information to be made available online.

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[2] At the end of January 2015, the Egyptian Pound (L.E.) equalled about 0.1316 US dollars and about 0.085 Pounds Sterling (CBE, 2015).

[3] According to Law No. 10 of 2009, the CMA was replaced by the Egyptian Financial Supervisory Authority (EFSA).

[4] In terms of corporate governance issues, the rules require listed companies to have an audit committee, with the objective of strengthening corporate governance and enhancing financial reporting practices (ROS). The most important development was seen to be the introduction of administrative penalties against non-compliant issuers (World Bank, 2002).

[5] Although some of these studies expanded their analyses to explore perceptions of the next generation of internet reporting, namely XBRL (see for example, Dunn).

The third strand of the literature includes studies that have investigated the link between the adoption of the internet as a disclosure channel and some market-based variables such as the cost of capital and share prices. These studies include Hunter and Smith (2009) who sought to investigate the economic consequences of online reporting using data from five emerging stock markets: Brazil, India, Indonesia, Russia, and South Africa. The study formulated two research hypotheses: (i) the market performance of securities listed on emerging stock exchanges is higher in the post-event period following the commercialization of the internet and (ii) the market responds positively to firms that announce the launching of a website.[6] The sampling period used to test the first hypothesis was from 1991 to 1997. The researchers used monthly returns to measure the market performance in the pre-internet and post-internet periods. In addition, the second hypothesis was tested between 1998 and 2001. The results showed that the two hypotheses were supported with respect to India, Indonesia, and South Africa, while no evidence was found for Brazil and Russia.

The association between engagement in CIR practices and stock prices was also investigated in a study by Lai, Lin, Li, and Wu (2010). The study used data from 522 companies listed on the Taiwan Stock Exchange (as of March 29, 2002). The results showed that 490 (85.66%) of the sampled companies had websites and 206 (39.5%) of them engaged in online reporting practices. The results revealed that share prices of companies with online reporting responded more quickly compared with companies without online reporting. In addition, the results suggested that companies that disclosed more information online could expect their stock prices to respond faster than those with lower levels of online reporting. Furthermore, the findings indicated that companies engaging in online reporting have the potential to yield higher cumulative abnormal returns. The findings also showed that the degree and scope of online reporting had a significant impact on the stock's abnormal return. In a similar study, Rahman (2010) examined the impact of online reporting practices on stock prices of the Kompas 100 companies listed on the Indonesia Stock Exchange (IDX).[7] The study formulated three research hypotheses to test that impact; the results showed that 75% of the sampled companies had a web presence and 25% of them engaged in online reporting practices. Further analysis was based on the 25 companies with accessible websites and provided corporate information online. The results supported the first hypothesis that there was a positive association between the extent of CIR practices of the sampled companies and the abnormal returns. In addition, the findings showed that there was no significant difference between the abnormal return of companies with online reporting and those without.

In summary, CIR practices were found to have a positive impact on securities listed on some emerging capital markets, with the markets responding positively to the announcement of setting up a web presence. In addition, share prices of companies engaged in CIR activities responded more quickly and these companies had the potential to yield higher abnormal returns. It was also reported that the extent of CIR had a significant impact on stock's abnormal returns. However, the results reported by Lai et al. (2010) may not apply to companies listed on the EGX, as CIR practices in Taiwan is very comparable with their counterparts in the US, while CIR amongst Egyptian companies is still at an early stage. Furthermore, the broader secrecy culture is embedded in the Egyptian society, making the EGX not informationally efficient which is not the case for the Taiwan Securities Exchange.

The current paper contributes to the third strand of the literature by examining the association between CIR and firm market value for the emerging economy of Egypt. All CIR studies undertaken in Egypt to date have been descriptive in nature focusing largely on the supply-side via questionnaire surveys (e.g. Aly, Simon, & Hussainey, 2010; Ezat & El-Masry, 2008); no studies have sought to explore the economic consequences of CIR practices. Thus, the present study addresses a specific gap in the literature by examining the association between CIR and firm value; to the best of our knowledge, this is the first study to investigate the association between CIR and firm value. This matters in an Egyptian setting as the nation's economy is the largest amongst the emerging 'Arab Spring' countries and the demand for information of a timely and easily accessible nature is likely to be important. Moreover, private investors in Egypt are often prone to naivety, not fully understanding the importance of seeking out extensive, widely-sourced information regarding investee firms (Ahmed, 2013). This reflects the broader secrecy culture embedded in Egyptian society, which again points to the need for empirical analysis of the role of financial reporting in the modern context. Moreover, this is the first study to account for the association between CIR practices and firm value covering four years which is not the case for Lai et al. (2010), who ran the analysis for one year. Finally, the CIR index employed is likely to represent a comprehensive measure of CIR practices amongst non-financial companies listed on the EGX unlike the one used by Lai et al. (2010) which contains 28 information items.

Egypt was targeted for the present study as an emerging economy with a major influence on other countries in the Middle East as well its traditionally strong historical relationships with the world's richest nations (Ahmed, 2013). In addition, Egypt recently confronted many challenges, before, during and following the uprising which led to President Mubarak's resignation in February 2011. Internet technology, together with Egyptians' demand for democracy and transparency fuelled the protests, as thousands of demonstrators joined together in several cities following an online campaign. Despite difficulties with communication technology at the height of the revolution, internet usage in Egypt has continued to increase dramatically, with 56.2% (48.3 million users) of the population having access to the internet in December 2014, compared with only 0.58% in 1999 (Ministry of Communications and Information Technology, 2015). This level of growth is directly relevant to the present study as it has been argued that:

> where general internet usage is more prevalent in a country, users will expect more company information to be placed on the internet. Similarly, firms will likely have higher IFR if they believe that there is a large internet audience (Debreceny et al., 2002, p. 376).

The Egyptian economy was badly affected by the civil unrest, and so CIR practices might prove important in the economic re-building process by providing the detailed and timely information necessary to attract foreign investment. Finally, in terms of the selection of Egypt as the empirical site, the Egyptian Financial Supervisory Authority (EFSA) has now obliged listed companies to set up a web presence and engage actively in CIR practices (EFSA, 2012), suggesting that the nation's authorities take CIR's potential seriously. This decision could mark an important turning point towards embedding of the internet as a communication channel by companies listed on the Egyptian Exchange (EGX) and indeed set a precedent which other countries may follow. This recent decree adds to the timeliness of the present study. Furthermore, this decision could be seen as an attempt by the Egyptian government to reduce foreign investors' uncertainty concerning the financial stability of companies listed on the EGX taking into account the ongoing political upheaval in the Middle East and Egypt in particular.

A sizeable amount of research has emerged in the past few years that investigates voluntary disclosure practices (Ahmed & Courtis, 1999). In this context, the literature indicates that voluntary disclosure reduce cost of capital, agency costs and have a positive impact on the market value of firms (Lai et al., 2010). In addition, as noted earlier this should provide some indication of the usefulness of the information to market participants when making investment decisions. Using a sample of

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[6] The event date for the first hypothesis was the internet access day in each country, while the event date in the second hypothesis was the date when the firm announced the launch of their website (Hunter and Smith, 2009).

[7] Kompas 100 is an index of 100 shares of public companies listed on the IDX and has high liquidity and market capitalization (Rahman, 2010).

Egyptian companies and employing an interview analysis, Ahmed (2013) found that corporate information made available via corporate websites is one of the most common sources of financial information for financial analysts, and to a lesser extent, private investors. This evidence implies that CIR can have an impact on market participants' investment decisions. Hence, the current paper tries to uncover whether CIR has tangible economic implications for the sample firms. The recent awakening of the Egyptian government to the benefits of the internet as a reporting medium provides further motivation for the analysis of the value relevance of CIR on the EGX. Based upon this and on the basis of the discussion of the extant literature, the current paper proposes the following hypothesis:

H1. : The extent of CIR provided by Egyptian listed non-financial companies is value relevant and can explain market value.

4. Research design

4.1. Construction of the disclosure index

The study used an unweighted index to determine CIR practices amongst the surveyed companies, as Beattie et al. (2004) suggested that "weighted and unweighted scores tend to give the same results where there are a large number of items" (p. 210). In addition, with weighted indices, the same item can be scored differently by varying users and this will lead to misleading results, as the relative importance of each item varies from country to country, industry to industry, from one person to another and from time to time (Abdelsalam, 1999). The use of unweighted indices reduces the subjectivity problem (Ahmed & Courtis, 1999); in contrast, assigning weights involves a great deal of subjective judgment that comes either from the researcher or the user group or both. Similarly, Marston and Polei (2004) contend that "weights contain an element of subjectivity which cannot be completely avoided in the composition of such a score" (p. 297). Each company was therefore given a score of 1 if the item was present and a score of zero if not. The first step in choosing the items to be included in the CIR index involved reviewing the disclosure literature, focusing in particular on those studies devoted to exploring online reporting (e.g. Aly et al., 2010; Debreceny et al., 2001; FASB, 2000; Marston & Polei, 2004; Pirchegger & Wagenhofer, 1999; Xiao, Yang, & Chow, 2004). The second step took the form of a review of the country's disclosure regulations and requirements as well as visiting the sample companies' websites to review their current status and to get a closer picture of CIR practices amongst companies listed on the EGX. The complete CIR index included 110 items divided across three main sections: content items (69); user support items (29) and presentation items (12). The 69 content items were disaggregated further into: accounting and financial information items (25); corporate governance items (11); corporate social responsibility (CSR) items (9); and investor relations items (24). The CIR index employed is likely to represent a comprehensive measure of CIR practices amongst non-financial companies listed on the EGX.[8] The reliability of the utilized index was tested using Cronbach's coefficient alpha. An acceptable level for this measure is often cited as 0.6 or above (Sekaran, 2003), although Bryman (2008) argues that this figure should be 0.8 or more and that there is room for judgment in the matter. The Cronbach's alpha tests for 2010, 2011, 2012 and 2013 generated scores of 0.97, 0.97, 0.95 and 0.96 respectively, implying an acceptable level of internal consistency in the disclosure index results.

4.1.1. Sample and data collection

Data used in the current paper have been obtained from different sources including firms' annual reports and websites as well as DataStream database. All of the 172 non-financial companies listed on the EGX in December 2010 were targeted for the present study. Financial companies were excluded as they are subject to different regulations and standards.[9] Indeed, a great deal of literature indicates that the financial statements of financial institutions are very different from their non-financial counterparts; thus, it is important to investigate them separately to avoid generating misleading findings (Barth et al., 2001). In this regard, many studies have failed to distinguish between financial and non-financial listed companies, resulting in findings that weakened in terms of their robustness by the fact that accounting standards differ across these two groups (Ahmed, 2013). Multiple approaches were used to identify whether the sample companies have maintained a website or not, to reduce the possibility of missing any disclosures. Due to the dynamic development of internet technology, the study sought to determine the extent of CIR practices amongst non-financial companies listed on the EGX for the years of 2010 and 2011, to highlight the changes that took place during this period.[10] The study focused on these years because of the considerable increase in the percentage of internet users in Egypt during that period, from 29.5% in 2010 to 36% in 2011 as a result of the 2011 uprising that led to the resignation of President Mubarak. In order to provide clearer insights about the change of CIR over years and to avoid reporting misleading results, the current paper extends CIR analysis for the years of 2012 and 2013 to control for the impact of such political change on CIR practices.

In December 2010, 137 of the sampled companies reported having a website, 17 of which proved to be inaccessible or under-construction. This meant that 120 of the sampled companies had usable websites; of these 120, 70 provided some kind of financial information via their websites. By December 2013, 141 of the sampled companies had a website, of which 22 proved to be inaccessible or under-construction. This data implies that 119 of the surveyed companies had an active web presence. Of these 119 websites, 73 contained some form of financial information; we examine the same set of companies over the period of this investigation. Although the CIR practices are still limited amongst companies listed on the EGX, this result has to be seen in the context of the secrecy culture embedded in Egyptian society. Of the 73 firms disclosing financial and non-financial information via their websites, only 60 were included in the final analysis throughout the investigated period, because of data availability. The study then proceeded to apply the CIR index to the sample of companies with accessible websites. The disclosure index for each company was calculated according to the following equation:

$$PCIR = \sum_{i=1}^{110} r_i \qquad (1)$$

where:

PCIR   the Percentage Corporate Internet Reporting Score;
r_i 1 if the item is reported and 0 otherwise; and $i = 1, 2, 3, \ldots 110$ (the number of items disclosed by each company via their websites).

4.2. Valuation model development

In order to perform the value relevance analysis, the current study adopts the valuation model of Ohlson (1995); this model underpins a large body of value relevance studies that have been conducted over the last two decades in both developed and developing countries (Francis & Schipper, 1999; Harris, Lang, & Möller, 1994; Hassan &

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[8] This paper will not discuss the content or the execution of the disclosure index in great depth as this is not the key focus of this paper but this information is available from the authors upon request.

[9] For example, banks are controlled and supervised by the Central Bank of Egypt, while insurance companies' financial statements are prepared in accordance with EAS related to insurance and reinsurance and law No. 10 of 1981 (Aly et al., 2010)

[10] FASB (2000) argued that "Internet-months are like years in the sense that things change so quickly. It has been said that 18 internet weeks = 1 normal year" (p. 17).

Mohd-Saleh, 2010; Hellström, 2006; Wang, Alam, & Makar, 2005). The Ohlson model is based upon three fundamental assumptions, namely: (i) the value of equity is equal to the present value of expected future dividends; (ii) a clean surplus arises which means that all changes in assets and liabilities, except those relating to dividends, should pass through the income statement; and (iii) information changes in a linear fashion (Ohlson, 1995). The linear regression equation of Ohlson (1995) yields the following:

$$MV_{it} = \alpha_0 + \alpha_1 BV_{it} + \alpha_2 EPS_{it} + \varepsilon_{it} \qquad (2)$$

where:

MV_{it} is the market value of equity at year end t for firm i;
BV_{it} is the book value of equity at the end of year t for firm i;
EPS_{it} represents the earnings per share for year t available to firm i's common shareholders; and.
ε_{it} is a random error term.

Since the market value of equity (the dependent variable) typically exhibits a high level of skewness and kurtosis, a logarithmic transformation was used to reduce the influence of extreme values and to make the distributions of these variables more normal (Bamber, 1987; Deakin, 1976; Hassan & Mohd-Saleh, 2010; Hassan, Percy, & Stewart, 2006; Lambert & Larcker, 1987). Thus, the model was modified as follows:

$$L(MV_{it}) = \alpha_0 + \alpha_1 BV_{it} + \alpha_2 EPS_{it} + \varepsilon_{it} \qquad (3)$$

where:

$L(MV_{it})$ is the natural log of the market value of companies' common equity measured three months following the previous financial year.[11]

In order to find out whether there is any influence of firm characteristics (especially firm size) on the firms' market values, the study included some control variables (size, audit firm, return on assets, liquidity, and leverage) in the regression analysis. Hence, the valuation model in Eq. (3) is reformulated as follows:

$$\text{Model 1}: \ L(MV_{it}) = \alpha_0 + \alpha_1 BV_{it} + \alpha_2 EPS_{it} + \alpha_4 SIZE_{it} + \alpha_5 ROA_{it} + \alpha_6 LIQ_{it} + \alpha_7 LEV_{it} + \alpha_8 AUD_8 + \varepsilon_{it} \qquad (4)$$

where:

SIZE   firm size measured by the total assets;
ROA   return on assets;
LIQ   liquidity measured by the current ratio;
LEV   leverage as measured by total debt to common equity;
AUD   Auditor as a dummy variable measured as 1 if the auditor is from the Big 4 and 0 otherwise.

In order to examine the value relevance of CIR-related information, a third explanatory variable is usually added to the valuation model as follows:

$$L(MV_{it}) = \alpha_0 + \alpha_1 BV_{it} + \alpha_2 EPS_{it} + \alpha_3 PCIR_{it} + \varepsilon_{it} \qquad (5)$$

where: PCIR is the percentage of overall CIR-related items as measured by Eq. (1).

In order to find out whether there is any influence of firm characteristics (especially firm size) on the relationship between PCIR and firms' market values, the study included some control variables (size, audit

firm, sector and leverage) in the regression analysis. Hence, the valuation model is reformulated as follows:

$$\text{Model 2}: L(MV_{it}) = \alpha_0 + \alpha_1 BV_{it} + \alpha_2 EPS_{it} + \alpha_3 PCIR_{it} + \alpha_4 SIZE_{it} + \alpha_5 ROA_{it} + \alpha_6 LIQ_{it} + \alpha_7 LEV_{it} + \alpha_8 AUD_8 + \varepsilon_{it}. \qquad (6)$$

In order to provide a clear insight about the value relevance of CIR, we developed three separate models to examine the value relevance of the sub-categories of CIR including the percentage content of CIR (PCCIR) in Eq. (6), the percentage of user support of CIR (PUCIR) in Eq. (7), and the percentage of the presentation of CIR (PPCIR) in Eq. (8), respectively as follows:

$$\text{Model 3}: \ L(MV_{it}) = \alpha_0 + \alpha_1 BV_{it} + \alpha_2 EPS_{it} + \alpha_3 PCCIR_{it} + \alpha_4 SIZE_{it} + \alpha_5 ROA_{it} + \alpha_6 LIQ_{it} + \alpha_7 LEV_{it} + \alpha_8 AUD_{it} + \varepsilon_{it} \qquad (7)$$

$$\text{Model 4}: \ L(MV_{it}) = \alpha_0 + \alpha_1 BV_{it} + \alpha_2 EPS_{it} + \alpha_3 PUCIR_{it} + \alpha_4 SIZE_{it} + \alpha_5 ROA_{it} + \alpha_6 LIQ_{it} + \alpha_7 LEV_{it} + \alpha_8 AUD_{it} + \varepsilon_{it} \qquad (8)$$

$$\text{Model 5}: \ L(MV_{it}) = \alpha_0 + \alpha_1 BV_{it} + \alpha_2 EPS_{it} + \alpha_3 PPCIR_{it} + \alpha_4 SIZE_{it} + \alpha_5 ROA_{it} + \alpha_6 LIQ_{it} + \alpha_7 LEV_{it} + \alpha_8 AUD_{it} + \varepsilon_{it}. \qquad (9)$$

5. Results and discussion

5.1. Descriptive statistics and correlation of the variables examined

This section provides descriptive statistics about the variables examined in the current study; specifically, it provides a 4-year analysis of the variable examined in the present paper. A detailed investigation of Table 2 reveals that the mean percentage of the overall number of CIR items disclosed (PCIR) was stable ranging from 0.29 to 0.31 in the period between 2010 and 2013 indicating a low level of internet reporting amongst the sample firm. The standard deviation of the PCIR is quite high suggesting that while some companies published a significant amount of internet-related reporting, others disclosed a poor level of such information. A further analysis of the table reveals that the sub-categories of internet reporting showed a similar trend to that of the PCIR. For example, the percentage of the percentage content of CIR (PCCIR) related items disclosed had a constant mean of 0.28 through the period of analysis. The standard deviation value for the PCCIR was relatively high at 0.17. In addition, Table 2 indicates that the percentage of user support (PUCIR) recorded the highest level of CIR categories with a range of between 0.34 and 0.35. On the other hand, the percentage of the presentation of CIR (PPCIR) category reported the lowest level of CIR; it had ranged from 0.20 to 0.22 of the specified items disclosed. A more detailed analysis of the table illustrates that the mean of the market value of equity (Log MV) for the sample firms ranged between 17.00 in 2010 to 17.80 in 2013 with a low standard deviation (SD) of 2.1. an analysis of Table 2 shows that MR ranged from 0.86 to 0.90 over the period of the study. In addition, Table 2 indicates that the mean of the book value (BV) was ranged from 12.90 to 13.20 with a maximum value of 18 and a minimum of value of 7. Further analysis of Table 2 reveals that the mean of the earnings variable (earnings per share) was between 8.20 and 8.60, however, the minimum value of earnings was negative indicating that some companies in the sample performed poorly over the period examined in study. In addition to other firm characteristics defined in Table 2, the sample of the current study was disaggregated according to whether or not companies are audited by one of the 'big four' accounting firms. The analysis of the current paper shows that 18 firms used auditors from this group, while 42 hired other firms.

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[11] Market value (MV) is represented by the number of outstanding shares multiplied by the firm's share price on the last trading day of the three months following the end of the financial year; this date was chosen to ensure that the FI information was in the public domain when the relationship was estimated.

Table 2
Descriptive statistics of the variables examined.

Variable	Mean				A.St.D	Max	Min
	2010	2011	2012	2013			
PCIR	0.29	0.30	0.30	0.31	0.12	0.74	0.05
PCCIR	0.28	0.28	0.28	0.28	0.17	0.81	0.03
PUCIR	0.34	0.34	0.35	0.35	0.13	0.69	0.10
PPCIR	0.20	0.22	0.22	0.21	0.11	0.42	0.00
MV	17.00	17.60	17.60	17.80	2.10	25.00	9.20
MR	0.90	0.86	0.88	0.88	0.13	1.50	0.00
BV	12.90	13.10	13.20	13.20	1.70	18.00	7.00
EPS	8.20	8.50	8.60	8.50	3.50	35.00	−6.50
SIZE	20.50	20.50	21.00	21.0	4.70	35.00	8.30
ROA	8.00	8.10	7.50	7.50	1.90	30.00	0.05
LIQ	2.50	2.50	2.20	2.40	6.90	25.00	0.60
LEV	50.00	51.00	55.00	56.00	10.50	340.00	1.00

	Auditor Big 4				Auditor non-Big 4			
	2010	2011	2012	2013	2010	2011	2012	2013
Auditor	18	18	19	21	42	42	41	39

Table 3 reports Pearson correlation coefficients for the variables examined in the current study. A visual inspection of Table 3 reveals that some of the variables examined are positively correlated, however, these correlations are not very high. Nevertheless, the study tested for the presence of collinearity when estimating the regression equations by estimating the variance inflation factor (VIF); a value of greater than 10 indicates that a significant amount of collinearity may be present (Sprent and Smeeton, 2007). An analysis of Table 3 indicates that the highest correlation was between internet reporting-related variables (PCIR, PCCIR, PUCIR and PPCIR) where the value, in some instances, exceeded 0.8. This high correlation between these variables is not surprising given that such variables were constructed within the same disclosure index employed by the current study. Other variables, although significant, show relatively low levels of correlation ranging between 0.100 and 0.600 (see Table 3).

5.2. The association between Corporate Internet Reporting and market value

This section examines the value relevance of Corporate Internet Reporting published by Egyptian listed firms. In particular, it examines the association between share prices and the level of PCIR provided; it aims to explore whether such information is value relevant and can explain companies' market values. Table 4 reports the results from estimating models proposed by the current study in order to test the value relevance analysis of PCIR (Model 2). Prior to the examination of PCIR, the value relevance of accounting information (BV and EPS) test

first performed by Ohlson (1995) was conducted to see whether the expansion of PCIR variables is value relevant and whether it provides additional explanatory power beyond the BV and EPS variables. An analysis of Model 1 (Eq. (4)) in Table 4 reveals that both BV and EPS were significantly associated with market values; they had positive and significant coefficients of 1.212 and 0.825, with p-values of less than 1%. An F-statistic based on testing the joint significance of the two variables rejected the null hypothesis that the two variables did not explain market values; it had a value of 57.622. A visual inspection of the results from Model 1 in Table 4 reveals that BV and Earnings jointly explain 55% of the variation in the companies' market values.

Model 2 (Eq. (5)) examines the value relevance of the PCIR variable; the results from estimating this equation are also reported in Table 4. A visual inspection of this table reveals that PCIR is value relevant; there is a statistically significant relationship between PCIR and market value (share prices) over the period of investigation. In particular, the coefficient of PCIR was 0.975 at the 5% level. This result suggests that market participants viewed PCIR information as influential news when determining a firm's market value.

In terms of the explanatory power of Model 2, Table 4 indicates that a sizeable part of the sample companies' market values is explained by a model which includes PCIR with an adjusted R^2 of 0.88. Comparing the adjusted R^2 from Model 1 and Model 2 can help in determining whether the addition of the PCIR variable had a significant impact on the analysis. In particular, the adjusted R^2 of Model 2 is 0.33 higher than that of Model 1; the difference between these two-adjusted R^2 was examined and the F-statistic was higher than the critical value at the 1% level.

Table 3
Correlation Analysis of the Variables Examined.

Variables	PCIR	PCCIR	PUCIR	PPCIR	MV	MR	BV	EPS	SIZE	ROA	LIQ	LEV	AUD
PCIR	1.000												
PCCIR	0.855**	1.000											
PUCIR	0.710**	0.810**	1.000										
PPCIR	0.675**	0.797**	0.695**	1.000									
MV	0.500**	0.475**	0.510**	0.350**	1.000								
MR	0.379*	0.310*	0.278*	0.372*	0.678*	1.000							
BV	0.675**	0.525**	0.480**	0.620**	0.581**	0.436**	1.000						
EPS	0.205*	0.310*	0.250*	0.420*	0.339**	0.480**	0.340	1.000					
SIZE	0.297*	0.352*	0.300*	0.465*	0.450*	0.349*	0.245	0.111*	1.000				
ROA	0.191	0.210	0.270	0.358	0.325*	0.245*	0.115	0.423*	0.273*	1.000			
LIQ	0.295*	0.256*	0.350*	0.520*	0.255	0.189*	0.345*	0.120	0.605*	0.099	1.000		
LEV	0.447*	0.475*	0.390*	0.375*	0.249	0.110*	0.390*	0.160	0.380*	0.213	0.280*	1.000	
AUD	0.680**	0.530**	0.590**	0.480**	0.415*	0.267*	0.575	0.184	0.250	0.126	0.178	0.419*	1.000

** Significant at the 1% level.
* Significant at the 5% level.

Table 4
The value relevance of internet reporting – regression analysis.

Variables	Model 1		Model 2		Model 3		Model 4		Model 5	
	Coeff.	t-Value	Coeff.	t-Value	Coeff.	t-Value	Coeff.	t-Value	Coeff.	t-Value
Intercept	0.170	0.839	0.188	0.213	0.156	0.110	0.166	0.145	0.174	0.920
PCIR	–	–	0.975	0.710[*]	–	–	–	–	–	–
PCCIR	–	–	–	–	1.05	0.761[*]	–	–	–	–
PUSCIR	–	–	–	–	–	–	0.843	1.210[*]	–	–
PPCIR	–	–	–	–	–	–	–	–	0.715	0.645
BV	1.212	15.22[**]	0.898	13.50[**]	1.340	11.65[**]	1.10	10.13[**]	0.948	12.31[**]
EPS	0.825	4.25[**]	0.511	0.763[**]	0.625	0.487[**]	0.565	0.358[**]	0.787	0.438[**]
SIZE	2.100	1.56[**]	1.700	0.644[**]	1.680	1.45[**]	2.20	1.95[**]	2.32	2.35[**]
ROA	0.475	2.04[*]	0.465	2.07[*]	0.733	1.59[*]	0.534	21.12[**]	0.621	1.89[**]
LIQ	0.191	1.36	0.190	1.35	0.210	1.64	0.180	0.178	0.185	0.200
LEV	0.110	0.289	0.090	0.274	0.152	0.143	0.85	0.056	0.100	0.090
AUD	0.228	1.03[*]	0.245	0.970	0.250	0.102[*]	0.330	0.151[*]	0.316	0.203[*]
R^2		0.61		0.89		0.75		0.74		0.63
Adjusted R^2		0.55		0.88		0.74		0.72		0.62
F-statistics		57.622[**]		49.329[**]		47.230[**]		46.26[**]		35.02[**]

[**] Significant at the 1% and 5% level.
[*] Significant at the 5% level.

This result suggests that the PCIR variable has additional explanatory power for market value. In addition, Table 4 indicates that the F-statistics for the joint significance of the three variables rejects the null Hypothesis that the coefficients are equal to zero; the F-statistic had a value of 49.329. According to the results presented in Table 4 of Model 2, H1 is accepted.

Overall, the results of Model 2 in Table 4 lend support to the general view that reporting of additional information is useful for valuing shares (Miller & Bahnson, 2002). Specifically, Miller and Bahnson (2002) argued that investors are more confident when they have access to additional information; hence, they will be satisfied with lower returns as the risk is reduced, which leads to higher security prices.

An examination of the value relevance of the overall level of PCIR does not allow researchers to draw conclusions about which of the components of the PCIR variable that investors find most useful when making decisions. Indeed, analyzing each category of PCIR separately facilitates an understanding of users' perceptions of the worth of PCIR information. These components are important since they may help investors quantify the future benefits and cost of their investment decisions (Hassan & Mohd-Saleh, 2010). In addition, the market may react differently to these different types of accounting information (Imhoff, 1992). In addition, because of the subjectivity involved in some of the information provided, investors may find some of the data more useful than others. However, if certain components of information are important for decision-making, it is expected that market participants will value such components when making decisions. Thus, the study also examined the value relevance of the sub-components of PCIR.

Table 4 also reports the results from estimating Model 3 (Eq. (7)), Model 4 (Eq. (8)) and Model 5 (Eq. (9)) which present the sub-categories of PCIR. In particular, Model 3 examines the value relevance of the content of CIR (PCCIR). An inspection of Model 3 in Table 3 reveals that a significant relationship exists between a firm's market value and the PCCIR variable as well as BV and earnings. In particular, the first component of CIR is statistically significant; it has a coefficient of 1.05 and a p-value of less than 0.05. This result suggests that the content of CIR information is important for investors when making equity valuation decisions. A further analysis of the results for Model 3 indicates that the model is quite revealing where it explains a significant amount of the market value variation with an adjusted R^2 of 0.74. Moreover, Table 3 indicates that the F-statistics of Model 3 for the joint significance of the three variables reject the null hypothesis that the coefficients are equal to zero; the F-statistic had a value of 47.230.

Model 4 reflects information regarding the user support of CIR (PUCIR). A visual inspection of Model 4 in Table 4 illustrates that

PUCIR variable has a strong relationship with firms' market values; it has a coefficient of 0.843 and a p-value of less than 0.05. This information seems crucial for investors when assessing the financial position of firm's financial assets and liabilities, the model had a great deal of explanatory power in relation to firms' share prices (market value); it has an adjusted R^2 of 0.72. A further analysis of Model 4 in Table 4 reveals that the null hypothesis that the coefficients of the variables examined are jointly equal to zero at the 1% level cannot be rejected; the F-statistic is 46.26. Finally, Table 4 shows that PPCIR variable, which represents information about the presentation of PCIR and is reflected in Model 5, is not value relevant as it had no significant association with firms' market value with a coefficient of 0.715 and a p-value of greater than 0.05. This implies that the presentation of financial information has little value relevance for market participants.

6. Discussion

The current paper provides strong evidence about the value relevance of CIR. Specifically, a significant positive association was found between CIR and both of market value and market returns. In general, the findings indicate that Egyptian investors attach value to the publishing of accounting information via corporate websites when making investment decisions. This conclusion is consistent with Ahmed's (2013) findings about the usefulness of CIR. Using semi-structured interviews to examine the usefulness of CIR in Egypt, Ahmed (2013) concluded that Egyptian users in general, and investors in particular, viewed CIR as an important channel of financial reporting. In addition, the results of the current paper regarding the value relevance of CIR provide support for the extant literature in general (Hunter and Smith, 2009; Lai et al., 2010 and Rahman, 2010) and Egyptian literature in particular (Ahmed, 2013; Hassan, Romilly, Giorgioni, & Power, 2009) which indicated that providing more information (especially online) may decrease both the cost of transactions and the cost of equity capital. In keeping with this view, Miller and Bahnson (2002) argued that investors are more confident when they have access to additional information; hence, they will be satisfied with lower returns as the risk is reduced, leading in turn to higher security prices.

6.1. Further analyses and robustness checks

The current paper carries out several analyses to ascertain that the findings arrived at are robust. First, the Easton and Harris (1991) measure was used to examine the association between annual share returns and PCIR and the three sub-categories of CIR (PCCIR, PUCIR, and

Table 5
The association between internet reporting and market returns — regression analysis.

Variables	Model 6		Model 7		Model 8		Model 9		Model 10	
	Coeff.	t-Value	Coeff.	t-Value	Coeff.	t-Value	Coeff.	t-Value	Coeff.	t-Value
Intercept	0.202	1.21*	0.152	0.586*	0.356	0.931	0.234	0.152*	–	–
PCIR	–	–	1.085	2.10**	–	–	–	–	–	–
PCCIR	–	–	–	–	2.19	1.89*	–	–	–	–
PUSCIR	–	–	–	–	–	–	0.445	2.54*	–	–
PPCIR	–	–	–	–	–	–	–	–	0.514	1.012*
BV	0.310	8.70**	0.161	16.870*	0.575	6.330**	0.823	3.880**	0.986	11.270*
EPS	0.467	0.723**	0.252	0.460*	0.411	0.348**	0.232	1.105*	0.177	0.207**
SIZE	0.253	2.68**	0.298	0.970*	0.680	4.95**	0.198	1.857**	0.438	2.92**
ROA	0.192	0.712*	0.083	1.19*	0.276	0.185**	0.640	0.382*	0.257	0.628*
LIQ	0.151	4.92	0.119	0.617	0.387	0.227	0.110	0.012	0.166	0.048
LEV	0.062	2.28	0.200	0.647	0.088	0.215	0.162	1.325	0.142	0.127
AUD	0.373	1.47*	0.451	2.585*	0.853	0.947*	0.113	0.136*	0.312	0.337*
R^2	0.57		0.62		0.60		0.63		0.59	
Adjusted R^2	0.51		0.58		0.53		0.56		0.52	
F-statistics	31.732**		40.110*		35.178**		28.350**		37.100**	

** Significant at the 1% level.
* Significant at the 5% level.

PPCIR).[12] In order to run this analysis, the regression models for Models 1, 2, 3, 4, and 5 were modified as follows using market returns (MR) as the dependent variable instead of $L(MV_{it})$:

$$\text{Model 6}: \quad MR_{it} = \alpha_0 + \alpha_1 BV_{it} + \alpha_2 EPS_{it} + \alpha_3 SIZE_{it} + \alpha_4 ROA_{it} + \alpha_5 LIQ_{it} + \alpha_6 LEV_{it} + \alpha_7 AUD_{it} + \varepsilon_{it} \quad (10)$$

$$\text{Model 7}: \quad MR_{it} = \alpha_0 + \alpha_1 BV_{it} + \alpha_2 EPS_{it} + \alpha_3 PCIR_{it} + \alpha_4 SIZE_{it} + \alpha_5 ROA_{it} + \alpha_6 LIQ_{it} + \alpha_7 LEV_{it} + \alpha_8 AUD_8 + \varepsilon_{it} \quad (11)$$

$$\text{Model 8}: \quad MR_{it} = \alpha_0 + \alpha_1 BV_{it} + \alpha_2 EPS_{it} + \alpha_3 PCCIR_{it} + \alpha_4 SIZE_{it} + \alpha_5 ROA_{it} + \alpha_6 LIQ_{it} + \alpha_7 LEV_{it} + \alpha_8 AUD_8 + \varepsilon_{it} \quad (12)$$

$$\text{Model 9}: \quad MR_{it} = \alpha_0 + \alpha_1 BV_{it} + \alpha_2 EPS_{it} + \alpha_3 PUCIR_{it} + \alpha_4 SIZE_{it} + \alpha_5 ROA_{it} + \alpha_6 LIQ_{it} + \alpha_7 LEV_{it} + \alpha_8 AUD_8 + \varepsilon_{it} \quad (13)$$

$$\text{Model 10}: \quad MR_{it} = \alpha_0 + \alpha_1 BV_{it} + \alpha_2 EPS_{it} + \alpha_3 PPCIR_{it} + \alpha_4 SIZE_{it} + \alpha_5 ROA_{it} + \alpha_6 LIQ_{it} + \alpha_7 LEV_{it} + \alpha_8 AUD_8 + \varepsilon_{it}. \quad (14)$$

The results of this analysis are shown in Table 5.

A visual inspection of the table reveals a great deal of similarity with the evidence in Table 4 where the market value was employed. In particular, Table 5 reports a statistically significant association in between PCIR and market returns, with a coefficient of 1.085 and a p-value of less than 1% (Model 7). Further, the analysis in Table 5 shows that PCIR provides a great deal of explanatory power with an adjusted R^2 of 0.58. A further analysis of Model 7 in Table 5 reveals that the null hypothesis that the coefficients of the variables examined are jointly equal to zero at the 1% level cannot be rejected; the F-statistic is 40.110. In addition, the table reports that Models 8, 9 and 10 all indicated a positive significant relationship between market returns and each of PCCIR, PUCIR and PPCIR with p-values of less than 5% in each case. The results of the value relevance analysis based on market returns thus provide a strong support for those employing market values as the basis for assessing the impact of CIR.

Second, an alternative estimation period for the value relevance analysis is employed in order to ensure that the political and economic upheaval in Egypt during the 2011 uprising had no impact on the results of the study. Specifically, the value relevance analysis was conducted pre- and post-political changes (for years 2010–2013) using both market values and market returns to examine the value relevance of such information. The results of this analysis (not reported here but available from the authors upon request) reveal similar findings to these reported in Tables 4 and 5. Specifically, CIR had a significant positive relationship with both firms' market values and returns.

7. Conclusion.

This paper reports the results from a value relevance analysis of CIR supplied by Egyptian listed non-financial companies. Two main findings emerge from this examination. First, the evidence suggests that CIR was value relevant over the period of investigation. Specifically, the overall percentage of CIR-related information provided by Egyptian companies had a positive and significant relationship with both firm market value and market returns. Second, the value relevance analysis of CIR-related sub-categories indicates that while CIR both content and user support categories was value relevant, the presentation category was not associated with firms' market value. The results of the current study have a number of practical implications for both national (Egyptian) and international policy-makers. For example, the results provide some insights into how the capital market perceives CIR information. This insight is timely in light of the 2013 EFSA requirement for Egyptian firms to make information available online. In addition, the results should provide insights for other developing countries that are working hard to improve the quality of CIR for their business entities. Moreover, the findings of the present study should provide some insight into the efficiency of the stock exchange; specifically, the results may provide valuable information for the Egyptian stock exchange about how the capital market reacts to newly published information. Finally, the results provide some insights for finance directors of Egyptian firms, who make decisions on the content of CIR information; they should glean valuable insights into how the CIR information which their firms publish is perceived by investors and reflected in share prices. Given that the value relevance literature of CIR is very scarce, the current paper contributes to the burgeoning literature on CIR practices around the world. However, it goes a step further than much of the extant literature by providing much needed insight on the value relevance (and by inference decision usefulness) of such disclosure in a developing market. Second, this is the first study to investigate CIR practices using a sample of non-financial listed companies on the EGX, a market which has experienced several major political and economic changes in recent years. Third, the current CIR index represents one of the most comprehensive set of criteria used to measure CIR practices in developed and developing nations, including Egypt; therefore, it is likely to provide a robust assessment of such

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[12] We use the capital asset pricing model (CAPM) to estimate market returns of companies involved in this investigation; CAPM is based on an equilibrium model that assumes returns depend solely on the market (Lintner, 1965, Sharpe, 1964). Specifically, daily stock returns were used in the analysis of this paper.

practices in these companies. Specifically, the checklist's grounding in the empirical literature and the qualitative characteristics of information central to the decision-usefulness theoretical framework ensures that the disclosure index is well-specified and that the conclusions reached represent genuine contributions. Finally, this is the first study to determine the extent of CIR practices amongst companies at two points in time. This is an important contribution taking into account the dynamic development of internet technology and the increasing demand for web-based investor relations information.

References

Abdelsalam, O. H. (1999) The introduction and application of international accounting standards to accounting disclosure regulations of a capital market in a developing country: The case of Egypt. Un-published PhD Thesis, Herriot-Watt University, Edinburgh, UK.

AbuGhazaleh, N. M., Qasim, A., & Haddad, A. (2012). Perceptions and Attitudes toward Corporate Website Presence and its Use in Investor Relations in the Jordanian Context. *Advances in Accounting, Incorporating Advances in International Accounting, 28*(1), 1–10.

Ahmed, H. A. (2013) Corporate Internet Reporting in Egypt: Practices and perceptions. Un-published PhD Thesis, University of Dundee, UK.

Ahmed, K., & Courtis, J. K. (1999). Associations between corporate characteristics and disclosure levels in annual reports: A meta-analysis. *The British Accounting Review, 31*(1), 35–61.

Aly, D., Simon, J., & Hussainey, K. (2010). Determinants of corporate internet reporting: Evidence from Egypt. *Managerial Auditing Journal, 25*(2), 182–202.

Al-Htaybat, K., Alberti-Alhtaybat, L., & Abed-Hutaibat, K. (2011). Users' Perceptions on Internet Financial Reporting Practices in Emerging Markets: Evidence from Jordan. *International Journal of Business and Management, 6*(9), 170–182.

Ashbaugh, H., Johnstone, K. M., & Warfield, T. D. (1999). Corporate reporting on the internet. *Accounting Horizons, 13*(3), 241–257.

Azab, B. I. (2002) The performance of the Egyptian stock market. Un-published Master Dissertation, University of Birmingham, Birmingham, UK.

Bamber, l. S. (1987). unexpected earnings, firm size, and trading volume around quarterly earnings announcements. *the accounting review, 62*(3), 510–532.

Barth, M. E., Beaver, W. H., & Landsman, W. R. (2001). The relevance of the value relevance literature for financial accounting standard setting: Another view. *Journal of Accounting and Economics, 31*, 77–104.

Beattie, V., & Pratt, K. (2003). Issues concerning web-based business reporting: An analysis of the views of interested parties. *The British Accounting Review, 35*(2), 155–187.

Beattie, V., McInnes, B., & Fearnley, S. (2004). A Methodology for Analysing and Evaluating Narratives in Annual Reports: A Comprehensive Descriptive Profile and Metrics for Disclosure Quality Attributes. *Accounting Forum, 28*(3), 205–236.

Bonsón, E., & Escobar, T. (2006). Digital reporting in Eastern Europe: An empirical study. *International Journal of Accounting Information Systems, 7*(4), 299–318.

Bryman, A. (2008). *Social research methods* (3rd. ed.). USA: Oxford University Press.

Central Bank of Egypt (2015). *Annual Report. Cairo, Egypt.* [online] http://www.cbe.org.eg/English/, accessed on 16/04/2015.

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

Davis, C. E., Clements, C., & Keuer, W. P. (2003). Web-based reporting: A vision for the future. *Strategic Finance, 85*(3), 45–49.

Deakin, E. B. (1976). Distributions of financial accounting ratios: Some empirical evidence. *The Accounting Review, 51*, 90–96.

Debreceny, R., Gray, G. L., & 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., & Rahman, A. (2002). The determinants of internet financial reporting. *Journal of Accounting and Public Policy, 21*(4/5), 371–394.

Dunne, T. M., Helliar, C., Lymer, A., & Mousa, R. (2013). Stakeholder Engagement in Internet Financial Reporting: The Diffusion of XBRL in the UK. *The British Accounting Review, 45*(3), 167–182.

Easton, P., & Harris, T. (1991). Earnings as an explanatory variable for returns. *Journal of Accounting Research, 29*(1), 19–36.

EFSA (2012). Decision No. 15 Regarding Amending Listing and De-listing Rules. *EFSA, Egypt.* [online] http://www.efsa.gov.eg/content/efsa2_en/decisions_en/dec15_en.htm, accessed on 20/03/2012.

Ettredge, M., Richardson, V. J., & Scholz, S. (2001). The presentation of financial information at corporate web sites. *International Journal of Accounting Information Systems, 2*(3), 149–168.

Ettredge, M., Richardson, V. J., & Scholz, S. (2002). Dissemination of information for investors at corporate web sites. *Journal of Accounting and Public Policy, 21*(4/5), 357–369.

Ezat, A., & El-Masry, A. (2008). The impact of corporate governance on the timeliness of Corporate Internet Reporting by Egyptian listed companies. *Managerial Finance, 34*(12), 848–867.

Fama, E. F. (1970). Efficient capital markets: A review of theory and empirical work. *Journal of Finance (May), 383–417.*

FASB (2000). *Business reporting research project: Electronic distribution of business information.* Norwalk, CT: Financial Accounting Standards Board.

Francis, J., & Schipper, K. (1999). Have financial statements lost their relevance? *Journal of Accounting Research, 37*, 319–352.

Gowthorpe, C. (2004). Asymmetrical Dialogue? Corporate Financial Reporting via the Internet. *Corporate Communications: An International Journal, 9*(4), 283–293.

Harris, T. S., Lang, M., & Möller, H. P. (1994). The value relevance of German accounting measures: An empirical analysis. *Journal of Accounting Research, 32*, 187–209.

Hassan, M. S., & Mohd-Saleh, N. (2010). The value relevance of financial instruments disclosure in Malaysian firms listed in the main Board of Bursa Malaysia. *International Journal of Economics and Management, 4*(2), 243–270.

Hassan, M. S. B., Percy, M., & Stewart, J. D. (2006). The value relevance of fair value disclosures in Australian firms in the extractive industries. *Asian Academy of Management Journal of Accounting and Finance, 2*, 21–41.

Hassan, O. A. G., Romilly, P., Giorgioni, G., & Power, D. (2009). The value relevance of disclosure: Evidence from the emerging capital market of Egypt. *The International Journal of Accounting, 44*, 79–102.

Hellström, K. (2006). The value relevance of financial accounting information in a transition economy: The case of the Czech Republic. *The European Accounting Review, 15*, 325–349.

Hindi, N. M., & Rich, J. (2010). Financial reporting on the internet: Evidence from the Fortune 100. *Management Accounting Quarterly, 11*(2), 11–21.

Hunter, S. A., & Smith, M. (2009). Impact of Internet Financial Reporting on Emerging Markets. *Journal of International Business Research, 8*(2), 21–41.

IASB (2010). *International Accounting Standards Board (2010) Conceptual Framework for Financial Reporting (the IFRS Framework)* London.

Imhoff, E. A. (1992). The relation between perceived accounting quality and economic characteristics of the firm. *Journal of Accounting and Public Policy, 11*, 97–118.

Lai, S. C., Lin, C., Li, H. C., & Wu, F. H. (2010). An empirical study of the impact of internet financial reporting on stock prices. *International Journal of Digital Accounting Research, 10*, 1–26.

Lambert, R. A., & Larcker, D. F. (1987). An analysis of the use of accounting and market measures of performance in executive compensation contracts. *Journal of Accounting Research, 25*, 85–125.

Larrán, M., & Giner, B. (2002). The use of the internet for corporate reporting by Spanish companies. *The International Journal of Digital Accounting Research, 2*(1), 53–82.

Lintner, J. (1965). The valuation of risk assets and the selection of risky investments in stock portfolios and capita budgets. *The Review of Economics and Statistics, 47*, 13–37.

Marston, C. L., & Polei, A. (2004). Corporate reporting on the internet by German companies. *International Journal of Accounting Information Systems, 5*(3), 285–311.

Miller, P. B. W., & Bahnson, P. R. (2002). *Quality financial reporting.* McGraw-Hill Companies.

Ministry of Communications and Information Technology (2015). ICT indicators in brief. Cairo, Egypt. [online] http://www.egyptictindicators.gov.eg/en/Publications/PublicationsDoc/Indicators%D9%90En%20Jan19-3-2015.pdf (accessed on 10/04/2015)

Ohlson, J. (1995). Earnings, book values, and dividends in equity valuation. *Contemporary Accounting Research (Spring), 661–687.*

Petravick, S. (1999). Online financial reporting. *The CPA Journal, 32–36.*

Petravick, S., & Gillett, J. W. (1996). Financial reporting on the world wide web. *Management Accounting, 78*(1), 26–29.

Pirchegger, B., & Wagenhofer, A. (1999). Financial information on the internet: A survey of the homepages of Austrian companies. *The European Accounting Review, 8*(2), 383–395.

Rahman, Z. D. (2010). *The Impact of Internet Financial Reporting on Stock Prices Moderated by Corporate Governance: Evidence from Indonesia Capital Market.* [online] http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1576327, accessed on 20/05/2010.

Sekaran, U. (2003). *Research methods for business: A skill-building approach.* USA: John Wiley & Sons, Inc.

Sharpe, W. F. (1964). Capital asset prices: A theory of market equilibrium under conditions of risk. *Journal of Finance, 19*, 425–442.

Sprent, P., & Smeeton, N. C. (2007). *Applied Nonparametric Statistical Methods* (4th ed). Boca Raton: Chapman & Hall/CRC.

The Egyptian Exchange (2008). *The Annual Report.* Cairo, Egypt: EGX [online] http://www.egx.com.eg/getdoc/82231d2e-61fe-4bc8-93eb-b937d146029f/Annual-Report-2008_ar.aspx, accessed on 11/04/2009.

The Egyptian Exchange (2009). *The Annual Report.* Cairo, Egypt: EGX [online] http://www.egx.com.eg/getdoc/29d722d4-6dd6-484a-a818-220aa74219ca/Annual-Report-2009_ar.aspx, accessed on 30/03/2010.

The Egyptian Exchange (2012). *The Annual Report.* Cairo, Egypt: EGX [online] http://www.egx.com.eg/getdoc/f0d50a9e-058d-4d8c-b6ae-80afb9f398ee/Annual-Report-2012_en.aspx, accssed on 02/02/2013.

The World Bank (2004). *Report on the Observance of Standards and Codes (ROSC).* Corporate Governance Country Assessment: Egypt. The World Bank [online] http://www.worldbank.org/ifa/rosc_cg_egyp2.pdf, accessed on 15/04/2010.

Wang, L., Alam, P., & Makar, S. (2005). The value relevance of derivative disclosures by commercial banks: A comprehensive study of information content under SFAS No. 119 and 133. *Review of Quantitative Finance and Accounting, 25*, 413–427.

World Bank (2002). Report on the Observance of Standards and Codes (ROSC) Egypt, Arab Republic. *The World Bank* [online] http://www.worldbank.org/ifa/egyrosc_aa.pdf, accessed on 03/04/2010.

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