The value relevance of disclosure: evidence from the emerging capital market of Egypt.

HASSAN, O.A.G., ROMILLY, P., GIORGIONI, G. and POWER, D.

2009

Title page

The value-relevance of disclosure: evidence from the emerging capital market of Egypt[*]

Omaima A. G. Hassan, Peter Romilly, Gianluigi Giorgioni and
David Power

July 2008

Corresponding author:

Dr. Omaima A.G. Hassan
Accounting and Finance
Dundee Business School
University of Abertay Dundee
Old College
Bell Street
Dundee DD1 1HG
United Kingdom
Tel. 0044-1382-308138
Fax: 0044-1382-308400
E-mail: o.hassan@abertay.ac.uk

The value-relevance of disclosure: evidence from the emerging capital market of Egypt

Abstract

This study examines the value of voluntary and mandatory disclosure in a market that applies International Accounting Standards (IAS) with limited penalties for non-compliance. The lack of enforcement creates an element of choice in the level of mandatory disclosure by companies. Using panel data analysis, our empirical results show that, after controlling for factors such as asset size and profitability, mandatory disclosure has a highly significant but negative relationship with firm value. This result, although puzzling from a traditional perspective, is consistent with the predictions of analytical accounting models, which emphasise the complex interplay of factors determining disclosure effects. Our results also show that voluntary disclosure has a positive but insignificant association with firm value. This lack of statistical significance supports the view that there is a complex interplay of different factors determining the relationship between disclosure and firm value.

Key words: disclosure; firm value; cost of capital; economic consequences; Egypt.

1. Introduction

Prior studies about the economic consequences of disclosure generally focus on voluntary disclosure and are mostly conducted in developed markets such as the US, where strong enforcement mechanisms exist. In this context, companies tend to comply fully with mandatory disclosure requirements and reveal additional information to the public on a voluntary basis. Empirical results on disclosure are generally consistent with finance theory predictions that more public information enhances firm value by reducing the firm's cost of capital, or increasing the cash flows that accrue to shareholders, or both. In addition, they suggest that the type of disclosure is crucial to any analysis as the market responds differently to different types of disclosure (Botosan and Plumlee, 2002). Prior studies, however, focus either on investigating the link between voluntary disclosure levels and stock liquidity (see for example: Healy et al., 1999; Leuz and Verrecchia, 2000), or on testing the link between voluntary disclosure levels and a proxy for the cost of equity capital (see for example: Hail, 2002; Botosan and Plumlee, 2002). There is a little direct empirical evidence with regard to the relationship between voluntary disclosure and firm value in general and for emerging markets in particular.

Perhaps surprisingly, the literature on the economic consequences of mandatory disclosure is limited and somewhat ambivalent in its conclusions (Healy and Palepu, 2001; Bushee and Leuz, 2005). The effects of mandatory disclosure requirements are potentially complex, since companies can respond to the imposed costs in various ways. As Bushee and Leuz (2005: 2-8) emphasise, if disclosure regulation means both mandatory reporting obligations and the enforcement of these obligations, then companies can choose to comply with the mandatory regulations, trade in a different

market, go private, or not seek a stock market listing. The impact of mandatory disclosure can be divided into direct and indirect effects. Direct effects arise from the cost of compliance with mandatory disclosure. Such costs may be sizeable if firms' information systems need to be changed to gather additional data, if audit fees rise or if the publication costs of annual reports increase[1]. There are also indirect effects associated with mandatory disclosures arising from externalities. These externalities can be positive or negative and the question about whether the net externality is positive or negative is fundamentally an empirical matter (Bushee and Leuz, 2005: 237). A typical positive externality in a perfectly competitive market could arise from increased liquidity and reduced costs of information, where a number of (compliant) companies could be used by investors as guides to assess the performance and risk of other firms. However, if markets are imperfectly competitive then increased disclosure can attract investors away from other firms, resulting in lower price efficiency. For example, if traders face additional costs in studying a firm's disclosures as well as the extra costs of learning about a firm's industry, then traders may face lower costs when studying firms in the same industry. In such a case, both positive and negative externalities may be present. When one firm spends more on disclosure, other firms in the same industry may gain new investors, while firms in other industries may lose out (Fishman and Hagerty, 1989: 643).

Analytical accounting models also challenge the traditional view of disclosure effects. Wagenhofer (2004) argues that the effects of disclosure depend on three factors:

---

[1]For example, Bushee and Leuz (2005) show that when a regulatory change mandated that companies listed on the Over-The-Counter Bulletin Board (OTCBB) should comply with reporting requirements under the 1934 Securities Exchange Act, over 2,600 (or 76%) firms did not disclose the required information and hence were removed from the OTCBB. Thus, for most of their sample firms, the costs of compliance with newly introduced mandatory disclosure appeared to outweigh the benefits and companies chose to exit the market.

uncertainty, multiperson settings with conflicts of interest and information asymmetry. Depending on the assumptions made about these factors, it is possible to predict a negative relationship between increased disclosure and firm value. For example, more public disclosure might reduce private information acquisition by market participants and hence reduce the total amount of information available in the capital market. More public information might also have negative net benefits if the information places a firm at a competitive disadvantage relative to its rivals.

Furthermore, information might have a negative value even if its production is costless to the company, because investors may perceive themselves to be worse off if they consider that the company is disclosing information which it might exploit to their detriment. Investors might suspect or misinterpret the intentions of the company in providing more information to the market without an obligation to do so. For example, even if non-compliance costs with disclosure requirements are negligible, the company might comply with mandatory disclosures simply to prepare for a new share issue in the near future. In this context, investors might perceive the firm to be acting on "superior" information and change their valuations relative to a situation in which the firm is not perceived to act on such information.

In summary, the impact of disclosure on firm value is still an empirical issue. This study investigates the value of voluntary and mandatory disclosure in a market that applies IAS but where penalties for non-compliant companies were limited or non-existent. It takes a step towards filling a number of gaps identified in the current literature. First, most prior studies focus on companies listed in developed capital markets, mainly the US. This study extends the literature by investigating the economic consequences of disclosure in an emerging capital market (Egypt). Second, many prior studies suggest

5

that increased disclosure will reduce the firm's cost of capital and hence increase its value. However, there is a lack of direct empirical evidence with respect to the relationship between disclosure level and firm value. This study examines empirically the link between the extent of financial disclosure and firm value. Third, most prior studies focus on voluntary disclosure, since mandatory disclosure levels tend not to differ between companies in developed markets[2]. This study tests the impact of both mandatory and voluntary disclosure, because listed companies tended not to comply fully with mandatory disclosure requirements in the Egyptian context.

The remainder of this paper is organised as follows. Section 2 supplies an overview of Egypt's stock exchange and financial reporting regulations. Section 3 provides a discussion of the current literature and the research hypotheses. Data collection and information sources, as well as the empirical proxies of disclosure levels and firm value are presented in section 4. Section 5 provides a discussion of the results from a univariate analysis and from a multivariate regression model proposed by this research. Finally, the research conclusions and suggestions for future work are presented in section 6.

2. Egypt's stock exchange and financial reporting regulations - an overview

In Egypt, the main official financial disclosure vehicle for listed companies is the annual report. All companies listed on the Egyptian Stock Exchange (ESE) must comply with the disclosure rules required by the Capital Market Law (CML) 95 of 1992. They are required to provide copies of their annual and semi-annual financial statements to both

---

2 As a result, prior studies on mandatory disclosure tend to examine the economic consequences of new disclosure regulations rather than the level of compliance with pre-existing regulations (see, for example, Lo, 2003; Bushee and Leuz, 2005).

the Capital Market Authority (CMA) and the ESE and to publish a summary of them in two daily newspapers, at least one of which must be in Arabic. Mandatory financial disclosure includes the balance sheet, the income statement, the cash flow statement, the statement of changes in equity, the notes to the accounts, the board of directors' report and the external auditor's report. In preparing their financial statements, companies are required to comply with Egyptian Accounting Standards (EAS), which are in conformity with the IAS with some minor exceptions[3]. In the absence of specific EAS standards regarding an accounting practice, IAS must be applied[4]. The CMA reviews financial statements of listed companies and auditors' reports to ensure timely and full compliance with the Egyptian Accounting and Auditing Standards. In the case of non-compliance, the CMA requests the non-compliant company to publish the missing information. If a company fails to comply with this request, the CMA can publish details of the non-compliance. Also, the CMA can suspend or de-list securities of non-compliant companies.

With respect to non-financial disclosures, some are regulated such as share class voting rights, board remuneration, details of board members and senior management. However, it is up to the company to decide on the level of detail that it should reveal to the public. Ethical and environmental disclosures are rare or non-existent (ROSC, 2004).

Although in theory all listed companies are required to disclose information according to EAS/IAS, prior studies on the financial reporting practices of Egyptian listed

---

3 For example, one exception according to ROSC (2002: 11) concerns leasing. All finance leases are treated as operating leases in Egypt although this conflicts with IAS 17; local standards allow this practice because it satisfies legal requirements regarding leasing.
4 Ministerial Decree No. 503 /1997.

companies have shown that non-compliance with disclosure requirements is the norm (see, for example, Abd-Elsalam, 1999; PCSU, 2000; Dahawy et al., 2002; ROSC, 2002; and Fawzy, 2003). They provide some potential explanations for this practice such as unfamiliarity with the IAS and language barriers; both implying that the costs of compliance with disclosure requirements could be high. In addition, prior studies shed some light upon the deep-rooted tendency towards secrecy in the Egyptian culture. This in turn could lead to a negative perception among investors about public disclosure. Investors might question the motives of a company that releases more public information. Furthermore, ROSC (2002) suggests that lack of an effective enforcement policy for non-compliant companies has contributed to the low levels of compliance with mandatory disclosure among listed companies in Egypt. This in turn suggests that non-compliance costs may be negligible.

3. Literature review, hypothesis development and the research model

3.1 Literature review and hypothesis development

With the separation of the ownership of companies' resources from their control, corporate disclosure is a potentially important means of communication between management and outside investors. Demand for corporate disclosure can arise from the information asymmetry problem and agency conflicts between management and outside investors (Healy and Palepu, 2001). Enhanced corporate disclosure is believed to mitigate these problems. It should reduce the uncertainty surrounding future corporate performance and facilitate trading in shares.

More public information is expected to increase stock liquidity by reducing transaction costs and increasing the demand for shares. Moreover, it is expected that increased disclosure will reduce the uncertainty surrounding the estimation of stock returns. Ceteris paribus, the rate of return required by investors to hold the firm's shares will decrease hence the firm's cost of equity capital will fall and firm value will rise. It is also argued that increased disclosure can influence firm value by increasing the actual cash flows that accrue to shareholders as a result of a reduction in agency problems. Increased disclosure is expected to reduce the amount of cash flows that managers and controlling shareholders appropriate for themselves (Lang et al., 2003; Lambert et al., 2007), and lower the costs of monitoring; increased disclosure may therefore increase the cash flow that shareholders receive (Coffee, 1999, Stulz, 1999).

However, providing information to the public is not a costless task. Among the expenses associated with disclosure are the costs of information production and dissemination, the costs of weakened competitiveness as a result of divulging information to competitors, and litigation costs if the company is sued in relation to the information which it disclosed. In some cases, these costs of disclosure may dominate a company's disclosure policy, so any decision to provide more information to the public should be based on a careful cost-benefit analysis (Healy and Palepu, 1993; Botosan, 2000). Thus, we assume that companies evaluate the net benefits of disclosure. The term 'net benefit' refers to a trade off between the costs and benefits associated with disclosure. If the benefits of an increased level of disclosure exceed (are lower than) its associated costs, a positive (negative) net benefit result.

A number of studies shed some light upon other factors that might affect the net benefits of disclosure. For example, studies such as Morris and Shin (2001) and Anctil et al.

(2004) discuss the role of traders' expectations in determining the effects of increased information transparency. In some cases, greater transparency can have unintended consequences. Walther (2004: 197) summarises this argument as follows: 'In situations where individuals do not make decisions in isolation but must coordinate with others, individuals must incorporate their expectations about the beliefs of other decision makers, which leads to strategic uncertainty. Improvements in transparency can increase this strategic uncertainty. Thus, although increased transparency may provide information about economic fundamentals, the increased strategic uncertainty may negate these benefits of more transparent information'.

The empirical literature, even though very limited[5], suggests a positive association between disclosure and firm value. However, Botosan and Plumlee (2002) found that the benefits of increased disclosure are sensitive to the type of disclosure being made; they found positive, negative and no associations between different types of disclosure and the cost of capital. Hence, the effect of disclosure upon firm value is still an empirical issue.

With respect to the Egyptian setting, the benefits and costs associated with voluntary disclosure need to be examined carefully. The benefits of increased disclosure include enhanced liquidity and a lower cost of capital; but the literature generally emphasises that the size of these benefits may be too small to be observed and empirically tested (Botosan, 2000; Amihud and Mendelson, 2000). On the other hand, the costs of increased disclosure could be substantial for two reasons. Firstly, revealing more information voluntarily to the capital market may place the company at a competitive disadvantage, assuming that this information is relevant to rivals. Secondly, prior

---

5 See for example, Patel et al. (2002), Lang et al. (2003), Silva and Alves (2004) and Baek et al. (2004).

studies on the Egyptian market suggest that there is a deep-rooted tendency towards secrecy in the corporate culture of the country. Thus, investors might suspect or misinterpret the intentions of the company when it provides more information to the capital market without any obligation to do so. In this sense, revealing more public information could generate uncertainty about the future prospects of a company and, as a result, lower firm value. Investors may interpret the high levels of voluntary disclosures as an adverse signal about the future value of the company based on insider information known by management. Thus, voluntary disclosure can increase or decrease firm value depending on the complex interplay of a number of possibly conflicting factors. The fundamental consideration is whether the net benefit from increased disclosure is positive or negative. So, our first hypothesis is:

H1: the level of voluntary disclosure is expected to be positively (negatively) associated with firm value when the net benefits of disclosure are positive (negative).

With respect to mandatory disclosure, information is required by statute in the form of laws, by professional regulations in the form of standards, and by the listing rules of stock exchanges. With respect to the stock exchange, the general rule is that companies must comply with regulatory disclosure requirements to maintain a listing. In the case of non-compliance with these requirements, companies would face the costs of de-listing from the stock exchange, the loss of a cheap source of finance, and perhaps damage to its reputation. Hence, from a company's point of view, the trade- off is between the benefits of listing on a stock exchange and the costs of disclosure. Surprisingly, prior studies on the economic consequences of mandatory disclosure are limited, somewhat ambiguous, and mostly focus on the adoption of new regulations.

11

In Egypt, listed companies receive a tax exemption and access to a relatively cheap source of finance while incurring virtually no penalties for non-compliance with mandatory disclosure rules. Hence, a departure[6] from full compliance with mandatory disclosure has been observed over our sample period (see also, for example, Abd-Elsalam, 1999; PCSU, 2000; Dahawy et al., 2002; ROSC, 2002; and Fawzy, 2003). This non-compliance[7] can vary across companies at a point in time, and also within a company over time. We assume that companies evaluate the net benefits of disclosure which equal the benefits of listing on the stock exchange minus the costs of disclosure. Costs of disclosure can be split into non-compliance costs, compliance costs and others.

From a company's point of view, compliance costs include information production and dissemination costs such as expenses incurred when training preparers on the applicable standards. Non-compliance costs[8] include market pressure and administrative penalties from the CMA such as monetary penalties and de-listing costs. However, these non-compliance costs may not be large because the threat of de-listing is rarely implemented and administrative penalties from the CMA rarely enforced. In contrast to developed markets, therefore, listed companies on the Egyptian stock exchange benefit from

6 This departure from full compliance with mandatory disclosure is not unique to Egyptian companies, since it has also been observed in other emerging markets: examples include Nigeria, Hong Kong, Bangladesh, Pakistan, India and Saudi Arabia (Ahmed and Nicholls, 1994; Ali et al., 2004; Naser and Nuseibeh, 2003).

7 If non-compliance costs are negligible, one could treat all disclosure as voluntary. However, we believe that it is still worth distinguishing between the two varieties of disclosure because one could argue that (i) mandatory disclosure is somehow "anticipated" by investors and its presence may signal information to them about company intentions and (ii) mandatory disclosure is more comparable across firms.

8 With respect to market pressure, many shareholders in Egypt are small investors with limited knowledge of market conditions; they tend not to be active, unlike their counterparts in developed markets (Abd-Elsalam, 1999). Furthermore, in the Egyptian context, administrative penalties for non-filers or late filers were virtually non-existent prior to August 2002; the one exception to this generalisation related to de-listing. However, de-listing was rarely used because the number of listed companies was seen as a measure of the success of the stock exchange relative to its international competitors. In addition, de-listing was seen to be more harmful to corporate shareholders rather than a company's management (PCSU, 2000). This in turn means that prior to the issuance of new listing rules on August 2002, non-compliance costs were almost non-existent, while compliance costs were relatively high.

listing regardless of the issue of non-compliance costs with mandatory disclosure. But, if the costs of compliance with mandatory disclosure are relatively high then even though non-compliance costs are negligible or non-existent in these markets, ceteris paribus, non-compliant companies may be better off by not disclosing all the information that is required of a listed firm. In addition, greater compliance with mandatory disclosure requirements by listed companies might be viewed with suspicion by investors. As well as the increased costs associated with such additional mandatory disclosures, investors might perceive that their company was placing itself at a competitive disadvantage relative to its competitors who failed to publish such mandatory details.

In addition, if non-compliance with mandatory disclosure is costless, companies that comply with mandatory disclosure requirements may generate uncertainty about the future direction of the firm from an investor base who recognise secrecy as the norm; this uncertainty might raise the discount rate and lower firm value[9]. Thus, investors may respond to companies that comply with mandatory disclosure requirements as if it were a negative signal. For example, investors may respond negatively to the greater compliance with mandatory disclosure requirements because they believe that such actions by management signal intentions for events such as an equity issue in the future; equity offerings by quoted companies tend to be viewed negatively by the market (Asquith and Mullins, 1986) and often elicit negative share price reactions. For these reasons one might expect a negative association between the level of compliance with mandatory disclosure and firm value in the Egyptian market if the net benefits of such disclosure are negative. However, one could also expect a positive association between

---

[9] This analysis is similar to the uncertain information hypothesis of Brown et al. (1988) where the authors argued that any uncertainty lowers share price below its equilibrium level, since it raises the discount rate applied to future dividends.

mandatory disclosure and firm value when the net benefits are positive because the costs of non-compliance with mandatory disclosure are high[10]. Hence our second hypothesis is:

H2: the level of mandatory disclosure is expected to be positively (negatively) associated with firm value when the net benefits of disclosure are positive (negative).

3.2 The research model

This study examines the relationship between firm value and disclosure. This relationship is examined in two different ways. First, a univariate analysis is undertaken and the correlation coefficients between firm value and disclosure indices are estimated. Second, a multivariate analysis is performed where firm value is regressed on disclosure indices as well as other control variables.

A number of control variables suggested from prior studies are used to explain firm value (see for example: Lang et al., 2003; Healy et al., 1999; Silva and Alves, 2004; Baek et al., 2004). These control variables are asset size, profitability, leverage, growth, risk, and industry type[11]. Relatively large companies (in terms of assets size) are expected to have higher firm values (Berk, 1995). With respect to profitability, it is expected that firm value has a positive correlation with profitability in the Egyptian

---

10 If stiffer penalties for non-disclosure were introduced and all companies published mandatory disclosures, the adverse signalling impact of the more compliant companies might disappear. Thus, the negative impact of increased mandatory disclosure on firm value might be dissipated.

[11] It might have been useful to include a variable for the auditor in the analysis. However, this was not possible. For about 15% of the companies in the sample, no audit report was available to the researchers. In addition, there was insufficient information about the size of (private) auditing firms to construct a variable. Also, about half of our sample companies came from the public business sector and hence were audited by the Central Auditing Organization. Moreover, if state ownership in a private sector company exceeded 25%, it had to be audited by the Central Auditing Organization. So, a lot of our sample firms were audited by the same organization.

context, since it is likely that investors in Egypt pay close attention to profit figures[12].

Also, companies that report higher profit levels could be perceived as higher value companies, since investors expect this level of profits to lead to higher dividends in the future.

With respect to leverage, Lins (2003: 169) controls for debt 'to account for the possibility that creditors are able to lessen managerial agency problems. Since creditors are expected to act as external monitors that play a beneficial governance role in reducing managerial agency problems, a positive correlation between leverage and firm value is expected. With respect to growth, the same argument exists in the Egyptian context as with profitability. Individual shareholders, who are not professional investors, dominate the market. Hence, it is expected that higher growth companies in Egypt could signal fast growing dividends in the future and so a positive correlation between firm value and sales growth might be expected. Finally, as far as industry type is concerned, there seems to be no strong theoretical reason for preferring either a negative or positive correlation between firm value and industry membership, so we leave the coefficient sign to be determined by the data.

These variables, together with their expected coefficient signs, are included in the multiple regression specification as follows[13]:

---

12 Abd-Elsalam (1999: 37) states that: "in one of the very few empirical studies on Egyptian investors, it was suggested that they are more interested in the profit figure than any of the other ratios". This is consistent with results obtained from the survey by Hassan (2006).

13 Another variable used in the literature is risk. With respect to risk, market beta was estimated using weekly rather than daily prices over a five-year period of time using the Case30 index as the proxy for the market. Weekly prices were preferred to monthly prices in order to incorporate as many observations as possible in the analysis, thus improving the reliability of the results. Mid-week prices (Tuesday prices) were used to avoid any abnormal returns associated with the beginning or the end of the week (day of the week effect). To calculate beta, data had to be available for at least 100 observations over a moving five-year period of time (1995-1999, 1996-2000, 1997-2001 and 1998-2002). However, including market beta in the model caused a large reduction in the number of observations. In addition the beta coefficient was not significant, so the results with this risk variable are not included in the current paper.

Firm value = ƒ (asset size (+), profitability (+), leverage (+), growth (+), industry

type (+/-), disclosure (+/-))

Firm value is the natural logarithm of the ratio of market value of equity to book value of equity at the financial year-end. Asset size is the natural logarithm of the ratio of book value of total assets at the financial year-end to book value of equity at the financial year-end. Profitability is the natural logarithm of the ratio of net income to book value of equity at the financial year-end. Leverage is the natural logarithm of the ratio of long-term debt to book value of equity at the financial year-end. Growth is the natural logarithm of the ratio of sales in the current year to sales in the previous year. Industry type is measured as a two-digit dummy variable.

Disclosure is represented here using three disclosure indices: TINDEX, MINDEX and VINDEX. TINDEX is the total disclosure index, which includes both mandatory and voluntary items of information. MINDEX is an index of mandatory disclosure, and VINDEX is an index of voluntary disclosure items. The inclusion and exclusion of a type of disclosure index results in four model specifications. The first examines the association between firm value and TINDEX (Model 1). The second looks at the relationship between firm value and MINDEX as well as VINDEX (Model 2). The third focuses on the relationship between firm value and MINDEX on its own (Model 3). The final model concentrates on the association between firm value and VINDEX on its own (Model 4).

We use the market-to-book ratio as a measure of firm value. This means that we deflate the market value of the firm by the book value of equity and introduce ln (1/book value of equity) as an additional explanatory variable. This variable is an additional proxy to

firm size. Since book value of equity is the denominator of this variable, it is expected that this variable will have a negative association with firm value[14].

4. Data collection and variable measurement

4.1 Data collection and sources

This section describes the sources for the relevant information and the data collection process used in this research. The aim was to collect a complete series of annual reports in their original format for as many quoted non-financial Egyptian companies as possible over the period 1995 to 2002.

The first criterion applied to our sample was to seek out the annual reports of public companies, because one of the aims of this research is to explore the benefits, if any, that widely held listed public companies might obtain from their disclosure policy. Thus, closed companies (family or rarely traded companies[15]) were excluded from the sample. The second criterion was to seek out the annual reports of non-financial listed companies. Financial services companies such as banks and insurance companies were excluded because of their specific financial characteristics, which affect their information disclosure. The CMA in Egypt proved to be the most suitable source for the information required. The electronic archive department, which is part of the CMA's information centre was visited and scans of the original reports of listed companies obtained.

---

14 We would like to thank a referee for this suggestion.

[15] Companies in the sample of the current study are heavily traded companies, since they are traded on average 82% of the days when the exchange is open.

The final sample consists of 80 non-financial listed companies from 13 different industrial sectors over the period 1995 to 2002[16]. This figure was arrived at after a number of refinements to the original sample[17] due to changes in some companies' legal status, changes in some companies' ownership structure and data available. The number of observations per company ranges from one to eight over the period 1995 to 2002. The number of observations in the final sample is 272. Table (1) provides details about the number of observations in the final sample per year and per financial year-end, the number of observations sorted by the companies' legal form, and industry sectors. It shows that a quarter of the sample companies come from the building materials and construction sector. This is not surprising since more than 50 percent of total market capitalization in June 2002 came from only three sectors: utilities, building materials and construction, and financial services.

<Insert Table 1 about here>

Finally, given the existence of both cross-sectional and time series information, we were able to use panel data analysis, which is seldom employed in the accounting literature. This has a number of advantages over traditional cross-sectional or time series data analysis. It usually gives the researcher a larger number of observations, increasing the degrees of freedom and reducing any collinearity problems among explanatory

---

16 This sample is comparable to other studies on the same market. For example the Abd-Elsalam studies (1999; 2003) on the Egyptian market are based on a sample of 72 companies. Hence, our research sample size seems reasonable.

17 There were originally 66 non-financial listed companies about which information was available. These 66 companies consist of 33 public business sector companies, which had obtained a listing on the road to privatisation and 33 privately owned listed companies. However, 12 of the 33 public business sector companies were privatised and changed their legal form from public business sector to private sector companies during the time period being studied. In addition, two private sector companies were merged with other companies. It was decided to treat these 14 companies as new companies once the changes had taken place, thereby avoiding any overlap of data from prior periods. This procedure yielded 80 cross-sections.

variables; hence, estimation efficiency is improved. Moreover, the use of panel data reduces the impact of any omitted variable problem that might arise (Hsiao, 1986: 1-3).

4.2 Variable measurement

4.2.1 Disclosure level

The extent of financial disclosure for Egyptian non-financial listed companies is measured by the disclosure index technique. We examine the existence of a number of items of information in companies' annual reports. The process of constructing the disclosure index involved four main steps. The first step was to select an initial list of items of information that companies might disclose in their annual reports. Given that a departure from full compliance with mandatory disclosure is observed in the Egyptian context, mandatory disclosure forms the basis for this initial list.

We started with a list of items of information drawn from the checklist for the disclosure and transparency requirements of the CMA[18]. In addition, a careful review of the disclosure literature was undertaken to select items of information (not included in the checklist of the CMA) that Egyptian companies might disclose voluntarily. The checklist used by the CIFAR (1995) to evaluate corporate disclosure levels for leading non-financial companies in a number of emerging and developed countries was thought to be a reasonable starting point for the voluntary list. It includes not only some fundamental information that sometimes overlaps with that mandated by the CML but also other voluntary disclosure items. This process led to the inclusion of 115 items of information in the initial list: 70 items from the CMA checklist and 45 items from the CIFAR checklist.

---

18 This list is based on Guidelines Manuals that inform companies issuing financial securities and their auditors of the procedures followed by the CMA when ensuring that companies have complied with disclosure and transparency requirements according to the EAS and the IAS.

Since the initial list of items of information includes some items from the CIFAR checklist, which might be outdated or irrelevant to the Egyptian market, the list was subject to a long process of refinement. This was done through a postal survey[19] to check for the usefulness of items of information included in the initial list for investment decision-making in Egypt. In addition, the list was further revised by using a sample of companies' annual reports to find out what companies did actually disclose. For example, while companies are required to disclose the unpaid amount of capital, companies tend to disclose the paid-up amount of capital. The amended list of items of information was applied to the entire sample of companies and filtered for items of information that were rarely or never disclosed by the sample companies over the research period. To be included in the final list, information had to be disclosed by at least 20 percent of the sampled companies over the period of study. This process led to the elimination of 40 items of information from the original list. It is worth noting that this list of rarely disclosed items of information matches with results from prior reports (ROSC, 2002) and included items such as changes in equity accounts during the year and events after the balance sheet date. The remaining number of items of information (75 items) forms the final list (Appendix 1).

Once the final list of items of information was determined, the third step was to assign a score to each item included in the list. Each item was equally weighted by giving the item of information the value of one if disclosed and the value of zero if not. The total disclosure index is measured as the sum of scores awarded to a particular company in a particular year divided by the maximum number of applicable items (in order not to

---

19 Details of the postal survey are available from the main author upon request.

penalise companies for disclosing clearly non-applicable[20] items of information). Finally, the distinction between the mandatory disclosure index and the voluntary disclosure index is guided by companies' actual practice. Assuming that low compliance with mandatory disclosure can be treated as voluntary disclosure (Firth, 1979; 1984) because more discretion is believed to be exercised over disclosing these items of information, mandatory items of information that showed volatility over time were considered as voluntary disclosure items. Hence two indices were developed from the total index: the mandatory disclosure index[21] (49 items of information), and the voluntary disclosure index (26 items of information)[22].

Once these disclosure indices were created, it was necessary to assess whether they were relatively reliable proxies for the extent of disclosure in order to draw useful inferences from the analysis. We therefore tested for the reliability of the disclosure indices employed in this research using the commonly used measure for internal consistency, namely Cronbach's alpha. It was calculated for each of the disclosure indices (results are not tabulated), and the values were very close to the theoretical range of 0.80 and higher than the value of 0.64 obtained by Botosan (1997). Hence the results support the reliability of the disclosure indices used in the current study as measures of corporate disclosure levels.

---

20 In order to decide whether a particular item of information, for example exports, was applicable for a particular company in a particular year or not, the entire annual report was read to understand the nature of each company's operations and its circumstances.

21 The analysis in this paper was also performed with mandatory disclosures being described as those items of information which are required to be disclosed by the CMA while voluntary disclosures are all other items. This different definition of MINDEX and VINDEX did not change the results reported in the current study.

22 Further details of the technique used to distinguish between mandatory and voluntary disclosure are given in Hassan et al. (2006).

4.2.2 Firm value

The natural logarithm of the ratio of market value of equity to book value of equity[23] (MTBR) is used as a measure of firm value in recent studies (see, for example, Lins, 2003). Basically, the market–to-book ratio (MTBR) shows whether securities are undervalued or overvalued by dividing the market value of outstanding shares by the book value of equity. If the ratio is greater than (less than) one, then the firm is overvalued (undervalued). This term can also be inverted to form the book-to-market ratio. Fama and French (1992) find that the logarithm of the book to market ratio (which is mathematically equal to -ln (MTBR)) is more powerful in terms of the magnitude and the significance of the relationship than the logarithm of market value of equity (as a measure of firm size) in explaining average returns. Moreover, Berk (1995) states that "The logarithm of the ratio of book equity to market equity is, in principle, a better measure of the continuously compounded expected return than is the logarithm of market equity alone". Thus, our empirical analysis uses the market to book ratio as a proxy for firm value rather than the market value of equity alone.

For the purpose of the current study, the market-to-book value ratio is measured in the following way. The market value of equity is measured as the number of outstanding shares at the financial year-end derived from companies' annual reports times the average share price[24] for six months after the financial year-end, in order to ensure that the prices capture accounting information revealed in companies' annual reports. The book value of equity is the book value at the financial year-end. Since this measure for

---

23 Thus none of the sample companies had a negative book value of equity.
24 Since the average of share prices for six months could be affected by extreme prices (for example very high or very low prices), the median of share prices for six months was also used. However, the average and median prices were approximately equivalent, thus it was decided to report results for the average prices for the six-months after the financial year-end in the current paper.

firm value, as well as measures for asset size and leverage, show high skewness and kurtosis, a logarithm transformation was used to reduce the influence of extreme values and to bring the distributions of these variables closer to normality.

Table (2) provides descriptive statistics for the variables. It shows that, on average, listed non-financial Egyptian companies publish 75 percent of the total list of items of disclosure (75 items). They publish 90 percent of the list of mandatory information items (49 items) and 48 percent of the list of voluntary information items (26 items). This suggests that companies tend not to fully comply with mandatory disclosure and that voluntary disclosure is rather limited. These results are comparable to those obtained in the Saudi market (Naser and Nuseibeh, 2003), where the average compliance rates for mandatory and voluntary disclosure were 93 percent and 28 percent respectively.

<Insert Table 2 about here>

5. Data analysis
5.1 Univariate analysis

Since the normality hypothesis is rejected for the majority of variables, a non-parametric correlation test is used to determine the association between firm value and disclosure levels and to check whether collinearity is a problem. The results for the Spearman correlation matrix are presented in Table (3). It shows the correlation between firm value and disclosure levels as well as the correlations for the other explanatory variables. The results show that different types of disclosure have negative although not significant correlations with firm value. However, to draw a firm conclusion about the relationship between firm value and disclosure level, it is advisable to analyse the results from a multiple regression that controls for the influence

23

of other variables affecting firm value. Although ln(1/BVOE) and leverage have no significant correlation with firm value, there is a significant correlation with firm value for the remaining explanatory variables (asset size, profitability, growth and industry type).

<Insert Table 3 about here>

The correlations among the explanatory variables do not indicate a serious collinearity problem, but we test for potential collinearity[25] using the variance inflation factor (VIF) and tolerance coefficients. These are computed for each explanatory variable in the multiple regression models. By regressing each explanatory variable on the remaining explanatory variables in individual multiple regression models (results not reported here), the highest VIF was 1.99 and the lowest tolerance coefficient was 0.502. These results confirm that collinearity is not a problem in the subsequent analysis.

5.2 Multivariate analysis

To provide a more comprehensive analysis of the relationship between disclosure level and firm value, a multivariate analysis is conducted that controls for other variables expected to affect firm value: namely, asset size, profitability, leverage, sales growth and industry type, as well as ln(1/BVOE). The method of estimation[26] used is pooled-

---

25 It is considered that, for a particular explanatory variable, collinearity is not a problem if the VIF for that variable is less than 5 (Groebner et al., 2005, 576). Tolerance is defined as $(1 - R^2)$ for the regression of each explanatory variable on all the other explanatory variables. There are as many tolerance coefficients as there are explanatory variables. The higher the inter-correlation of the explanatory variables, the more the tolerance will approach zero. As a rule of thumb, if tolerance is less than 0.2, then a problem with multicollinearity is indicated. More details are available on the Internet at http://www2.chass.ncsu.edu/garson/pa765/regress.htm.

26 Heteroskedasticity is an issue, given that different sizes of companies are included in the sample. EViews software is used to estimate the models. Using the White heteroskedasticity-consistent standard errors and covariance option, EViews estimates covariances that are robust to general heteroskedasticity. This panel data form of heteroskedasticity is different from pure cross-section heteroskedasticity, since variances within a cross-section are allowed to differ over time.

generalised least squares (GLS), with White heteroskedasticity-consistent standard errors and covariance. We also examine the residuals from the model to check whether the results are sensitive to the existence of outliers, defined here as observations with large, standardized residuals (equal to or more than 3 standard deviations). The residual distributions of the models are very close to the normal distribution, and outliers do not appear to be a problem. There are a number of missing observations for some variables. For example, using the natural logarithm of the ratio of net income to book value of equity as a measure of profitability drops the loss-making companies from the sample[27]. In this case the relevant companies are dropped from the panel data estimation, reducing the number of cross-sectional units from 80 to 60 and the total number of observations from 272 to 191.

Table (4) presents the estimation results for the multivariate analysis. Almost all the control variables are statistically significant at the 1% level, and their coefficients have the expected signs. Growth has a positive but insignificant association with firm value. Leverage has either a negative or positive but insignificant association with firm value. Although we might expect a positive association, ceteris paribus, the estimated relationship is possibly complicated by the presence of risk, which could rise in response to increased leverage and cause firm value to decrease[28]. The results for industry type are negative and significant. It should be noted that the estimation results justify our rationale for the inclusion of an additional proxy for firm size, namely the

---

27 We have checked whether the results are sensitive to the exclusion of loss making firms, but found that they are not.
28 We are unable to control for risk, mainly because it would sharply decrease the number of observations (see fn. 13), but the inclusion of a risk variable for a subset of the sample (results not tabulated) did not change the original results obtained from the analysis.

explanatory variable ln (1/book value of equity), which is highly significant and has a negative association with firm value as expected.

<Insert Table 4 about here>

An analysis of Model (2) reveals that the association between mandatory disclosure and firm value is negative and highly significant; this result is not unexpected within the context of the Egyptian market. We have argued, on the basis of both empirical and theoretical studies, that this result may be the outcome of a rational process based on the trade-off between the benefits and costs associated with disclosure. Costs of compliance with mandatory disclosure could be high in an environment where non-compliance costs were limited or non-existent during the time period investigated, which imply that non-compliant companies were better off. In addition, more compliance with mandatory disclosure might be seen as a negative signal if it indicated that a firm was preparing for an equity issue or other major announcements in the future. This could be particularly relevant, given that there are 35 observations for new share issues in the sample employed in the current study. In addition, about half of the research sample (33 companies) came from companies that were mainly listed for privatisation purposes; in fact, 12 out of these 33 companies were privatised over the time period covered by the current study. This explanation of investors' responses to public disclosure is similar in spirit to the view of Wagenhofer (2004: 26) that shareholders might perceive increased disclosure as the company acting on "superior" information. This perception might cause a change in investor behaviour to avoid being exploited by the firm, whether this fear is justified or not.

The results in Model 2 show a positive association between firm value and voluntary disclosure. This means that the net benefits of voluntary disclosure were positive. This

result supports the argument that voluntary disclosure will take place only if the perceived benefits exceed the perceived costs (Marston and Polei, 2004). Also, it might mean that this type of voluntary information did not carry an adverse signal to the market possibly because good news was being published.

However, there is a lack of individual statistical significance for the voluntary disclosure variable in Model 2. This lack of statistical robustness at the individual level for voluntary disclosure might be a reflection of the complex relationship between voluntary disclosure and firm value that was discussed in our first hypothesis. Such a view emerges from the findings of other studies in this area. For example, Elliott and Jacobson (1994: 87-88) emphasise the interplay of different and conflicting factors. They argue that 'two costs decrease with more informative disclosure: information risk premium and litigation cost, and two increase: information cost (information production and dissemination) and net competitive cost (competitive disadvantages)'. Thus, the net effect is difficult to predict.

Although voluntary disclosure has no significant association with firm value in Model (2), it is significant when considered jointly with mandatory disclosure using the Wald test of joint significance. The result (not tabulated) implies that both measures of disclosure level are jointly significant, so that dropping either of them from the model would lead to a problem of omitted variables. This problem could have affected the sign of voluntary disclosure in Model (4) when the mandatory disclosure index was dropped from the analysis. The result for the total disclosure index shown in Model (1) is not surprising, since it is the sum of both mandatory and voluntary disclosures. This result suggests that total disclosure is negatively associated with firm value; the finding for TINDEX seems to be driven by mandatory disclosures.

27

Finally, we check for the robustness of our estimation results, particularly the coefficient signs on the mandatory and voluntary disclosure variables (Model 2 of Table 4), by specifying and estimating a number of alternative models (results not reported here). These models included other control variables such as the legal form of the company, a dummy variable that takes the value of one if the audit report mentions that auditing has been performed according to the Auditing International Standards and the value of zero if not, year-end and year dummies, and a model proposed by Ohlson (1995) in which the key variables are deflated by the book value of equity[29].   In fact, the results reported in Model 2 of Table 4 for the coefficient signs on mandatory and voluntary disclosure are remarkably robust to these alternative specifications. In all cases, the relationship between firm value and mandatory disclosure remains negative, and the relationship between firm value and voluntary disclosure remains positive. In addition, we re-tested the models reported in Table (4) using the natural logarithms for proxies of disclosure. This specification examines the elasticity of firm value with respect to disclosure; that is a percentage change in firm value for a given percentage change in disclosure. Results (not tabulated) are very similar to all results reported in Table (4) except that the association between voluntary disclosure and firm value (Model 2) becomes significantly positive at the 1% level (one-tailed test). In addition, we have tested Model (2) using cross-sectional analysis only, where we used only one observation per firm per year in the analysis. We were only able to carry out this cross-sectional analysis for seven out of eight years due to missing data. Results for this specification generally support the original results reported here but were not statistically significant.

---

29 We are grateful to a referee for this suggestion.

To summarise, our results indicate that where penalties for non-compliant companies are negligible, increased compliance with mandatory disclosure appears to have a negative association with firm value possibly because other costs associated with increased mandatory disclosure are high. Our results also show that voluntary disclosure has a positive, but insignificant association with firm value. When considered together, however, both variables are jointly significant. These results emphasis that the association between firm value and disclosure is complex and depends on the interplay of a number of factors such as the trade-off between the costs and benefits associated with disclosure, the type of disclosure and the context in which this relationship is examined.

6. Concluding remarks

This research uses panel data analysis to examine empirically the association between mandatory as well as voluntary disclosures and firm value for Egyptian listed companies. After controlling for asset size, profitability, leverage, sales growth and industry type, the estimation results show a highly significant negative association between mandatory disclosure and firm value. Although this appears to be a puzzling result from the traditional perspective of the relationship between firm value and disclosure, we provide a number of theoretical arguments and a range of empirical evidence as to why such an association might arise. The main explanation is that costs associated with mandatory disclosure outweighed the benefits of such disclosure even though penalties for non-compliance were negligible in the Egyptian setting. One policy recommendation is that stiffer penalties should accompany mandatory disclosure requirements. Such penalties might encourage greater compliance with mandatory

disclosure requirements and avoid these disclosures being seen as an adverse signal by outside investors.

The regression results show a (weaker) positive relationship between voluntary disclosure and firm value. This result conforms to the traditional view that more information adds value to companies. Although the relationship is not statistically significant on an individual basis, it is jointly significant with mandatory disclosure.

This study is one of the first investigations to examine the value of voluntary and mandatory disclosure in an emerging capital market; however, it has a number of limitations. One potential limitation of studies using disclosure indices to investigate disclosure levels is that the results are only valid to the extent that the disclosure index used is appropriate. The selection of the items included in the disclosure index, and the classification into mandatory and voluntary disclosure indices, inevitably involves some degree of judgement and subjectivity. Although we have tried to diminish such subjectivity it cannot be removed entirely. Also, due to missing data we were unable to test for fixed effects in our panel data analysis. Another limitation is that the research sample is not randomly selected. This is due to the difficulty of gathering data in an emerging country; hence availability of data limits our ability to select a random sample.

Further research could take a number of directions. One fruitful extension might be to re-examine the value of both mandatory and voluntary disclosure after the introduction of the new listing rules, which took place in August 2002. Specifically, it would be useful to know whether the new listing rules have led to any improvements in the level of compliance with mandatory disclosure and whether this in turn led to increases, if any, in the value-relevance of such disclosures. Another extension of this study would

be to examine the implications of applying new accounting standards to the cost of capital and firm value. For example, to test whether the implementation of the International Financial Reporting Standards (IFRS) for UK listed companies lead to any reductions in their cost of capital. Other proxies for disclosure quality could also be used, such as interim reports, investor relations and management forecasts. Finally, it might be instructive to conduct a comparative study among a number of different countries in the MENA region, which apply the IFRS but with different levels of enforcement policies, in order to determine the generality of our results from the Egyptian context.

Table (1)

Panel A: Number of observations in the final sample sorted by financial year-end

	1995	1996	1997	1998	1999	2000	2001	2002	Sum
December	2	3	2	9	14	14	22	0	66
June	7	19	36	40	35	26	21	22	206
Sum	9	22	38	49	49	40	43	22	272

Panel B: Number of observations in the final sample sorted by companies' legal form

	1995	1996	1997	1998	1999	2000	2001	2002	Sum
Private	2	4	18	29	31	27	30	9	150
Public	7	18	20	20	18	13	13	13	122
Sum	9	22	38	49	49	40	43	22	272

Panel C: Final sample companies by industry sector

Industry sector	N
Electrical Equipment and Engineering	3
Housing and Real Estate	7
Food and Beverage	7
Agriculture and Fishing	3
Consumer and Household Goods	2
Health and Pharmaceuticals	9
Chemicals	9
Mills and Storage	8
Textiles and Clothing	7
Entertainment	2
Building Materials and Construction	20
Retailers	1
Paper, Packaging and Plastics	2
Total	80

N: number of companies in each sector

Table (2) Descriptive statistics - individual samples

MTBR: the ratio of the market value of equity to book value of equity, where market value of equity is the number of outstanding shares times the average closing prices for six months after the financial year-end, and the book value of equity (BVOE) is the book value at financial year-end; Asset size: the natural logarithm of book value of total assets at financial year-end divided by the book value of equity at financial year-end, Profitability: the natural logarithm of the ratio of net income to book value of equity at financial year-end; Leverage: the natural logarithm of the ratio of long-term debt to book value of equity at financial year-end; Growth: the natural logarithm of the ratio of sales in the current year divided by sales in the previous year (ln(sales/sales(-1)); TINDEX: the total index including both mandatory and voluntary items of information; MINDEX: the mandatory disclosure index; VINDEX: the voluntary disclosure index.

Variables	Mean	Median	Maximum	Minimum	Skewness	Kurtosis
MTBR	2.606	1.562	34.665	0.094	4.777	33.128
ln (MTBR)	0.487	0.446	3.546	-2.362	0.312	3.505
ln(1/BVOE)	-18.565	-18.506	-15.578	-21.331	-0.190	2.886
Asset Size	1.076	0.963	4.421	-0.082	1.160	5.902
Profitability	-1.541	-1.342	0.335	-9.810	-3.654	24.975
Leverage	-1.885	-1.649	4.026	-7.335	-0.474	3.416
Growth	-0.008	0.027	2.361	-2.964	-1.146	18.837
TINDEX	0.754	0.781	0.947	0.356	-1.251	4.405
MINDEX	0.897	0.918	1.000	0.438	-1.823	6.651
VINDEX	0.482	0.520	0.846	0.000	-0.493	2.498

Table (3) Spearman correlation coefficients

ln(MTBR): the natural logarithm of the ratio of the market value of equity to book value of equity (BVOE), where market value of equity is the number of outstanding shares times the average closing prices for six months after the financial year-end, and the BVOE is the book value at financial year-end; Asset size: the natural logarithm of book value of total assets at the financial year-end divided by the BVOE, Profitability: the natural logarithm of the ratio of net income to book value of equity at financial year-end; Leverage: the natural logarithm of the ratio of long-term debt to book value of equity at financial year-end; Growth: the natural logarithm of the ratio of sales in the current year divided by sales in the previous year (ln(sales/sales(-1)); Industry type: measured by a two-digit dummy variable; TINDEX: the total index including both mandatory and voluntary items of information ; MINDEX: the mandatory disclosure index; VINDEX: the voluntary disclosure index.

	ln(1/BVOE)	Asset Size	Profitability	Leverage	Growth	Industry type	TINDEX	MINDEX	VINDEX
ln (MTBR)	-0.059	0.221**	0.730**	-0.056	0.223**	-0.121*	-0.072	-0.091	-0.056
	(0.165)	(0.000)	(0.000)	(0.203)	(0.000)	(0.023)	(0.118)	(0.068)	(0.178)
ln(1/BVOE)		0.406**	0.057	-0.026	-0.114*	-0.229**	0.002	0.125*	-0.089
		(0.000)	(0.154)	(0.328)	(0.034)	(0.000)	(0.484)	(0.020)	(0.071)
Asset Size			0.263**	0.435**	-0.088	-0.113*	-0.036	-0.019	-0.066
			(0.000)	(0.000)	(0.079)	(0.017)	(0.278)	(0.375)	(0.139)
Profitability				-0.028	0.169**	-0.128*	-0.008	-0.010	-0.031
				(0.323)	(0.004)	(0.011)	(0.450)	(0.439)	(0.312)
Leverage					-0.019	0.181**	-0.007	-0.084	0.050
					(0.390)	(0.001)	(0.456)	(0.106)	(0.231)
Growth						0.077	-0.218**	-0.167**	-0.200**
						(0.110)	(0.000)	(0.005)	(0.001)
Industry Type							-0.104*	-0.091	-0.085
							(0.043)	(0.066)	(0.082)
TINDEX								0.839**	0.900**
								(0.000)	(0.000)
MINDEX									0.554**
									(0.000)

Values in parentheses are probabilities of significance. ** Significant at 1% level (one-tailed). * Significant at 5% level (one-tailed).

Table (4) Disclosure levels and firm value: multivariate results.

Dependent variable: ln (MTBR)
Included observations over time: 8
Number of cross-sections used: 60
Total panel (unbalanced) observations: 191

ln(MTBR): the natural logarithm of the ratio of the market value of equity to book value of equity, where market value of equity is the number of outstanding shares times the average closing prices for six months after the financial year-end and the book value of equity (BVOE) is the book value at financial year-end; Asset size: the natural logarithm of book value of total assets at financial year-end divided by the book value of equity at financial year-end; Profitability: the natural logarithm of the ratio of net income to book value of equity at financial year-end; Leverage: the natural logarithm of the ratio of long-term debt to book value of equity at financial year-end; Growth: the natural logarithm of the ratio of sales in the current year divided by sales in the previous year (ln(sales/sales(-1)); Industry type: measured as a two-digit dummy variable; TINDEX: the total index including both mandatory and voluntary items of information; MINDEX: the mandatory disclosure index; VINDEX: the voluntary disclosure index.

Variable	Model (1)	Model (2)	Model (3)	Model (4)
Constant	-2.358**	-1.465**	-1.510**	-3.329**
	(-4.828)	(-3.619)	(-3.604)	(-9.483)
Ln (1/BVOE)	-0.215**	-0.202**	-0.201**	-0.239**
	(-11.664)	(-15.810)	(-13.618)	(-17.408)
Asset Size	0.630**	0.651**	0.635**	0.642**
	(14.006)	(16.334)	(20.917)	(15.007)
Profitability	0.415**	0.401**	0.410**	0.340**
	(5.883)	(6.633)	(6.718)	(6.602)
Leverage	0.009	0.000	0.004	-0.002
	(0.687)	(-0.005)	(0.307)	(-0.219)
Growth	0.104	0.104	0.108	0.087
	(1.075)	(1.111)	(1.155)	(0.869)
Industry Type	-0.029**	-0.024**	-0.026**	-0.030**
	(-4.745)	(-4.239)	(-4.573)	(-6.291)
TINDEX	-0.824**			
	(-6.814)			
MINDEX		-1.597**	-1.432**	
		(-4.726)	(-7.224)	
VINDEX		0.088		-0.301**
		(0.746)		(-5.750)
Weighted statistics				
$\overline{R}^2$	0.753	0.815	0.788	0.873
S. E. of regression	0.663	0.662	0.658	0.671
Un-weighted statistics				
$\overline{R}^2$	0.355	0.372	0.371	0.343
S. E. of regression	0.691	0.682	0.683	0.698

Values in parentheses are probabilities of significance. ** Significant at 1% level (two-tailed).
* Significant at 5% level (two-tailed). One-step weighting matrix. White heteroskedasticity-consistent standard errors and covariance. Cross sections without valid observations dropped.

References

Abd-Elsalam, 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. PhD Thesis, Heriot-Watt University, Edinburgh, UK

Abd-Elsalam, O. H., Weetman, P., 2003, Introducing international accounting standards to an emerging capital market: relative familiarity and language effect in Egypt. Journal of International Accounting, Auditing and Taxation, 12(1), 63-84.

Ahmed, K., Nicholls, D., 1994. The impact of non-financial company characteristics on mandatory disclosure compliance in developing countries: the case of Bangladesh. International Journal of Accounting 29, 62-77.

Ali, M. J., Ahmed, K., Henry, D., 2004. Disclosure compliance with national accounting standards by listed companies in South Asia. Accounting and Business Research 34 (3), 183-199.

Amihud, Y., Mendelson, H., 2000. The liquidity route to a lower cost of capital. Journal of Applied Corporate Finance 12 (4), 8-25.

Anctil, R. M., Dickhaut, J., Kanodia, C. Shapiro, B., 2004. Information transparency and coordination failure: theory and experiment. Journal of Accounting Research 42 (2), 159-195.

Asquith, P. and Mullins, D., 1986. Equity issues and offering dilution. Journal of Financial Economics. 15 (1-2), 61-89.

Azab, B. I., 2002. The Performance of the Egyptian Stock Market. Masters Dissertation, Birmingham Business School, University of Birmingham (September).

Baek, J., Kang J., Park, K.S., 2004. Corporate governance and firm value: evidence from the Korean financial crisis. Journal of Financial Economics 71 (2), 265-313.

Berk, J. B., 1995. A critique of size-related anomalies. Review of Financial Studies 8 (2), 275-286.

Botosan, C. A., 1997. Disclosure level and the cost of equity capital. Accounting Review 72 (3), 323-349.

Botosan, C. A., 2000. Evidence that greater disclosure lowers the cost of equity capital. Journal of Applied Corporate Finance 12 (4), 60-69.

Botosan, C. A., Plumlee, M.A., 2002. A re-examination of disclosure level and the expected cost of equity capital. Journal of Accounting Research 40 (1), 21-40.

Brown, K. C., Harlow, W. V. and Tinic, S. M., 1988. Risk aversion, uncertain information, and market efficiency. Journal of Financial Economics 22 (2), 355-385.

Bushee, B. J. and Leuz, C., 2005. Economic consequences of SEC disclosure regulation: evidence from the OTC bulletin board. Journal of Accounting and Economics 39 (2), 233–264.

Cairo and Alexandria Stock Exchanges Fact Book (CASE Fact Book), 2002.

Carmines, E.G., Zeller, R.A., 1991. Reliability and Validity Assessment. Sage, London.

Center for International Financial Analysis and Research (CIFAR), 1995. International Accounting and Auditing Trends. Fourth edition, (edited by V. Bavishi) Princeton, NJ.

Coffee, J. C., 1999. The Future as History: The Prospects for Global Convergence in Corporate Governance and Its Implications. (Working Paper 144, Columbia Law School Center for Law and Economic Studies), (February), available on the Internet at http://ssrn.com/abstract=142833

Coy, D., Dixon, K., 2004. The public accountability index: crafting a parametric disclosure index for annual reports. British Accounting Review 36 (1), 79-106.

Dahawy, K., Merino, B.D., Conover, T.L., 2002 The conflict between IAS disclosure requirements and the secretive culture in Egypt. Advances in International Accounting 15, 203-228.

Doidge, C., Karolyi, G.A., Stulz, R.M., 2004. Why are foreign firms listed in the U.S. worth more? Journal of Financial Economics 71, 205-238.

Elliott, R. K., Jacobson, P.D., 1994. Commentary: costs and benefits of business information disclosure. Accounting Horizons 8 (4), 80-96.

Fama, E. F., French, K. R., 1992. The cross-section of expected stock returns. Journal of Finance XLVII (2), 427-465.

Fawzy, S., 2003. The evaluation of corporate governance principles in Egypt. The Egyptian Centre for Economic Studies (ECES), *Working Paper* (82), In Arabic.

Firth, M., 1979. The impact of size, stock market listing, and auditors on voluntary disclosure in corporate annual reports. Accounting and Business Research (Autumn), 273-280.

Firth, M., 1984. The extent of voluntary disclosure in corporate annual reports and its association with security risk measures. Applied Economics 16(2), 269-277.

Fishman, M., Hagerty, K., 1989. Disclosure decisions by firms and the competition for price efficiency. Journal of Finance 44 (3), 633-646.

Groebner, D. F., Shannon, P. W., Fry, P. C., Smith, K. D., 2005. Business Statistics- A Decision-making Approach. International edition, Pearson Prentice Hall, New Jersey.

Gujarati, D. N., 2003. Basic Econometrics. Fourth edition, McGraw-Hill, New York.

Hail, L., 2002. The impact of voluntary corporate disclosures on the ex-ante cost of capital for Swiss firms. European Accounting Review 11 (4), 741-773.

Hassan, O.A.G., 2006. The Economic Consequences of Increased Disclosure in the Egyptian Emerging Capital Market. PhD Thesis, University of Abertay Dundee, UK.

Hassan, O.A.G., Giorgioni, G., Romilly, P., 2006. The extent of financial disclosure and its determinants in an emerging capital market: the case of Egypt. International Journal of Accounting, Auditing and Performance Evaluation 3 (1), 41-67.

Healy, P. M., Palepu, K. G., 1993. The effect of firms' financial disclosure strategies on stock prices. Accounting Horizons 7 (1), 1-11.

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

Healy, P. M., Hutton, A. P., Palepu, K.G., 1999. Stock performance and intermediation changes surrounding sustained increases in disclosure. Contemporary Accounting Research 16 (3), 485-520.

Hsiao, C., 1986. Analysis of Panel Data. Cambridge University Press, Cambridge.

Lambert, R. A., Leuz, C., Verrecchia, R. E., 2007. Accounting information, disclosure, and the cost of capital. Journal of Accounting Research 45(2), 385-420.

Lang, M. H., Lins, K. V., Miller, D., 2003. ADRs, analysts, and accuracy: does cross listing in the U.S. improve a firm's information environment and increase market value? Journal of Accounting Research 41 (2), 317-345.

Leuz, C., Verrecchia, R. E., 2000. The economic consequences of increased disclosure. Journal of Accounting Research 38, (Supplement), 91-124.

Lewellen, W. G., Badrinath, S. G., 1997. On the measurement of Tobin's q. Journal of Financial Economics 44 (1), 77-122.

Lins, K. V., 2003. Equity ownership and firm value in emerging markets. Journal of Financial and Quantitative Analysis 38 (1), 159-184.

Lo, K., 2003. Economic consequences of regulated changes in disclosure: the case of executive compensation. Journal of Accounting and Economics 35 (3), 285-314.

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

Marston, C.L., Robson, P., 1997. Financial reporting in India: changes in disclosure over the period 1982 to 1990. Asia-Pacific Journal of Accounting 4(1), 109-139.

Morris, S., Shin, H. S., 2001. Coordination risk and the price of debt. (Working Paper), available on the internet at http://www.nuff.ox.ac.uk/users/Shin/pdf/sys2.pdf

Naser, K., Nuseibeh, R., 2003. Quality of financial reporting: evidence from the listed Saudi non-financial companies. International Journal of Accounting 38, 41-69.

Patel. S.A., Balic, A., Bwakira, L., 2002. Measuring transparency and disclosure at firm-level in emerging markets. Emerging Markets Review 3, 325-337.

Privatization Coordination Support Unit (PCSU), 2000. The Corporate Governance Policy Framework in Egypt – a Special Study, http://www.carana.com/pcsu/studies/Final.pdf, last accessed on 9th May 2005.

Report on the Observance of Standards and Codes (ROSC), Accounting and Auditing, 2002. Egypt, http://www.worldbank.org/ifa/egyrosc_aa.pdf, last accessed on 21st July 2005.

Report on the Observance of Standards and Codes (ROSC), Corporate Governance Country Assessment, 2004. Egypt, http://www.worldbank.org/ifa/rosc_cg_egyp2.pdf, last accessed on 21st July 2005.

Silva, W.M., Alves, L.A.L., 2004. The voluntary disclosure of financial information on the internet and the firm value effect in companies across Latin America. (Working Paper,

Universidad Navarra Barcelona), 13th International Symposium on Ethics, Business and Society, (January), available on the internet at http://ssrn.com/abstract=493805.

Stulz, R. M., 1999. Globalization of equity markets and the cost of capital. Journal of Applied Corporate Finance 12, 8-25.

Wagenhofer, A., 2004. Accountng and Economics: what we learn from analytical models in financial accounting and reporting. In Leuz, C., Pfaff, D. and Hopwood, A. (eds.) The Economics and Politics of Accounting. OUP, Oxford.

Walther, B.R., 2004. Discussion of information transparency and coordination failure: theory and experiment. Journal of Accounting Research 42 (2), 197-205.

Welker, M., 1995. Disclosure policy, information asymmetry, and liquidity in equity markets. Contemporary Accounting Research 11 (2), 801-827.

Appendix: List of items of information included in the disclosure indices.

Groups of information	Mandatory items of information	Voluntary items of information
Group A: general information	Company name. Company legal status. Purpose of the company's activity. The period covered by financial statement Comparative financial statements Board of directors' report.	Address, telephone, fax. The currency used for the preparation of financial statements. List of board members. Number of employees. Business segment.
Group B: income statement	Sales or turnover Credit interest. Non-operating revenues. Cost of good sold. Selling general and administrative expenses. Operating income. Interest expense. Income tax expense. Non-operating expenses Depreciation & amortization expenses. Net income.	Foreign exchange gains or losses. Effect of transactions with related parties: holding, subsidiary, and associated companies
Group C: balance sheet	Classification of assets to long-term assets and current assets. Classification of liabilities to long-term liabilities and short-term liabilities. Owners' equity separated from liabilities. Separation of reserves and retained earnings. Cash and cash equivalents. Inventories reported. Accounts receivables. Classification of other receivables. Investment in each subsidiary & associated company. Other investments and their market values if different from book value. Investments in projects under construction. The value of each item of fixed assets and its accumulated depreciation.	Items and values of intangible assets. Restrictions on ownership of assets.

Groups of information	Mandatory items of information	Voluntary items of information
Group C: balance sheet (continued)	Total assets can be derived. Classification of short-term liabilities. Classification of long-term liabilities. Classification of provisions. Number of issued shares and par value per share. The paid amount of capital. Classification of reserves. Retained earnings.	
Group D: cash flow statement	Main items of cash inflow from different activities. Main items of cash outflow from different activities. Net cash flow from different activities. Non-cash investment and finance transactions disclosed separately. Breakdown of cash & cash equivalents.	Disclosing the necessary reconciliation of net income when the indirect method is used. Cash flow related to interests, dividends, and extraordinary items disclosed separately. Cash outflow for taxes.
Group E: accounting policies	Accounting standards. Inventory physical count & valuation.	Financial statements cost basis. Taxation. Foreign currency transaction method. Foreign currency transaction gains or losses. Treatment of investments. Revenue recognition basis
Group F: stockholders' information	Earnings distribution statement. Total dividends.	Earnings per share Total dividends. Dividends per share. Composition of shareholdings. Significant shareholders.
Group G: supplementary information	Notes to accounts. Remuneration of board of director. Auditor's report	Earning per share numerator. Earnings per share denominator. Exports. Financial ratios disclosed.