

# Accounting and stock market effects of international accounting standards adoption in an emerging economy

Mohamed A. Elbannan

Published online: 20 April 2010  
© Springer Science+Business Media, LLC 2010

**Abstract** This study examines the impact of the mandatory adoption of the 1997 and 2006 Egyptian accounting standards on earnings quality and firm valuation. Extant research finds that IAS-based standards have positive effects on financial statement attributes (e.g., earnings management) and capital market-related variables (e.g., firm valuation) in some countries, and negative or neutral effects in others. Research conducted in this area on emerging markets is scant, and none in Egypt, which has adopted in 1997 an IAS-based standards (later revised twice in 2002 and 2006). Using a sample of Egyptian listed firms around the time of introducing the 1997 and 2006 EAS versions, I find insignificant empirical evidence that earnings management decreases post adoption of each of the EAS versions under investigation. Additionally, I find that firm valuation (Tobin's  $q$ ) was significantly negatively affected by both EAS versions under investigation in this study. I attribute these results to the lack of compliance by financial statement preparers, improper regulatory enforcement mechanisms, the poor accounting infrastructure, and the inadequate practitioner training, claimed by prior literature.

**Keywords** International accounting standards · International financial reporting standards · Earnings quality · Tobin's  $q$  · Accruals · Emerging markets · Egypt

**JEL Classification** M41 · F21

## 1 Introduction

This study examines the impact of the mandatory adoption of the 1997 and 2006 versions of the Egyptian Accounting Standards (EAS) on earnings quality and firm valuation. The set of International Accounting Standards (IAS) are being issued since 1973 by the

---

M. A. Elbannan (✉)

Department of Accounting, Faculty of Commerce, Cairo University, Orman, Giza 12613, Egypt  
e-mail: mohamed.elbannan@cu.edu.eg; melbannan@yahoo.com

International Accounting Standards Committee (IASC), which has been replaced in 2001 by the International Accounting Standards Board (IASB) that issues International Financial Reporting Standards (IFRS).<sup>1</sup> The primary goal of the IASC and its successor IASB is to develop an internationally acceptable set of high quality financial reporting standards (Barth et al. 2007b). These bodies aim at promoting the harmonization of accounting standards worldwide, and allowing developing countries with limited institutional accounting infrastructure to adopt a consistent set of high quality standards.

While researchers are still debating the expected economic consequences of mandatory IAS reporting (see Daske et al. 2007), IAS have gradually gained acceptance among accounting regulators worldwide. In 2000, International Organization of Securities Commissions (IOSCO) recommended that the world's securities exchange regulators permit foreign issuers to use IAS for foreign firms seeking listing on domestic exchanges (IOSCO 2000). As of 2005, almost all publicly listed companies in Europe are required to prepare IAS-based financial statements. Recently, the US Securities and Exchange Commission (SEC) passed a regulation that allows foreign companies to file with the SEC IAS-based financial statements. This latest decision is considered a breakthrough for the IASB.

For a developing country, like Egypt, the level of investment and economic activity hinges upon investor confidence in the prevailing investment environment. Egypt has embarked on an ambitious economic reform plan since the early 1990s. To ensure the success of the reform plan, the government has decided to adopt a modified version of IAS to represent domestic Egyptian GAAP. The first EAS were passed by a Ministerial Decree in 1997, followed by two major revisions in 2002 and 2006. Issuing these IAS-based standards aims at enhancing the transparency and usefulness of financial statements, bolstering investor confidence in the credibility of Egyptian financial reporting, and increasing the level of investment in the economy.

Despite the important role financial accounting standards play in achieving economic goals and transferring resources to their best use in the economy, no prior research attempted to measure the differential impact of the adoption of the IAS-based accounting standards in Egypt. Studying this impact would enable regulators in Egypt to gauge the effectiveness of the financial reporting system in place (e.g., due diligence for standards preparation, level of practitioners' training, strength of enforcement mechanisms, auditor qualifications, etc.). This study fills the gap in the literature by assessing the financial statement effects and the stock market reaction to the adoption of the EAS 1997 and 2006 versions.<sup>2</sup>

There are multiple implications to the findings from this paper. Studying the impact would enable regulators in Egypt to gauge the effectiveness of the financial reporting system in place (e.g., due diligence for standards preparation, practitioners' training, enforcement mechanisms, auditor qualifications, etc.). Additionally, the results should be useful to regulators in streamlining the multitude of Egyptian investment laws designed to motivate investment activity. If results indicate that EAS have a positive impact on earnings quality, then it will provide positive reinforcement to an important mechanism of the free market economy adopted by Egypt. Conversely, if results point to a negative

<sup>1</sup> For the sake of enhancing the readability of the paper, I refer to both the International Accounting Standards (issued before the year 2001) and the International Financial Reporting Standards (issued 2001 and after) as IAS.

<sup>2</sup> I do not measure the effectiveness of the 2002 EAS version because it is outside the scope of this study, which aims at measuring the impact of the first official IAS-based standards in Egypt (the 1997 EAS) and the most recent, and hence most relevant, standards (2006 standards). It is unrelated to the research questions sought by this study to examine the impact of the 2002 EAS.

impact, then the Egyptian accounting community needs to look at causes behind the failure of the standards and suggest alternatives. Additionally, the impact on market valuation should help the Capital Markets Authority (CMA) and other regulators judge the perceived usefulness of the IAS-based financial statements from a user perspective.

This study extends the literature in at least three areas of research. First, it provides additional perspectives to the international accounting standards literature from an emerging economy regarding the financial statement and market impact of the adoption of these standards. Empirical evidence from Middle Eastern and African countries is scant. Second, this study is the first to extend the earnings quality literature by exploring this concept using an Egyptian sample. It provides evidence that is consistent with extant international research about the impact of accounting standards on earnings quality. Finally, this study contributes to the firm valuation literature by employing the Tobin's  $q$  ratio in assessing the impact of standards adoption in an emerging economy setting.

I follow prior research in assessing earnings quality by measuring the level of earnings management and timely loss recognition pre- and post-adoption of the 1997 and 2006 EAS standards. The sample consists of 153 (141) firms listed on the Egyptian stock exchange for the 1997 (2006) analysis. Financial statement data were obtained from *Kompass Egypt* database and firms' financial statement, while share price information was obtained from the CMA Bulletins.

Prior literature points to the fact that IAS reduces the set of allowable accounting treatments and thereby decreases management's ability to manipulate earnings. Consistent with this literature, I find insignificant evidence that earnings management decreases post adoption of each of the EAS versions under investigation. However, there are several competing reasons behind the insignificant results. Experts point at weaknesses in the infrastructure of the accounting profession as well as lack of serious enforcement measures by regulatory agencies, as primary reasons for not observing a conclusive improvement in the earnings quality of Egyptian firms. Research cites weak accounting institutional infrastructure, poor training, language barriers, and fragile enforcement mechanisms challenges currently facing the Egyptian accounting and investment community (World Bank 2002). Additionally, Tawfik (2006) argues that Egypt lacks the proper institutional infrastructure to generate, monitor, and enforce accounting standards. The aggregate effect of these factors is a dilution of the impact of the IAS-based standards on earnings quality.

Additionally, the findings indicate that firm market valuation has been affected by both EAS versions under investigation in this study. Tobin's  $q$ , the proxy for firm valuation, reflects market-to-book ratio, and changes in this variable reflect market expectations regarding firm growth potential. Results show that Tobin's  $q$  is significantly negatively affected by the adoption of EAS 1997 and 2006. This significantly negative relation may have been caused however, by the enlarging impact IAS-based standards have on the book value of equity, resulting in a downward bias on Tobin's  $q$ . The negative relation may also be a result of unfavorable market perception of the impact of the new (or modified) IAS-based EAS on firm earnings. Alternatively, it may be a result of confounding environmental variables that were not specified in the model.

The study is organized as follows. Section 2 includes the conceptual framework for the study, a review of relevant prior studies, and an analysis of the current Egyptian accounting environment. Hypotheses development is introduced in Sect. 3, culminating in the study hypotheses. Section 4 describes the research methodology, while Sect. 5 reviews the empirical results. Finally, discussion of results concludes the study.

## 2 Conceptual framework and related literature

Regulators have long recognized the importance of financial reporting to the development and long-term stability of capital markets. High quality financial reporting standards contribute to the liquidity of a country's capital market and hence to the effectiveness of resource allocation in an economy (Levitt 1998). Reporting quality refers to the extent to which financial reports of a company communicate its underlying economic state and its performance during the period of measurement in the "representationally faithful" manner defined in SFAC 2. The focus of financial reporting has shifted gradually from providing information for scorekeeping purposes to providing information for estimating a firm's future stream of expected cash flows.

### 2.1 Information asymmetry and earnings quality

Principal-agent relationships result in information asymmetry between managers and parties contracting with the firm, including shareholders, lenders, suppliers, customers, and employees, creating the need for transparent financial reporting. Ball (2001) argues that an efficient system of public financial reporting and disclosure reduces information asymmetry. SFAC 1 states that, "the primary focus of financial reporting is information about an enterprise performance provided by measures of earnings and its components" (FASB 1978). This assertion is rooted in a belief that the use of accruals allows more accurate prediction of future firm value than cash flows (Barth et al. 2001; Pae 2005). Since earnings basically consists of accounting accruals plus cash flows from operations, the usefulness of earnings for valuation necessarily depends on the quality of accruals (Bhattacharya et al. 2009).

Previous research supports this assertion by finding that the different accrual components (e.g., changes in accounts receivable, depreciation, etc.) reflect important information relating to future cash flows (Barth et al. 2001). Evidence from early market studies suggests an association between accounting earnings and stock prices, and that stock price changes for a given period are associated with the sign and magnitude of unexpected earnings for that period (Ball and Brown 1968). Since then, accounting studies continue to investigate possible effects of this association. One effect is that managers became fixated on their earnings figures more than ever, since so much depends on them. This fixation might have contributed to the recent practices of income manipulation in public firms. In an emerging economy setting, the lack of transparent reporting is a major problem impeding efficient investment and economic resource allocation (Bhattacharya et al. 2003; Hail and Leuz 2006). Principal-agent conflicts are exacerbated in these markets, where cost of capital may be excessively high and profit sharing allocated in a less than optimal ratio between principal and agent (Steier 2009). Lack of transparent financial reporting is thus an important issue for emerging markets.

One aspect of financial reporting quality is earnings quality, the focus of this study. Although earnings quality is well researched, there is no widely accepted conceptual or operational definition for the construct (Schipper and Vincent 2003). I follow Schipper and Vincent (2003) in defining earnings quality as the extent to which reported earnings capture the Hicksian notion of income, which represents change in total wealth, not just cash flow. It is concerned with a firm's treatment of accounting measurement and disclosure issues, such as determination of the level of accruals and the improper classification of assets and obligations. Compared to other accounting measures,

reported earnings was repeatedly found to contain superior information useful for firm valuation (Liu et al. 2002) and for explaining differing levels of security returns (Francis et al. 2003). Further, financial markets and contractual parties react positively to earnings quality (Ball et al. 2008; Cahan et al. 2009; Cormier et al. 2009). Expectedly, firms manage earnings to meet targets and analyst expectations in order to avoid negative market surprises (Ball and Shivakumar 2005). Low quality earnings reduces the efficiency of resource allocation and leads to suboptimal wealth transfers (Barragato and Markelevich 2008).

Studies define and measure earnings quality attributes in a manner consistent with their research objectives. There are a variety of earnings quality attributes in the literature, e.g., earnings persistence and predictability, but that mostly require market data to compute. Such data is not readily available for Egyptian firms for the earliest of the periods under study. Therefore, I measure earnings quality using earnings management and timely loss recognition, which require financial statement data. In the following paragraphs, I review and critique these attributes in this study.

### *2.1.1 Earnings management*

Researchers relate earnings quality to the extent to which accounting information has been managed. Two main perspectives to earnings management emerge: private information view and opportunistic view (Jiambalvo 1996). Both perspectives are based on an implicit recognition of the information asymmetry between management and investors. The private information (signaling) view argues that managers use the flexibility built in GAAP to signal private information to investors while the opportunistic view argues that managers manage earnings to maximize their expected utility. Barth et al. (2007b) believe however, that limitations placed on management discretion have a greater effect under the opportunistic view than under the private information view.

Under this opportunistic view, earnings management has been defined as, “the purposeful intervention in the external financial reporting process, with the intent of obtaining some private gain” (Schipper 1989). Manipulating discretionary accruals and shifting loss/gain recognition to current or future periods are two means of earnings management (e.g., Lim et al. 2008). Studies suggest that the higher the degree of correspondence between earnings and cash flows, the higher the degree to which earnings reflect underlying operating fundamentals (Barragato and Markelevich 2008; Francis et al. 2003); and the more smoothed and predictable earnings are, the higher the quality of earnings (Francis et al. 2004). Experts warn that earnings management is a threat to financial reporting integrity that may lead to adverse effects on the attractiveness of capital markets (Levitt 1998).

However, earnings management studies are criticized for the use of misspecified models, biased measures, and lack of appropriate controls (Ball and Shivakumar 2008). Most studies use variations of the modified Jones (1991) or the Dechow and Dichev (2002) models. To avoid these criticisms, I follow Barth et al. (2007b) in using metrics that measure earnings variability rather than directly calculate discretionary and non-discretionary accruals. Another criticism is that some studies use income smoothing to proxy for earnings quality (Ayres 1994). Yet, as a direct consequence of managing to maximize earnings persistence and predictability that are highly appreciated by investors, managers may be motivated to smooth earnings, reducing the overall quality of earnings (Gil-Alana and Peláez 2008; Özkan et al. 2007).

### 2.1.2 Timeliness of loss recognition

An important component of financial reporting quality is the timeliness of loss recognition. Prior research defines financial reporting quality as “the use of accounting accruals to recognize losses in a timely fashion” (Ball and Shivakumar 2008), and argues that timeliness is an important component of earnings quality, particularly in corporate governance and debt agreements (Ball and Shivakumar 2005, 2006). Studies suggest that timeliness is consistent with higher earnings quality because it tends to increase the volatility of earnings relative to cash flows. Additionally, studies find “good news” earnings to be less timely but less persistent than “bad news” earnings (Basu 1997).

Timely loss recognition results in tightening debt covenants and/or triggering covenant violations sooner, leading to timely transfer of decision-making rights from managers responsible for losses to creditors (Ball 2001; Ball and Shivakumar 2005). In a cross-country study, Bushman et al. (2006) builds on this premise by suggesting that timely loss recognition increases investment response to declining opportunities. They argue that the prospect of early intervention by lenders prompted by timely loss recognition may force managers to avoid *ex ante* negative NPV investments (from stockholders’ viewpoint) and to more quickly abandon investments determined *ex post* to be negative NPV. Alternatively, managers may refrain from over-investment even in the absence of debt contracts if penalized for incurring losses, for example, by adverse reputation effects, adverse compensation effects, increased threat of dismissal by the board, or increased threat of takeover (Bushman et al. 2006). Higher quality earnings is partly manifested in more timely loss recognition, which is revealed by a pattern of higher frequency of large negative net income (Barth et al. 2007b).

## 2.2 Effects of mandatory IAS adoption

The primary goal of the IASC and its successor IASB is to develop an internationally acceptable set of high quality financial reporting standards. These bodies help bring national accounting systems closer by harmonizing differences between national systems and to allow developing countries with limited institutional accounting infrastructure to adopt a consistent set of high quality standards (Radebaugh et al. 2006). Regulators claim that use of IAS should improve the decision usefulness of accounting information through enhancing financial reporting quality and comparability of financial statements (e.g., EC Regulation No. 1606/2002), resulting in better allocation of economic resources. Many researchers analyze the effects of mandatory IAS using the first set of annual reports prepared after the mandatory adoption date. Most studies are limited to specific countries and use a variety of research methods. Most studies examine the effects of IAS on financial statements and firm market valuation.

### 2.2.1 Financial statement effects

Adoption of IAS-based standards results in changes in accounting measurement and disclosure practices. Compared to most local GAAP, prior research claims that disclosure quality and comprehensiveness of accounting numbers under IAS are perceived to be higher (Bae et al. 2007; Daske and Gebhardt 2006; Ding et al. 2006). On the measurement side, IAS are principles-based standards that emphasize fair values and balance sheet valuation (Hung and Subramanyam 2007). By requiring accounting methods that better reflect economic position and performance, IAS reduces the range of acceptable

accounting alternatives. Narrowing available accounting treatments serves to limit management opportunistic discretion in determining accounting amounts (Ashbaugh and Pincus 2001). More effective measurement techniques provide investors with reliable information for rational investment decision making (Barth et al. 2007b). On the disclosure side, IAS requires the application of new accounting definitions, principles and procedures, more exhaustive and detailed reporting, and finally better satisfaction of the information needs of various financial statement users (Blanc 2003). For example, IAS prohibit the use of hidden reserves (Dumontier and Raffouriner 1998), which is a venue for income smoothing in several countries, including Egypt.

Studies on the implications of IAS adoption can be divided into three streams. The first examines the direct impact of IAS adoption on the quality of financial reporting, the second is concerned with the differential impact of IAS versus domestic standards, and the third investigates financial statement user opinions on IAS adoption. The first set of studies indicates that IAS-based accounting statements provide superior quality in many countries. Compared to firms applying domestic GAAP, firms applying IAS have more volatile net income, less earnings management, more timely recognition of losses, greater value relevance of accounting measures, and lower cost of capital (Barth et al. 2007a; Cahan et al. 2009), and exhibit lower analyst forecast errors (Ashbaugh and Pincus 2001). Recent studies also find evidence that the value relevance of earnings and book values increases under IAS (Bellás et al. 2007; Lin and Paananen 2007).

Studies on the comparison of national standards with IAS are country-specific and do not reveal an overall pattern for IAS. German firms that adopted IAS or US GAAP were found to enjoy a decline in the bid-ask spread and an increase in trading volume (Leuz and Verrecchia 2000), and experience an increase in value relevance of their earnings (Bartov et al. 2005). On the other hand, Eccher and Healy (2003) fail to find significant difference in terms of value relevance of accounting measures prepared using IAS and domestic GAAP for a sample of Chinese firms. Implicit in the results in this set of studies is the significant effect of home country accounting institutions and environment on the structure and content of financial statements (Ernst and Young 2007). Other researchers examine financial statement user reactions to IAS adoption and only find mixed evidence (e.g., Aubert and Dumontier 2007). Accordingly, a recent PriceWaterhouseCoopers (2007) study surveyed financial managers on IAS adoption and found less than half see benefits in IAS adoption (PwC/Ipsos MORI 2007). Evidence from Egypt is lacking on the financial statement effects of IAS adoption. Studies that discuss factors affecting form and content of financial statements are scant. Only few articles either directly or indirectly discuss value relevance of accounting numbers in Egyptian financial statements (for example, Abdel-Azim and Eldomiaty 2006; Omran and Pointon 2004; Ragab and Omran 2006).

### 2.2.2 Firm valuation effects

Studies claim that IAS adoption brings significant economic consequences to adopting firms. While research is growing rapidly in this area, increasing evidence points to positive effects of IAS adoption on market liquidity, information asymmetry, and firm risk and cost of capital. Market liquidity increases around the time of mandatory IAS adoption but only in countries with strict enforcement regimes and institutional environments that provide strong reporting incentives (Daske et al. 2007) and liquidity differences across countries become smaller (Platikanova 2007).

On the other hand, higher quality financial reporting is positively associated with higher market liquidity (Leuz and Verrecchia 2000) and negatively associated with adverse



selection problems in stock markets (e.g., Lambert et al. 2007; Verrecchia 2001), information asymmetry (Welker 1995; Healy et al. 1999), and firm cost of equity capital (Eaton et al. 2007; Francis et al. 2004, 2005; Hail 2003; Hail and Leuz 2006). Moreover, news signaling increasing probability of IAS adoption results in significantly positive market reaction for firms that are audited by a big five auditor, located in countries with greater expected improvements in reporting quality, or subject to more strict legal enforcement, and negative returns for other firms (Armstrong et al. 2007; Comprix et al. 2003). However, studies on market reaction to IAS adoption in emerging markets, including Egypt, are scant. Regulators in such markets could benefit from news on the market reaction to the adoption on new accounting standards.

Several metrics have been used in the literature to measure firm valuation and changes thereof. Firm value is a function of the growth potential of sustainable earnings of firms. Earnings sustainability (persistence) is an important earnings component and a significant attribute of high quality earnings. Sustainability of earnings plays an important role in company valuation because investors depend on earnings numbers more than other measures. Sustainable earnings are reflected in higher market-to-book and price-earnings (PE ratio) ratios. Market-to-book ratio is the basic premise underlying a commonly used valuation measure, Tobin's  $q$ , which measures the ratio of the market value of equity to its book value (Lang et al. 2004; La Porta et al. 2002) and thus guides investors seeking to purchase a firm.

The use of accounting measures as a proxy for firm performance has come under severe criticism due to their failure to consider differences in systematic risk, temporary disequilibrium effects, tax laws, and arbitrary accounting conventions (Benston 1985). On the other hand, one cannot rely on measures of pure capital market data because they capture only changes in firm value, not levels of value (Montgomery and Birger 1988). For this reason, hypotheses H5 (1997) and H5 (2006)—that Egyptian listed firms experience higher firm valuation post adoption of IAS-based standards—cannot easily be tested using capital market data. If the hypothesis is true, capital market data will already have incorporated the adoption effect in share prices, and later observations would not reveal value changes (Montgomery and Birger 1988).

For purposes of this study, Tobin's  $q$  is a more appropriate measure of firm valuation because it combines capital market data with accounting data, whereby the correct risk-adjusted discount rate is used, equilibrium returns are imputed, and distortions due to tax laws and accounting conventions are minimized (Benston 1985). In this article the use of  $q$  is especially appropriate since the adoption effects are expected to vary across industries—due to different industry accounting practices (LeCraw 1984). Therefore, to minimize industry-related biases, it is important to control for systematic risk, disequilibria, tax laws, and accounting conventions that vary widely across industries.

### 2.3 The Egyptian accounting environment

Until 1991, the Egyptian economy was centrally planned, where government bodies managed resource allocation without resort to market mechanisms. Public-sector firms were audited by the Central Auditing Organization (CAO), which was (and continues to be) the agency in charge of (1) issuing accounting and auditing public sector standards and (2) auditing firms in the public sector domain. The CAO wields enormous influence and power in the Egyptian economy because of its independence, where its president is appointed by, and reports directly to, the Egyptian President. In the aftermath of the 1991 Gulf War, the government adopted and seriously implemented an economic reform



program suggested by major World economic lenders. The program involves gradual adoption of market mechanisms, which include a sound financial regulatory structure and reliable corporate information based on internationally accepted accounting and auditing standards.

### 2.3.1 *Legal setting*

Until 1997, the structure of accounting systems in Egypt was influenced primarily by the legal system. Issued in 1981, the Companies Law (CL) requires all registered companies to keep regular accounting records and issue annual audited financial statements.<sup>3</sup> However, CL does not cover accounting and auditing standards, but requires that external audits should be conducted. As a result, the range of allowable accounting treatments was wide, providing enormous discretion to firms in measurement and disclosure decisions. As a part of the economic reform program, the Capital Market Law (CML) was issued in 1992 to regulate capital market transactions.<sup>4</sup> CML requires all firms listed on the Cairo & Alexandria Stock Exchange (CASE) to prepare financial statements in compliance with the International Accounting Standards.

Later, the Ministerial Decree 503/1997<sup>5</sup> mandated the use of Egyptian Accounting Standards (EAS) by all enterprises regulated by the CMA. Accounting regulations are not passed as laws in Egypt, but rather as ministerial decrees (see the following section). The 1992 CML requirements applied only to listed firms but were not followed strictly (Hassan 2008; World Bank 2002). To further the compliance of Egyptian firms to financial reporting requirements, the CMA instituted fines against non-compliers, and required these firms to establish an audit committee to improve corporate governance and financial reporting practices in these firms (World Bank 2002).

### 2.3.2 *Accounting standard-setting process*

Extant research suggests that structural factors in the financial reporting environment explain cross-country differences in the information content of earnings (DeFond et al. 2007). Unlike many developed nations, Egypt never had a dedicated national accounting standards board that researches the effects of economic activities and regulates these activities as part of an overall economic vision or strategy (Tawfik 2006). The various EAS versions are basically a modified version of IAS. Egyptian accounting and auditing standards are developed by the profession, discussed and adopted by a ministerial committee, and issued by ministerial decrees (World Bank 2002). In May 1997 the Ministry of Economy and Foreign Trade issued Ministerial Decree 498/1997 that establishes the Permanent Committee for Standards of Accounting and Auditing<sup>6</sup> (World Bank 2002).

<sup>3</sup> The Companies Law 159/1981 is the primary law regulating private company organization and business transactions.

<sup>4</sup> The Capital Market Law 95/1992 governs stock market transactions and grants the CMA authority to delist violators.

<sup>5</sup> The Ministerial Decree 503/1997 was issued by the Ministry of Economy and Foreign Trade. This Ministry, which underwent a name change to Ministry of Economy and later to its current name, Ministry of Investment, has oversees the CMA (Egyptian Wakaea 1997) and continues to issue accounting and auditing requirements for all firms subject to CMA jurisdiction.

<sup>6</sup> The Permanent Committee is headed by the chairman of CMA and includes nine members representing major accounting associations, CAO, CMA, Central Bank of Egypt, and General Authority of Free Trade and Investment (World Bank 2002).

While it is the Egyptian Society of Accountants and Auditors (ESAA) that reviews and modifies IAS into proposed EAS, it is the Permanent Committee that has the legal obligation to issue the standards (World Bank 2002). In practice, ESAA translates a standard into Arabic, makes appropriate modifications in case the standard in its original form contains discrepancies with Egyptian laws and regulations, and prepares a draft (World Bank 2002). The draft is discussed and finalized by the Permanent Committee, which prepares the final draft for the Minister to issue in a decree (World Bank 2002). To date, three decrees have been passed (1997, 2002, and 2006) mandating the adoption of three modified versions of the IAS. While the 2006 decree marks the most comprehensive set of accounting standards in Egyptian business history, the 1997 decree marks the earliest instance of private accounting regulation.

a. Egyptian accounting standards: 1997 version The Ministerial Decree 503/1997 was the first to introduce Egyptian accounting standards, effective in fiscal years starting January 1, 1998. Except for lease accounting, EAS were developed in conformity with the IAS prevailing at the time of its adoption. Egyptian laws concerning leases do not recognize finance leases and the application of accounting treatments required under the relevant IAS. The decree also mandates the use of IAS in cases of absence of EAS guidance, but actual accounting practices lagged behind due to inadequate practitioner knowledge of current IASC/IASB pronouncements and lack of appropriate implementation guidelines (World Bank 2002).

b. Egyptian accounting standards: 2002 version By 2002, the set of IAS expanded enormously covering business areas previously not regulated. It was clear that EAS needs to be updated. The Ministerial Decree 345/2002<sup>7</sup> was issued to institute the adoption of a current set of IAS, specifically 23 standards, replacing the EAS in place prior to the decree date (MD 345/2002). Analyzing the impact of this version is outside the scope of this study that aims at identifying the effects of the first IAS-based standards (the 1997 version) and the most recent set of standards (the 2006 version).

c. Egyptian accounting standards: 2006 version In 2004, a comprehensive change took place in IAS whereby 17 of the previously issued IAS were revised, three standards were cancelled, and new standards were issued (after being renamed to IFRS) (Hassan 2008). In 2006, the Ministerial Decree 243/2006<sup>8</sup> repealed the 1997 and 2002 decrees and mandated the adoption of an updated set of modified IAS, 35 standards in all, in fiscal years starting January 1, 2007 (MD 243/2006). The objective is to improve the disclosure in and transparency of financial information presented by Egyptian firms, and to facilitate the application of corporate governance mechanisms (MD 243/2006). Also, to improve the comparability of Egyptian firm financial statements, CAO decided to adopt the same EAS for the firms subject to its auditing jurisdiction (Hassan 2008). The Decree however, specifies four departures<sup>9</sup> from current IAS, mostly to comply with prevailing Egyptian legal requirements.

<sup>7</sup> Ministerial Decree 345/2002 was issued by the Minister of Economy.

<sup>8</sup> Ministerial Decree 243/2006 was issued by the Minister of Investment.

<sup>9</sup> In brief, EAS 1 requires employee and board members' share in profits be presented as an appropriation of profit rather than an expense in the income statement, as required by IAS 1. EAS 10 narrows the use of fixed asset revaluations allowed under IAS 16. EAS 19 requires the formation of loan loss provision through the income statement, overriding IAS 30, which requires such provision to be an equity allocation. Finally, EAS 20 dictates that the lessor capitalizes and depreciates leased assets while the lessee charges the lease payments to expense in the income statement, thus overriding IAS 17.

### 2.3.3 *Sophistication of Egyptian stock market participants*

One of the research questions examined in this paper related to the information effects of the consecutive adoption of IAS-based EAS standards. The validity of posing this question is directly related to the degree of sophistication of the Egyptian stock market participants, which in turn begs the question of how efficient is this market. Few studies were conducted on the efficiency of the Egyptian stock market, the sophistication of its users, and the usefulness of accounting information published by Egyptian preparers. The general consensus of these papers is that while the Egyptian market does not exhibit a strong form of efficiency, it is headed that way.

Asal (1998) suggests that up to 1996 the market was inefficient and the inefficiency was evident through non-linear behavior. However, the results show that in 1997 the market is not characterized by predictability and is therefore informationally efficient. The argument that stock returns behavior is non-linear is also shared by Omran and Ragab (2004) who use a sample of Egyptian firms that spans 1996–2000. Further, in a cross-country study that included Egypt, Griffin et al. (2006) find that emerging markets are just as efficient as developed markets at incorporating simple forms of public information into stock prices.

On the other hand, some studies raise doubts with respect to the efficiency of the Egyptian stock markets. Durnev et al. (2003), for example, suggest that stock prices in low-income countries tend to move up and down en masse, and thus are of scant use for capital allocation. Azab (2002) examines the behavior of stock returns around the announcement date of a number of corporate actions during the period 2000–2001, and tests for market efficiency. He finds a departure from the semi-efficient from efficient markets, and suggests the existence of mispricing opportunities that could have been used to achieve abnormal returns.

Value relevance of accounting information has been examined in prior studies. Abdel-Azim and Eldomiaty (2006) examine the informativeness of Egyptian accounting information and argue for a high degree of informativeness of accounting information to shareholders in Egypt, and claim that users are most attentive to firms' assets efficiency and profitability, and least attentive to liquidity and cost elements. Similarly, Ragab and Omran (2006) find that accounting numbers possess information content and are far more indicative of firm future value than stock prices. Additionally, Omran and Pointon (2004) find that dividends are more important than earnings in determining stock prices; more specifically, retained earnings are more significant than dividends for actively traded shares, while accounting book value is the most important determinant of the share price for non-actively traded shares. Conclusions from these studies suggest that the Egyptian market is informationally efficient and that accounting numbers have value relevance for market participants.

## 3 Hypothesis development

Prior literature argues that key determinants of financial reporting quality include the legal system, source of financing, characteristics of the tax system, involvement of the accounting profession, economic development, and accounting education (Ali and Hwang 2000; Ball et al. 2000). Countries that are characterized by a code law legal system, bank-based financing, strong tax orientation, low degree of professional bodies' involvement in accounting standard-setting, low level of economic development, and poor accounting education are expected to have a relatively lower quality financial reporting system

compared to countries characterized by common law, capital market-based financing, weak tax-orientation, well-developed accounting profession, high level of development, and adequate accounting education (Ali and Hwang 2000; Ball et al. 2000). However, Ball and Shivakumar (2005) emphasize that it is the “demand” for high quality financial reporting that creates the strongest motivation for financial reporting quality.

Code law countries are associated with less timely loss recognition (Ball et al. 2000) and more earnings smoothing practices than common law countries, which normally share similar conceptual frameworks with IAS (Leuz et al. 2003). Egypt is a code law country, where business financing is mostly bank-based (Levine 2002) like most code law countries where information asymmetry is resolved by banks’ and major stakeholders’ direct access to financial information about the company (Özkan et al. 2007). Further, the tax regulations in Egypt are a dominant factor in shaping the financial statements. Consistent with the legal system classification, the more involved regulatory authorities are in the process of accounting standards development, the less important is the role of professional accounting bodies (Özkan et al. 2007). In Egypt, the ESAA deliberates the standards prior to their formal release by the concerned Ministry, but it neither has legal authority to issue the standards nor does it have any authority to monitor their adoption or enforcement (World Bank 2002).

In addition to the above factors, the level of economic development creates some accounting dilemmas because the accounting community is not prepared for more complicated transactions such as accounting for derivatives, leases, and valuation of goodwill. Egyptian accountants do not have adequate amount of experience with these transactions. Finally, the level of accounting education is higher in developed countries, where courses are more complex and diversified, and certification requirements are more thorough. The level of accounting education and practitioner training in Egypt has been described as “inadequate” by experts (World Bank 2002).

### 3.1 Earnings quality around mandatory adoption of EAS

Based on the above, it is fair to assume that prior to the adoption of IAS-based standards in 1997, earnings quality was low. The first time adoption of IAS-based standards should therefore have more pronounced impact on earnings quality in Egypt. IAS-based EAS narrows the range of accounting choices available to management compared to accounting standards in use prior to 1998, including prohibiting the use of equity reserves which were extensively in use by Egyptian firms to smooth income.<sup>10</sup> Since higher earnings quality is directly related to earnings variability, which is associated with less earnings management (Barth et al. 2007b; Lang et al. 2006; Leuz et al. 2003) and more timely gain and loss recognition (Ball and Shivakumar 2005, 2006), I make the following hypothesis<sup>11</sup>:

H1 (1997): Earnings variability of Egyptian listed-firms post-adoption of the 1997 EAS is likely to be higher than pre-adoption.

<sup>10</sup> In an interview with a Chief Financial Officer of a top Egyptian firm conducted by the author in 2002, the CFO declared that income smoothing practices are prevalent and that it is commonly acceptable presumption that they are indicative of “good management” practices.

<sup>11</sup> Barth et al. (2007b) warn though of mislead interpretation of higher earnings variability, which may take place due to the potential effects of “big baths” (see, for example, Healy 1985) and the erroneous estimation of accruals. To the extent that “big baths” or errors may take place, it may significantly contaminate the study results.

Several studies suggest that higher earnings quality is associated with a less negative correlation between accruals and current period cash flows (Ball and Shivakumar 2005, 2006; Lang et al. 2003, 2006; Leuz et al. 2003). Managers mitigate unfavorable cash flow by modifying accruals upwards (Barth et al. 2007b) resulting in a negative correlation. Additionally, more timely loss and gain recognition reduces the negative correlation (Ball and Shivakumar 2005, 2006), and therefore increases earnings quality. On the other hand, a past study by Dechow (1994) suggests that higher earnings quality is associated with a more negative correlation because of accrual reversals in periods following income smoothing practices. Thus, higher quality accounting can result in a more negative correlation between accruals and cash flows.

In this study, I follow the studies contending that higher earnings quality is associated with a less negative correlation. The lack of knowledge on the part of Egyptian accountants about the adoption of accounting standards and the unavailability of implementation guidelines on standards impede compliance (World Bank 2002). Also, many Egyptian firms do not follow disclosure and reporting requirements. These findings, in addition to frequent resorting to income smoothing practices, make a more negative correlation between cash flows and accruals a usual occurrence. Since the standards that carry minor modifications to the IAS reduce managerial discretion with respect to accruals manipulation and encourage timely loss recognition, I expect that earnings quality should improve upon adoption. Therefore, I make the following hypothesis regarding the 1997 EAS:

H2 (1997): The correlation between accruals and cash flows of Egyptian listed-firms post-adoption of the 1997 EAS is likely to be less negative than pre-adoption.

Studies use the frequency of small positive net income as an indicator for earnings management (Burgstahler and Dichev 1997; Leuz et al. 2003), because management prefers to report small positive net income rather than negative net income (Barth et al. 2007b). Further, Lang et al. (2006) provide evidence that, relative to US firms, reconciled accounting data for cross-listed firms exhibit a tendency for earnings management indicated by a higher proportion of small positive earnings. They suggest that the resulting accounting data are potentially less informative than similar data for US firms. As pointed earlier, IAS-based standards offer less accounting discretion for adopting preparers to manipulate income and is therefore expected to result in lower instances of small positive income figures. Consistent with predictions of higher earnings quality associated with IAS standards, I make the following hypothesis:

H3 (1997): Management towards positive earnings of Egyptian listed-firms post-adoption of the 1997 EAS is likely to be less frequent than pre-adoption.

Extant research suggests that timely recognition of large losses, rather than deferral to future period, is associated with higher earnings quality (Ball 2001; Ball and Shivakumar 2005, 2006; Lang et al. 2003, 2006; Leuz et al. 2003). In line with the income smoothing hypothesis, these studies argue that large losses should be relatively an unusual occurrence in the case of income smoothing, and that firms applying IAS report large losses with higher frequency than those applying domestic standards (Barth et al. 2007b). Further, as pointed earlier, Egyptian firms rely primarily on debt financing and many firms borrow capital repeatedly. Studies find that timely loss recognition is associated with certain economic benefits (e.g., lower interest costs (Zhang 2008)) for firms that have a reputation for timely loss recognition (Easton et al. 2009). However, the demand for timely loss recognition is a function of the degree of reliance a firm has on the debt

market (Ball et al. 2008). Since IAS-based standards require more stringent reporting of unrealized losses in a timely fashion compared to domestic practices, I expect Egyptian listed firms to engage in timely recognition of unrealized losses due to the likely benefits. Therefore, consistent with the predictions of higher earnings quality associated with IAS-based standards, I make the following hypothesis:

H4 (1997): Recognition of losses by Egyptian listed-firms post-adoption of the 1997 EAS is likely to be more frequent than pre-adoption.

Compared to the 1997 EAS, the 2006 EAS represents a different event with different implications. The 2006 EAS was basically a revision of current IAS-based standards to reflect up-to-date structure of the current IAS. On January 1, 2008, 35 IAS-based standards were to replace the 23 standards in effect before this date in Egypt. During the period 2002–2007, IASB has revised 17 standards, cancelled 3, and issued new standards. The changes are intended to provide guidance for a wider range of transactions based on longer experience. Following the same reasoning as in the above hypotheses, the 2006 EAS adoption is expected to have effects that are similar to those of the 1997 EAS adoption. However, the 2006 EAS is merely a revision of standards already in place and therefore its impact on the financial statements is not expected to be as intense as that of the 1997 EAS. Therefore, I restate the above hypotheses H1–H4 for the year 2006:

H1 (2006): Earnings variability of Egyptian listed-firms post-adoption of the 2006 EAS is likely to be higher than pre-adoption

H2 (2006): The correlation between accruals and cash flows of Egyptian listed-firms post-adoption of the 2006 EAS is likely to be less negative than pre-adoption.

H3 (2006): Management towards positive earnings of Egyptian listed-firms post-adoption of the 2006 EAS is likely to be less frequent than pre-adoption.

H4 (2006): Recognition of losses by Egyptian listed-firms post-adoption of the 2006 EAS is likely to be more frequent than pre-adoption.

### 3.2 Capital market effects around mandatory adoption of EAS

Extant literature provides conflicting basis for predicting the market effect of EAS adoption. One stream suggests that mandatory IAS adoption generates significant capital market benefits because, relative to most local GAAP, IAS reporting improves the quality of financial reporting (e.g., Bae et al. 2007). Improved financial reporting quality is associated with an increase in market liquidity, a decline in firms' cost of capital, lower adverse selection problems in stock markets, and lower estimation risk (Lambert et al. 2007; Verrecchia 2001), and ultimately an increase in firm value (Daske et al. 2007). The impact on firm value can be used to evaluate the mandatory adoption of EAS in 1997 and 2006. The IAS-based EAS is characterized by narrower accounting treatments, which serve to reduce managerial discretion, and hence increase firm earnings quality. Additionally, IAS promote harmonization and convergence between various national standards, and thereby facilitating investor's comparison of firms across markets and countries (e.g., Armstrong et al. 2007; Covrig et al. 2007).

On the other hand, imposing IAS may carry negative capital-market effects if it reduces management's ability to signal private information to investors or fails to fit into the local environment as the prior GAAP (Daske et al. 2007). At a minimum, prior research questions the direct impact of reporting standards on firm value, and

suggests instead that a firm's reporting incentives play an important intervening role. Firms that oppose the switch towards more transparency are unlikely to make material changes to their reporting policies (e.g., Ball and Shivakumar 2006; Daske et al. 2007).

This paper studies firm market valuation effects in order to examine (1) whether market participants react to accounting related events in Egypt in its capacity as an emerging market (that is, do accounting numbers carry information content like in developing countries?) and, if market participants react to these events, (2) do they care about the quality of the standards applied or are they indifferent? In an emerging economy like Egypt, where market participants are not as sophisticated as in more developed markets, it may not be reasonably expected that management uses financial reports to signal private information nor that firm reporting incentives exceed the availability of information to report. The only caveat may be that the weak enforcement of reporting standards may impede the flow of benefits from IAS-based standards adoption to market participants. Thus, since IAS-based standards mandate superior accounting practices and require more disclosures, I expect that the adoption of IAS-based standards in Egypt would increase the informativeness of reported numbers to market participants. Therefore, I make the following hypothesis:

H5 (1997): Market value of listed Egyptian firms post-adoption of the 1997 EAS is likely to be higher than pre-adoption.

H5 (2006): Market value of listed Egyptian firms post-adoption of the 2006 EAS is likely to be higher than pre-adoption.

#### 4 Research design

The study assesses the effects of the EAS mandatory adoption on Egyptian listed firms' (1) earnings quality and (2) market valuation. Most prior empirical studies evaluate the financial statement effects of the adoption of accounting standards by investigating change in a financial statement attribute such as the level of earnings management or the variability of earnings (e.g., Barth et al. 2007b; Hung and Subramanyam, 2007; Leuz et al. 2003) or stock market reaction such as firm value, value relevance of accounting numbers, market liquidity, the cost of capital, or timeliness of recognizing economic income (e.g., Ball et al. 2000; Barth et al. 2007a; Burgstahler et al. 2006; Daske et al. 2007; Harris and Muller 1999; Hung 2001; Lang et al. 2006; Leuz and Verrecchia 2000).

I follow prior research (Lang et al. 2003, 2006; Leuz 2003) in assessing earnings quality by measuring the level of earnings management and timely loss recognition pre- and post-adoption of the 1997 and 2006 EAS standards. I construct earnings quality metrics based on cross-sectional data and interpret statistical differences (e.g., variances, correlations, and regression  $R^2$ s) between pre- and post-adoption periods as evidence of differences in earnings quality. I test for the frequency of small positive and large losses using test for significance of regression coefficients, and test for differences in the other metrics using a t-test based on the empirical distribution of the differences between the two periods for each event. In this section, I identify the sample firms based on a selection strategy, define the measurement basis for the dependent variables, earnings quality and firm valuation, and describe the study limitations.



**Table 1** Sample selection criteria

Selection criteria	1997	1998	2006	2007
Total number of listed Egyptian firms (Dec. 31) <sup>a</sup>	522	611	595	435 <sup>b</sup>
Less: firms with no financial statements available from <i>Kompass Egypt</i> Financial Year Book <sup>c</sup> and/or firms from the financial services sector	359	432	439	280
Firms with available financials	158	179	156	155
Less: non-common firms (for matching purposes)	5	26	15	14
Firms included in the final sample	153	153	141	141

<sup>a</sup> Figures obtained from the Egyptian CMA Bulletins and Egyptian Stock Exchange website: [http://www.egyptse.com/index\\_a.asp?CurPage=main\\_market\\_indicators\\_a.asp](http://www.egyptse.com/index_a.asp?CurPage=main_market_indicators_a.asp). (Last accessed: August 14, 2008).

<sup>b</sup> Starting 2005, the Egyptian stock has experienced a drop in the number of listed firms because the most recent 2005 tax law lifted tax incentives previously granted for listing.

<sup>c</sup> Data validation of the Financial Yearbook financial information has been conducted for a sample of 20 firms for the period 2006–2007 by comparing their financial information with data included in the financial statements issued by the firms. However, I could only validate five firms for the period 1997–1998 due to unavailability of firm financial statements. Validation showed that financial statement data in the Yearbook is highly accurate.

Sample consists of Egyptian listed firms at the end of the following fiscal years: 1997, 1998, 2006, and 2007. The sample firms must have data available from *Kompass Egypt* Financial Yearbook for at least 2 years that represent an EAS introduction (i.e., 1997 and 1998 or 2006 and 2007). The selection criteria resulting in the final sample is detailed below

#### 4.1 Sample selection

The final sample consists of firms listed on the Egyptian stock exchange on the year of (and the year following) the adoption of the first and third EAS versions, and that meet the following sample selection criteria (see Table 1):

1. Firm is not classified as a financial service sector firm.
2. Firm financial statement data is available from *Kompass Egypt*<sup>12</sup> for 1997 and 1998 or 2006 and 2007.
3. Closing stock prices data must be available from the Egyptian CMA for the fiscal year-end corresponding to the firm's membership of the sample (i.e., whose financial data is available for a year).

Since the study examines the effects of applying mandatory accounting standards, all listed firms are expected to comply with these standards. Hence, the use of a control sample of different firms or a matched sample is not possible. To enhance the credibility of the study findings, I only include in the final sample those firms with financial statement data available for both years around the adoption of an EAS version (before and of applying the new accounting standards), but not necessarily both versions under investigation in this study. This requirement creates the same sample of firms for both years around a single EAS version adoption, thus reducing the need to include industry and other firm-specific control variables in the empirical analysis. In effect, each firm acts as its own control.

<sup>12</sup> *Kompass Egypt* is owned by Fiani & Partners, a firm that specializes in providing financial information products primarily directed to the investment and credit community. It issues the Financial Yearbook annually in print edition. The Yearbook has two types of financial listings: full financial statements and highlights for the current year. Due to insufficient historical data, firms from the second category are not included in the sample.

Matching firms in the sample with other firms of the same (or similar) industry, operating performance and size is a practice that helps control for the effect these variables have on the relation under study. However, since EAS became in effect at a single point of time for all Egyptian firms, finding a control sample to act as a benchmark is impossible. The empirical strategy I used in this study addresses this issue. I use the same firms as sample members for both years around each of the two events. That is, each firm must be present in the sample in both years of analysis: the year of adoption and the year after. This requires that missing values for a variable be replaced by the average for the variable, culminating in a net number of 153 firms for the first event analysis and 141 firms for the second.

The characteristics of the sample firms during each of the two event periods are described in Tables 2 and 3. Panel A provides a breakdown of the final sample by industry and year, while Panel B provides statistics for the sample firms by year. Industry breakdown in Panel A in Tables 2 and 3 shows that construction and manufacturing firms dominate the sample for both events. Although this implies that accounting practices prevailing in these two sectors (to the exclusion of other sectors) may affect empirical results, this selection bias mirrors the disproportionate number of construction and manufacturing firms listed on the Egyptian stock exchange. Real estate investment, retail trade and services industries are also represented more often than other industries.

Panel B of Tables 2 and 3 describes the financial characteristics of sample firms, e.g., size, growth, liquidity, leverage, and stock market performance. Regarding the first event (adoption of the first EAS version in 1997), data shows that in 1997 (1998) the average sample firm has about LE380m (LE621m) in total assets, which grew by 14% (10%), and earned LE217.5m (LE320.7m) in net sales, which grew by 22% (48%). Profitability indicators show that the sample firm made LE39.7m (LE66.78m) in operating income, which resulted in LE13 (LE12) in earnings per share and 9% (24%) in return on assets. The average sample firm is LE1,424m (LE475m) in market value, has 3.50 (1.41) in Tobin's

**Table 2** Sample characteristics: industry breakdown by year

Industry breakdown	First event				Second event			
	1997		1998		2006		2007	
	No.	%	No.	%	No.	%	No.	%
Agriculture, forestry and fishing	7	4.6	7	4.6	8	5.7	8	5.7
Mining	9	5.9	9	5.9	11	7.8	11	7.8
Construction	52	34.0	52	34.0	41	29.1	41	29.1
Manufacturing	30	19.6	30	19.6	29	20.6	29	20.6
Utilities	10	6.5	10	6.5	14	9.9	14	9.9
Retail trade	13	8.5	13	8.5	9	6.4	9	6.4
Real estate investment	14	9.2	14	9.2	10	7.1	10	7.1
Services	12	7.8	12	7.8	15	10.6	15	10.6
Public administration	6	3.9	6	3.9	4	2.8	4	2.8
Total	153	100	153	100	141	100	141	100

Sample consists of Egyptian listed firms meeting sample selection criteria outlined above at the end of fiscal years 1997, 1998, 2006, and 2007

**Table 3** Sample characteristics: industry breakdown by year Sample firms statistics by year

Firm characteristics	1997					1998				
	N	Mean	Std. dev.	Min.	Max.	N	Mean	Std. dev.	Min.	Max.
Total assets (L.E. m)	132	380.15	48.30	1.50	3731.31	93	620.51	87.63	48.22	57707.72
Asset growth (%)	107	13.55	25.92	-34.58	129.63	125	9.84	20.01	-94.54	79.55
Net sales (L.E. m)	128	217.48	261.47	0.27	1558.76	88	320.70	329.08	4.52	1654.88
Sales growth (%)	123	21.48	83.59	-99.86	785.79	77	48.29	181.49	-47.75	1248.11
Accruals standardized by t. assets (L.E. m)	56	0.09	0.20	-0.26	0.77	71	0.19	1.42	-0.30	12.07
Operating income (L.E. m)	128	39.71	64.75	-56.29	300.96	88	66.78	147.59	-162.92	1270.52
EPS (L.E.)	130	12.62	27.93	-39.67	226.13	103	11.68	35.82	-1.63	279.72
Return on assets (%)	125	8.65	13.31	-104.79	49.58	88	24.02	133.93	-5.49	1264.59
Current ratio	131	1.95	5.48	0.10	62.55	93	2.07	4.80	0.41	45.56
Leverage (T. liabilities/T. assets)	129	64.09	24.59	0.63	178.86	93	61.66	21.03	8.34	132.15
Market value of equity (L.E. m)	95	1424.60	6400.19	1.25	56251.80	87	474.93	616.27	11.03	2844.93
Tobin's q	153	3.50	13.48	0.05	150.89	153	1.41	0.52	0.08	4.91
P/E ratio	93	43.44	174.81	-34.98	1532.33	84	8.03	7.16	-25.36	28.42
Firm characteristics	2006					2007				
	N	Mean	Std. dev.	Min.	Max.	N	Mean	Std. dev.	Min.	Max.
Total assets (L.E. m)	138	1080.00	4461.05	7.74	50000.00	140	1160.00	3475.90	7.27	30000.00
Asset growth (%)	138	16.70	52.51	-38.56	568.18	140	15.39	43.86	-72.29	439.80
Net sales (L.E. m)	138	577.12	2088.02	0.25	30000.00	140	3466.12	1350.38	1372.00	10000.00
Sales growth (%)	138	30.80	145.07	-94.70	1784.69	140	43.88	203.69	-95.42	2578.57
Accruals standardized by t. assets (L.E. m)	129	0.00	0.20	-2.38	0.41	132	0.06	0.45	-1.85	4.80
Operating income (L.E. m)	137	142.00	642.24	-25.41	7906.19	139	154.00	431.61	-340.80	3669.03

Table 3 continued

Firm characteristics	2006					2007				
	N	Mean	Std. dev.	Min.	Max.	N	Mean	Std. dev.	Min.	Max.
EPS (L.E.)	130	11.11	42.43	-3.67	379.68	140	8.01	14.92	-1.63	76.35
Return on assets (%)	137	8.73	10.06	-44.68	35.30	139	12.51	43.39	-194.54	503.44
Current ratio	130	3.99	22.17	0.09	295.15	140	3.82	20.98	0.30	295.05
Leverage (T. liabilities/T. assets)	138	45.89	26.09	0.16	207.46	140	45.64	27.67	0.16	227.90
Market value of equity (L.E. m)	129	1220.00	6573.39	-0.70	80000.00	83	1980.00	5242.34	1.97	40000.60
Tobin's <i>q</i>	141	1.61	5.89	0.18	81.07	141	1.40	1.88	0.17	27.09
P/E ratio	138	46.61	400.83	-923.38	3289.82	131	40.96	157.11	-103.77	746.98

See Table 2 footnote

$q$ ,<sup>13</sup> and has a P/E ratio of 43.44 (8.03). Like most Egyptian firms that rely on debt financing, the capital structure of the average sample firm consists of 64% (62%) in liabilities and a good current ratio of 1.95 (2.07). Accruals standardized by assets increased from LE0.09m in 1997 to LE0.19m in 1998.

Data for the second event (adoption of the third EAS version in 2006) shows that in 2006 (2007) the average sample firm has about LE1,080m (LE1,160m) in total assets, which grew by 17% (15%), and earned LE577m (LE3466m) in net sales, which grew by 31% (44%). Profitability indicators show that the sample firm made LE142m (LE154m) in operating income, which resulted in LE11 (LE8) in earnings per share and 9% (13%) in return on assets. The average sample firm is LE1,220m (LE1,980m) in market value, has 1.6 (1.4) in Tobin's  $q$ , and has a P/E ratio of 47 (41). The debt ratio of the average sample firm is 46% (46%) in liabilities, while the current ratio is 4.00 (3.82). Standardized accruals increased from LE0.0 in 2006 to LE0.06m in 2007. The average sample firm in both events is characterized by large size, above-average growth, a strong dependence on debt financing, high profitability, high liquidity, and above-average stock market performance.

Panel B also shows that the average firm witnessed an overwhelming growth in assets, sales, and operating income over the study period (1997–2007), but a declining Tobin's  $q$  in the year after the event (i.e., 1998 and 2007). Although descriptive statistics do not recognize the effects of control variables, they provide supporting evidence that the first and third EAS versions had a positive impact on total accruals and on firm valuation (lower Tobin's  $q$ ). Daske et al. (2007) claim that the switch to IFRS results in an increase in firms' book value of equity compared to most local GAAP and hence drives down Tobin's  $q$ , which is the case suggested by the above data. However, the statistics show an increase in mean and standard deviation of standardized accruals post adoption of each EAS version, and fluctuating total accruals overall over each of the event periods. The increase in total accruals coincides with a decrease in earnings per share and P/E ratio. Market capitalization seems to fluctuate heavily over the event periods.

The effects of free market policies adopted by the Egyptian government over the study period (i.e., 1997–2007) are apparent from Panel B data. For example, Egyptian firms have normally resorted to bank loans for financing as evident by the above 60% debt ratio during the 1997–1998 period, but with policies directed towards strengthening stock markets, this ratio declined substantially to about 45% during the 2006–2007 period. Also, P/E ratio, which is by large a measure of investor confidence, for the average sample firm fluctuated heavily during the 1997–1998 period but seems to have stabilized around 40 times during the 2006–2007 period. A similar trend exists for the average firm market value. Collectively, the trends of these indicators suggest the free market direction of the Egyptian economy, where ownership dispersion becomes the norm. Effective accounting standards become increasingly important in light of the increasing dependence on these standards by users of accounting information.

<sup>13</sup> No significant difference was found between the sample firms over the 2 years around each event with respect to total assets, net sales, and net operating income. This suggests that the firm-year observations come from the same population of firms with similar characteristics.

## 4.2 Variable definition

The dependent variables in this study are earnings quality and firm valuation. Earnings quality is proxied by earnings management and timely loss recognition, while firm valuation is proxied by Tobin's  $q$ .<sup>14</sup>

### 4.2.1 Earnings quality metrics

**4.2.1.1 Earnings management** Prior literature argues that earnings quality manifests itself in less earnings management. Following Barth et al. (2007b) and others, I measure earnings management using four different metrics.<sup>15</sup> The variance of the change in net income (metric for testing H1), the ratio of the variances of the change in net income and the change in cash flows (metric for testing H1), the correlation between accruals and cash flows (metric for testing H2), and the frequency of small positive net income (metric for testing H3). The first three metrics measure earnings smoothing and the fourth measures whether earnings is being managed towards a target. Higher earnings quality is associated with a higher variance of the change in net income, higher ratio of the variances of the change in net income and change in cash flows, less negative correlation between accruals and cash flows, and lower frequency of small positive net income.

Earnings variability is an excellent measure of accrual quality and income smoothness (see Barth et al. 2007b; Dechow and Dichev 2002). The first metric, the variability of the change in net operating income scaled by total assets, has been used in Lang et al. (2003, 2006), Barth et al. (2007b), and others. I use operating income after depreciation as Sloan (1996) advocates because it excludes non-recurring items such as extraordinary items, discontinued operations, special items and non-operating income. It is the variance of the residual from the regression of change in net income on variables argued by prior research to affect net income (Ashbaugh 2001; Lang et al. 2003, 2006; Pagano et al. 2002; Tarca 2005). Regressing change in net operating income on these variables serves to “absorb” the likely explanatory effects of these variables, so that the residual contains the unexplained portion of net income. A smaller variance of the change in net income is construed as evidence of earnings smoothing (Barth et al. 2007b).

Equation (1) is estimated by using firm observations from the year of, and the year after, the adoption of the first and third EAS versions. In comparing firms in the pre- and post-adoption periods, I pool observations for both years of an event for sample firms. The residuals from Eq. (1) represent the unexplained portion of change in net operating income. For the comparison of pre- and post-adoption years, the variability of *CHGNOP* residuals is the respective variance of residuals for sample firms in both years. The difference in the variability of *CHGNOP* residuals between the pre- and post-adoption periods for sample firms is computed as the difference between the resulting metrics for the sample pre- and post-adoption.

Possibly, change in net operating income may be caused by the confounding effects of economic and firm-level factors not directly attributable to a newly enacted EAS. To the extent that these factors are not identified in the regression, the results are likely to be biased. To mitigate the confounding effects of firm-specific factors, the sample was designed to include the same firms from the pre- and post-adoption periods. However,

<sup>14</sup> All variables are truncated at the first and 99th percentile to impose normality on the sample.

<sup>15</sup> The Jones (1991) model is not suitable for the calculation of abnormal accruals in this study because the number of firm observations per industry can be quite small (Francis and Wang 2006).

effects of non-firm-specific factors still remain. Thus, following Lang et al. (2003, 2006), the earnings variability metric used in this study is the variance of the residuals from the regression of change in net operating income on variables identified in prior research as controls for these factors (Ashbaugh 2001; Lang et al. 2003, 2006; Pagano et al. 2002; Tarca 2005):

$$\begin{aligned} CHGNOP_{it} = & \alpha_0 + \alpha_1 MKTV\_EQUITY_{it} + \alpha_2 GROWTH_{it} + \alpha_3 CHG\_CMSTK_{it} + \alpha_4 LEV_{it} \\ & + \alpha_5 CHG\_TLIAB_{it} + \alpha_6 TURN_{it} + \alpha_7 OCF_{it} + \alpha_8 AUD_{it} + \alpha_9 OWN_{it} + \varepsilon_{it} \end{aligned} \quad (1)$$

where, *CHGNOP* is the change in operating income after depreciation, amortization, and depletion but before extraordinary items, scaled by year-end total assets; *OCF* is annual operating cash flows scaled by year-end total assets; *LEV* is year-end total liabilities divided by year-end book value of equity; *GROWTH* is annual percentage change in sales; *CHG\_CMSTK* is annual percentage change in common stock; *CHG\_TLIAB* is annual percentage change in total liabilities; *TURN* is sales divided by year-end total assets; *MKTV\_EQUITY* is the natural logarithm of market value of equity in millions of Egyptian pounds at year-end; *AUD* is an indicator that assumes values from 1 to 4 according to whether the firm auditor was CAO, Big 4 (or Big 4-associated), non-Big 4 international, or local (0 if missing); *OWN* is a categorical variable assuming values from 1 to 9 according to whether one shareholder directly owns over 50% of the firm's outstanding shares to no recorded shareholder with more than 25% direct or total ownership, 0 if status is unknown.

The second earnings management metric is the ratio of the variance of the change in net operating income, *CHGNOP*, to the variance of the change in operating cash flows, *CHGOCF*. Firms typically manage earnings using accruals, and the higher the level of accruals, the higher the variance of net operating income relative to the variance of operating cash flows. As with Eq. (1), I pool firm observations from both years around each EAS adoption event. The variance of *CHGNOP* residuals from Eq. (1) and the variance of *CHGOCF* residuals from Eq. (2) are used to compute the ratio of the variability of *CHGNOP* residuals to variability of *CHGOCF* residuals. Similar to Eqs. (1, 2) includes control variables to mitigate for the effect of confounding factors suggested by prior research (Ashbaugh 2001; Lang et al. 2003, 2006; Pagano et al. 2002; Tarca 2005). Therefore, Eq. (2) is estimated as follows:

$$\begin{aligned} CHGOCF_{it} = & \alpha_0 + \alpha_1 MKTV\_EQUITY_{it} + \alpha_2 GROWTH_{it} + \alpha_3 CHG\_CMSTK_{it} + \alpha_4 LEV_{it} \\ & + \alpha_5 CHG\_TLIAB_{it} + \alpha_6 TURN_{it} + \alpha_7 OCF_{it} + \alpha_8 AUD_{it} + \alpha_9 OWN_{it} + \varepsilon_{it} \end{aligned} \quad (2)$$

where, *CHGOCF* is the change in annual net cash flow, *OCF*, annual operating cash flow scaled by year-end total assets; remaining variables were defined below Eq. (1).

The third earnings smoothing metric is the Spearman correlation between accruals, *ACC*, and operating cash flows, *OCF*.<sup>16</sup> Similar to Eqs. (1) and (2), correlations of residuals from Eqs. (3) and (4), *OCF* residuals and *ACC* residuals are used, instead of correlations

<sup>16</sup> Unlike the Pearson correlation, Spearman correlation assesses how well a function could describe the relationship between two variables without making any (including normality) assumptions about the particular nature of the relationship between the variables, except those about symmetry of a gaussian-like distribution.



between *OCF* and *ACC* directly. As with the Eqs. (1) and (2), both *OCF* and *ACC* are regressed on the control variables, but excluding *OCF*:

$$OCF_{it} = \alpha_0 + \alpha_1 MKTV\_EQUITY_{it} + \alpha_2 GROWTH_{it} + \alpha_3 CHG\_CMSTK_{it} + \alpha_4 LEV_{it} + \alpha_5 CHG\_TLIAB_{it} + \alpha_6 TURN_{it} + \alpha_7 AUD_{it} + \alpha_8 OWN_{it} + \varepsilon_{it} \quad (3)$$

$$ACC_{it} = \alpha_0 + \alpha_1 MKTV\_EQUITY_{it} + \alpha_2 GROWTH_{it} + \alpha_3 CHG\_CMSTK_{it} + \alpha_4 LEV_{it} + \alpha_5 CHG\_TLIAB_{it} + \alpha_6 TURN_{it} + \alpha_7 AUD_{it} + \alpha_8 OWN_{it} + \varepsilon_{it} \quad (4)$$

where, *ACC* is net operating income minus cash flow from operating activities, scaled by year-end total assets; remaining variables were defined below Eq. (1).

The fourth earnings management metric suggested by Barth et al. (2007b) measures whether firms manage towards positive earnings is the coefficient on small positive net income, *SPOS*, in the regressions given by Eqs. (5) and (6). A negative coefficient on *SPOS* indicates that sample firms manage earnings toward small positive amounts more frequently in the pre-adoption period than they did in the post-adoption period.<sup>17</sup> When comparing the sample firms in the pre- and post-EAS adoption years, I estimate Eq. (5) by pooling observations from the pre- and post-adoption periods. The following Eq. (5) is estimated using sample firm observations pooled for both years around each event.

$$PREPOST_{it} = \alpha_0 + \alpha_1 SPOS + \alpha_2 MKTV\_EQUITY_{it} + \alpha_3 GROWTH_{it} + \alpha_4 CHG\_CMSTK_{it} + \alpha_5 LEV_{it} + \alpha_6 CHG\_TLIAB_{it} + \alpha_7 TURN_{it} + \alpha_8 OCF_{it} + \alpha_9 AUD_{it} + \alpha_{10} OWN_{it} + \varepsilon_{it} \quad (5)$$

where, *PREPOST* is an indicator variable that equals one for observations in the immediate year post-adoption (i.e., 1998 and 2007) year and zero otherwise; remaining variables were defined below Eq. (1).

**4.2.1.2 Timely loss recognition** Timeliness is a component of conservatism and transparency, both of which are desirable attributes of accounting earnings, and can be measured using market-based measures as the explanatory power of a reverse regression of earnings on returns (Francis et al. 2004), or using accounting-based measures such as the frequency of large negative net income (Barth et al. 2007b; Lang et al. 2003, 2006). Due to market data limitations, I follow the latter approach to measuring timeliness in this study; it is the coefficient on a variable indicating large negative net income, *LNEG*, in a regression of *LNEG* on *PREPOST*, a categorical variable representing the year of and the year after adoption of an EAS version, in addition to a set of firm control variables, as shown in Eq. (6). The metric, *LNEG*, is used to test H4. I follow these researchers in measuring *LNEG* as an indicator variable that equals one for observations for which annual net income scaled by total assets is less than 0.20, and zero otherwise. A positive coefficient on *LNEG* indicates that sample firms recognize large losses more frequently in the post-adoption year compared to the pre-adoption year. To estimate Eq. (6), I pool firms from the two pre- and post-adoption years.

<sup>17</sup> I follow Barth et al. (2007b) and Lang et al. (2006) in analyzing small positive and large negative net income using OLS estimation rather than from logit estimation because logit models are extremely sensitive to the possible effects of heteroscedasticity (Greene 1993).

$$\begin{aligned}
 PREPOST_{it} = & \alpha_0 + \alpha_1 LNEG + \alpha_2 MKTV\_EQUITY_{it} + \alpha_3 GROWTH_{it} + \alpha_4 CHG\_CMSTK_{it} \\
 & + \alpha_5 LEV_{it} + \alpha_6 CHG\_TLIAB_{it} + \alpha_7 TURN_{it} + \alpha_8 OCF_{it} + \alpha_9 AUD_{it} \\
 & + \alpha_{10} OWN_{it} + \varepsilon_{it}
 \end{aligned} \tag{6}$$

#### 4.2.2 Firm valuation metric: Tobin's $q$

In this study, I follow Daske et al. (2007) in measuring Tobin's  $q$  as: (total assets – book value of equity + market value of equity) scaled by total assets, approximating market-to-book ratio. When  $q$  exceeds one, it is less costly to build a company from scratch than to buy an existing one at the higher price, while it is less costly to buy rather than build a company when  $q$  is less than one (Yardeni 2003). Higher earnings quality normally increases the market value of equity and hence Tobin's  $q$ .

The market impact of accounting events is a common research topic (e.g., Barth and McNichols 1994), which builds on the information content of accounting information. A higher Tobin's  $q$  thus reflects higher investor confidence with respect to firm growth potential, and vice versa. The higher market expectation may also result from an increased usefulness of accounting numbers due to the adoption of new standards, which reduce investor information risk and improves the ability of external users to monitor management. A lower  $q$  may result from the new standards reducing management's ability to signal private information to investors or fails to fit into the local environment as the prior GAAP (Daske et al. 2007). Therefore, I predict a positive sign for Tobin's  $q$ .

However, the expected direction may not be found in this study for one possible reason. The adoption of IAS does not just entail costs that are captured by Tobin's  $q$ , but was also found to increase the book value of equity (denominator in Tobin's  $q$  calculation) compared to most local GAAP, regardless of the capital-market effects (Daske et al. 2007; Hung and Subramanyam 2007). This later effect may results in a downward bias in Tobin's  $q$ .

I obtain financial data from *Kompass Egypt* and gather fiscal-year end prices and the number of shares outstanding from CMA Bulletins and firms' publicly available financial statements. Following prior research (e.g., Daske et al. 2007; Lang et al. 2004), the Tobin's  $q$  for the 1997 and 2006 regressions include the following control variables: firm size, financial leverage, asset growth and the median industry  $q$ . I estimate the following regression model:

$$\begin{aligned}
 CHGTOBINQ_{it} = & \alpha_0 + \alpha_1 PREPOST_{it} + \alpha_2 ASSET\_GROWTH_{it} \\
 & + \alpha_3 MKTV\_EQUITY_{it} + \alpha_4 LEV_{it} + \alpha_5 TOBINQIND_{it} + \varepsilon_{it}
 \end{aligned} \tag{7}$$

where,  $CHGTOBINQ$  is the change in Tobin's  $q$  (computed as total assets – book value of equity + market value of equity, scaled by year-end total assets) from last year;  $ASSET\_GROWTH$  is the 1-year percentage change in total assets;  $TOBINQIND$  is the median Tobin's  $q$  for an industry (same two-digit SIC code) for the year; remaining variables were defined below Eq. (1).

Prior research finds that asset growth and industry Tobin's  $q$  are positively associated with the change in Tobin's  $q$ , while leverage and market value of equity are negatively associated with the change in  $q$  (Servaes 1991; Lang and Stulz 1994; Daske et al. 2007). I make the same predictions in the analysis conducted in this study.

### 4.3 Limitations

In conducting the analysis, I face a number of empirical challenges. The first is that the EAS were issued as part of a wider economic incentives regime that also included tax breaks and investment incentives. It is possible that the empirical results be confounded by the larger economic impact of these governmental measures. Further, the government has announced its intention to adopt IAS, and, in anticipation, some sample firms may have decided to pre-empt the official adoption and prepare IAS-based financial statements, leading to improvement in earnings quality of these firms. Anticipation effects are a common concern in studies examining the impact of IAS adoption (see, e.g., Aubert and Dumontier 2007). Further, market participants may anticipate the earnings quality impact of the standards under preparation, resulting in a mild market reaction to EAS adoption upon its release. In partial mitigation of this problem, I repeat the 1997–1998 analysis using 2 years before adoption and 2 years after.<sup>18</sup> Another challenge is that the first-time adoption of IAS may create short-lived adoption effects, making it harder for analysts to forecast future earnings under the new accounting system (Daske et al. 2007).

## 5 Empirical results

In this section, I present the empirical results of the analysis conducted on the firm earnings quality and market valuation using a sample period of 2 years for each event: the year of EAS adoption and the year after adoption.<sup>19</sup>

### 5.1 Earnings quality: the 1997 EAS adoption

Table 4 presents descriptive statistics of analysis variables.<sup>20</sup> With respect to the first event, the mean change in net operating income and change in operating cash flow are much higher in the first year of applying the first EAS version compared to the prior year (1997). However, mean accruals is also higher in 1998 compared to 1997, indicating that the increase in the change in net income is not entirely attributable to operating cash flows. Additionally, the average number of small positive earnings and the average number of large negative earnings is lower in 1998, which suggests lower earnings management practices after the 1997 EAS version. An advantage of using multiple earnings management and timely loss recognition metrics is that it helps in identifying the causes of earnings quality differences pre- and post-adoption of EAS (Barth et al. 2007b).

Table 5 shows the results of comparing earnings quality for firms listed on the Egyptian stock exchange in 1997 (year of EAS first version adoption) and 1998 (year after adoption). It reveals that the passage of the 1997 EAS did not significantly affect earnings quality of listed firms. Regarding the earnings management metrics, the first result is that the variance of the 1998 *CHGNOP* residuals (0.08) is *higher* than the 1997 *CHGNOP* residuals (0.012),

<sup>18</sup> Results do not change upon expanding the sample 1 year in each direction.

<sup>19</sup> Most earnings quality studies use 10 years of data to generate metrics. However, due to data limitations, I only use 1 year before and after each event. However, for the 1997 EAS event, I repeat the analysis using 2 years before (1996 and 1997) and 2 years after (1998 and 1999). The results are qualitatively similar to the results provided by the 1 year before and 1 year after analysis. This could not have been done for the 2006 EAS analysis because it requires data for 2008, which will not be available till the year 2009.

<sup>20</sup> Due to non-normality concerns, all variables are truncated at the first and 99th percentile to impose normality on the dataset.

**Table 4** Descriptive statistics

Variables	First event				Second event							
	1997		1998		2006		2007					
	Mean	Median	Std. dev.	Mean	Median	Std. dev.	Mean	Median	Std. dev.			
<b>Main variables</b>												
<b>Dependent variables</b>												
<i>CHGNOP</i>	-0.01	0.00	0.13	0.16	0.00	1.39	0.001	0.002	0.07	0.04	0.011	0.43
<i>CHGOCF</i>	-4.15	-0.50	21.17	0.52	-0.36	5.99	-0.001	-0.001	0.23	-0.01	-0.002	0.25
<i>ACC</i>	0.09	0.06	0.20	0.19	0.02	1.42	0.00	0.01	0.20	0.06	0.02	0.05
<i>OCF</i>	0.04	0.06	0.21	0.08	0.08	0.13	0.11	0.09	0.21	0.09	0.09	0.18
<i>PREPOST</i>	0.50		0.50	0.50		0.50	0.50		0.50	0.50		0.50
<i>CHGTBINQ</i>	0.13	0.03	0.61	-0.66	-0.29	0.82	0.30	-0.16	2.81	-1.04	0.12	8.84
<b>Independent variables</b>												
<i>SPOS</i>	0.03	0.00	0.16	0.01	0.00	0.08	0.01	0.00	0.12	0.02	0.00	0.14
<i>LNEG</i>	0.70	1.00	0.22	0.48	0.00	0.50	0.78	1.00	0.42	0.76	1.00	0.42
<b>Control variables</b>												
<i>LEV</i>	3.07	1.66	4.19	2.48	1.74	2.24	1.22	0.78	1.71	1.25	0.71	1.935
<i>GROWTH</i>	18.59	6.09	84.65	-10.80	-6.42	158.19	30.80	10.23	144.33	43.88	11.98	202.66
<i>CHG_CMSTK</i>	1074.8	10.70	1.04	107.55	5.55	576.3	22.56	0.00	116.98	14.77	0.00	52.98
<i>CHG_TLIAB</i>	19.2	60.06	67.26	88.52	-11.50	592.82	15.91	3.34	66.87	21.84	2.93	77.75
<i>TURN</i>	0.76	0.64	0.57	0.85	0.59	1.45	0.79	0.68	0.69	0.85	0.68	0.81
<i>MKTV_EQUITY</i>	5.26	5.26	0.84	5.54	5.34	0.55	11.62	11.31	1.96	12.77	12.63	1.92
<i>AUD</i>	2.28	3.00	1.49	2.46	3.00	1.59	2.20	2.00	1.08	2.40	2.00	1.19

**Table 4** continued

Variables	First event				Second event									
	1997		1998		2006		2007							
	Mean	Std. dev.	Median	Std. dev.	Mean	Median	Std. dev.	Mean	Median	Std. dev.				
<i>OWN</i>	1.95	0.00	2.55	0.00	1.88	0.00	2.47	0.00	1.29	0.00	2.29	1.22	0.78	1.71
<i>ASSET GROWTH</i>	0.20	0.14	0.46	1.03	0.43	1.03	0.12	0.07	0.17	0.07	0.52	0.15	0.08	0.44
<i>TOBINQIND</i>	1.47	1.17	1.81	1.27	1.56	1.27	1.83	0.93	1.01	0.93	0.31	1.25	1.12	0.43

Sample of Egyptian listed firms that have financial statement information available on *Kompass Egypt* database. Tabulated statistics are for the years on and before the 1997 and 2006 Ministerial Decrees, respectively

*CHGNOP* is the change in operating income after depreciation, amortization, and depletion but before extraordinary items, scaled by year-end total assets; *CHGOCF* is the change in annual net cash flow, *OCF*, where cash flow is scaled by year-end total assets; *ACC* is net operating income minus cash flow from operating activities, scaled by year-end total assets; *SPOS* is an indicator that equals 1 for observations with annual net operating income scaled by total assets between 0.00 and 0.01; *LNEG* is an indicator that equals 1 for observations with annual net operating income scaled by total assets less than -0.20; *LEV* is year-end total liabilities divided by year-end book value of equity; *GROWTH* is annual percentage change in sales; *CHG\_CMSJK* is annual percentage change in common stock; *CHG\_TLIAB* is annual percentage change in total liabilities; *TURV* is sales divided by year-end total assets; *MKTV\_EQUITY* is the natural logarithm of market value of equity in millions of Egyptian pounds as of the end of the year; *AUD* is an indicator that assumes values from 1 to 4 according to whether the auditor was CAO, Big 4 (or Big 4-associated), non-Big 4 international, or local (0 if missing); *OWN* is a categorical variable assuming values from 1 to 9 according to whether one shareholder directly owns over 50% of the firm's outstanding shares to no recorded shareholder with more than 25% direct or total ownership, 0 if status is unknown; *CHGTQINQ* is the change in the firm's Tobin's *q* (computed as total assets—book value of equity + market value of equity, scaled by year-end total assets) from last year; *ASSET\_GROWTH* is the 1-year percentage change in total assets; *TOBINQIND* is the median Tobin's *q* for an industry (same two-digit SIC code) for the year. All accounting and market data are measured as of fiscal year-end. All variables are truncated at the first and 99th percentile

**Table 5** Earnings quality around the 1997 EAS application

	Predicted sign	Hypothesis tested	Year of adoption		Year before adoption		Differential impact of 1997 EAS
			1998 (N = 153 firms)	1997–1998 (N = 306 firms)	1997 (N = 153 firms)	1996–1997 (N = 306 firms)	
<b>Earnings management</b>							
Variance of <i>CHGNOP</i> residuals	1998 > 1997	H1	0.08		0.01		0.07
Ratio of variance of <i>CHGNOP</i> residuals over variance <i>CHGOCF</i> residuals	1998 > 1997	H1	0.04		0.001		0.04
Spearman corr. of <i>ACC</i> and <i>OCF</i> residuals	1998 > 1997	H2	-0.07*		-0.80***		0.73**
Small positive earnings ( <i>SPOS</i> )	-	H3		-0.53		0.37	-0.90
Timely loss recognition							
Large negative earnings ( <i>LNEG</i> )	+	H4		-0.19***		-0.02	-0.16***

Results of comparing the earnings management and loss recognition metrics: earnings variability, ratio of change in income residuals to change in operating cash flow residuals, Spearman correlation of accruals and cash flows, management towards positive earnings, and timely recognition of losses. Tabulated statistics for the year of and before the 1997 Ministerial Decrees were provided in Table 4

but not significant. The difference (0.068) represents 3.5% of the total variance of the change in net income in 1998. The second result indicates that the ratio of the variance of the change in net operating income residuals, *CHGNOP* residuals, to the variance of the change in operating cash flow residuals, *CHGOCF* residuals, is also higher in the year post 1997 EAS adoption (0.04) compared to the prior year (0.001), and the difference is not significant. Although support for H1 was not found, the higher variability in earnings explained by variability in operating cash flows post-1997 EAS adoption, along with the higher earnings variability post-adoption, indicates that adoption did improve earnings quality for Egyptian listed firms, albeit not significantly.

Consistent with the first two results, the correlation between the residuals from total accrual, *ACC*, regression and the residuals from net operating cash flow, *OCF*, regression is significantly less negative for the post 1997 EAS adoption year ( $-0.073$ ) compared to the year prior to adoption ( $-0.800$ ), and hence support for H2 (1997) was found. Finally, the coefficient on *SPOS*, the variable denoting management towards small positive earnings, was estimated for the 1997–1998 period as well for the prior period 1996–1997 (a benchmark period). The coefficient for the 1997–1998 regression ( $-0.530$ ) is negative, although insignificant, suggesting that sample firms managed earnings toward small positive amounts less frequently in the post-adoption year than they did in the post-adoption year, and hence no support was found for H3 (1997). To understand the impact of the 1997 EAS on *SPOS* activities, I estimate the same regression using data for 1996–1997 (as a benchmark period), and find that the coefficient on *SPOS* (0.368) is positive but insignificant. Although insignificant, the positive coefficient indicates that prior to the 1997 EAS firms used to manage towards small positive earnings, but that the trend may be tapering down.

As for timely loss recognition, the variable *LNEG*, which captures the existence of large negative earnings during the EAS adoption period, was estimated for the 1997–1998 period as well as for the benchmark period of 1996–1997. *LNEG* was significantly negative ( $-0.185$ ) for the 1997–1998 period, indicating that firms recognized losses less frequently in the post-adoption period than in the prior period, and hence does not provide support for H4 (1997). I further estimate the equation for the 1996–1997 period, and find that the coefficient on *LNEG* is negative ( $-0.022$ ) for the benchmark period (1996–1997), that is, smaller for the 1997 compared to 1996, but not significantly so. The magnitude of the effect is more pronounced in the post-1997 EAS adoption period. It may seem plausible to infer that avoiding the recognition of large negative earnings is a pattern that continues unchanged even after the adoption of IAS-based EAS. Except for the last finding, the results of estimating the extent of earnings management are consistent and expected. The findings suggest that the 1997 EAS adoption may have reduced earnings management practices to some extent, which contributes to a higher earnings quality.

## 5.2 Earnings quality: the 2006 EAS adoption

Table 6 shows the results of comparing earnings quality for firms listed on the Egyptian stock exchange in 2006 (year of EAS third version adoption) and 2007 (year after adoption). Similar to the first event analysis EAS version, data indicates that the passage of the 2006 EAS lowered earnings management by listed firms, although most of the results are insignificant. Regarding earnings management metrics, the first result is that the variance of the 2007 *CHGNOP* residuals (0.164) is much higher than the 2006 *CHGNOP* residuals (0.004), despite being insignificant. The difference (0.16) represents 86.5% of the total variance of the change in net income ( $0.16/0.43^2$ ).



**Table 6** Earnings quality around the 2006 EAS application

	Predicted sign	Hypothesis tested	Year of adoption		Year before adoption		Differential impact of 2006 EAS
			2007 (N = 141 firms)	2006–2007 (N = 282 firms)	2006 (N = 141 firms)	2005–2006 (N = 282 firms)	
<b>Earnings management</b>							
Variance of <i>CHGNOP</i> residuals	2007 > 2006	H1	0.16		0.004		0.16
Variance of <i>CHGNOP</i> residuals over variance <i>CHGOCF</i> residuals	2007 > 2006	H1	0.17		0.04		0.13
Spearman correlation of <i>ACC</i> residuals and <i>OCF</i> residuals	2007 > 2006	H2	-0.31***		-0.52***		0.22***
Small positive earnings ( <i>SPOS</i> )	-	H3		0.03		-0.04	0.07
Timely loss recognition		H4					
Large negative earnings ( <i>LNEG</i> )	+			0.03		0.71***	-0.68

Results of comparing the earnings management and loss recognition metrics: earnings variability, ratio of change in income residuals to change in operating cash flow residuals, correlation of accruals and cash flows, management towards positive earnings, and timely recognition of losses. Tabulated statistics for the year of and before the 2006 Ministerial Decrees were provided in Table 4

\*\*\*, \*\*, \* indicate significance at the 1%, 5%, and 10% level, respectively

*CHGNOP* is the change in operating income after depreciation, amortization, and depletion but before extraordinary items, scaled by year-end total assets; *CHGOCF* is the change in annual net cash flow, *OCF*, where cash flow is scaled by year-end total assets; *ACC* is net operating income minus cash flow from operating activities, scaled by year-end total assets; *SPOS* is an indicator that equals 1 for observations with annual net operating income scaled by total assets between 0.00 and 0.01; *LNEG* is an indicator that equals 1 for observations with annual net operating income scaled by total assets less than -0.20; All accounting and market data are measured at firms' fiscal year-end. All variables are truncated at the first and 99th percentile

Additionally, the ratio of the variance of the change in net operating income residuals, *CHGNOP* residuals, to the variance of the change in operating cash flow residuals, *CHGOCF* residuals, is higher in the year post 2006 EAS adoption (0.172) compared to the prior year (0.042), but the difference is insignificant. Similar to the 1997 EAS results, the higher variability in earnings explained by variability in operating cash flows post 1997 EAS adoption, along with the higher ratio of earnings variability explained by cash flow variability post-adoption, provide weak evidence of the effectiveness of the 2006 EAS in improving earnings quality for Egyptian listed firms. However, the insignificance of the results sheds some doubts on the results and shows that support for H1 (2006) is lacking.

Consistent with the first two results, the correlation between the residuals from total accrual, *ACC*, regression and the residuals from net operating cash flow, *OCF*, regression is significantly less negative for the year post 2006 EAS adoption (-0.307) compared to the year prior to adoption (-0.524). Therefore, support for H2 was found. Finally, the coefficient on *SPOS*, 0.028, from the 2006–2007 regression is positive and insignificant, suggesting that sample firms report less small positive earnings post 2006 EAS adoption compared to the prior year. As in the 1997 analysis above, I re-estimate the same regression using data for 2005–2006 (a benchmark), and find that the coefficient on *SPOS* is -0.043, that is, negative but still insignificant. This last finding indicates that the practice of manipulating earnings towards a positive threshold has been reduced post adoption. Support for H3 was therefore not found.

The final earnings management metric, *LNEG* was estimated for the 2006–2007 test period as well the prior period 2005–2006 (a benchmark period). The coefficient on *LNEG* was significantly positive (0.033) in the 2006–2007 analysis, that is, greater for the post-adoption period compared to the pre-adoption period. This indicates that firms recognized losses more frequently in the post-adoption year than in the prior year. I re-estimate the same equation using 2005–2006 data (benchmark), and find that the coefficient on *LNEG* is significantly positive (0.714) for the benchmark period (2005–2006), that is, greater for the 2006 compared to 2005. Consistent with the 1997 EAS impact, it seems that the 2006 EAS improved firms' earnings quality, but not significantly so.

However, the last column to the right in each of Tables 5 and 6 shows the differential impact of the respective EAS version. Most of the differential indicators in these two columns point towards slightly better (although insignificant) success by the 2006 EAS version in reducing earnings management compared to the first EAS version applied in 1997. However, due to the different time of issuing each of these standards, many confounding variables at work could serve to undermine this last statement. Therefore, support for H4 (2006) was not found.

### 5.3 Firm valuation: the 1997 and 2006 EAS adoption

Table 7 shows the results of regressing the change in sample firms' Tobin's *q* on an indicator variable representing the period around the mandatory adoption of an EAS version, along with control variables strongly suggested by prior literature as important predictors of Tobin's *q*. Tobin's *q* is the measure of choice in assessing the impact on firm valuation because it captures changes in growth expectations and IAS-related costs (e.g., implementation costs) and does not rely on analyst forecasts, which could be affected by changes in accounting standard (Daske et al. 2007). The table shows the results for the two events under investigation side by side.

With respect to the 1997 EAS, the descriptive statistics shown in Panel A of Table 7 indicate that the 1998 change in Tobin's *q* is negative (-0.66), hence suggesting a decrease

**Table 7** Changes in firm valuation around the 1997 and 2006 EAS application

Variables	1998		2007	
	Mean	Std. dev.	Mean	Std. dev.
<i>Panel A: Descriptive statistics of test variables</i>				
<i>CHGTOBINQ</i>	-0.66	0.82	-1.04	5.58
<i>PREPOST</i>	0.50	0.50	0.50	0.50
<i>ASSET_GROWTH</i>	0.43	0.12	0.15	0.44
<i>LEV</i>	2.48	2.24	1.25	1.93
<i>MKTV_EQUITY</i>	5.54	0.55	12.77	1.92
<i>TOBINQIND</i>	1.56	1.83	1.25	0.43
Variables	Test of significance			
	1998		2007	
	Predicted sign	Standardized coefficients	Predicted sign	Standardized coefficients
<i>Panel B: Results of OLS regression</i>				
Test variable				
<i>PREPOST</i>	+	-0.21***	+	-0.03
Control variables				
<i>ASSET_GROWTH</i>	+	-0.02	+	-0.03
<i>LEV</i>	-	0.04	-	-0.01
<i>MKTV_EQUITY</i>	-	0.22***	-	-0.02
<i>TOBINQIND</i>	+	0.02	+	-0.02
$R^2$		0.09		0.00
Adjusted $R^2$		0.07		0.01
<i>F</i> -statistic		5.74***		0.23

Results of regressing change in Tobin's  $q$  on the *PREPOST* categorical variable (denoting the year before and the year of an EAS version adoption) and control variables representing firm asset growth, financial leverage, market value of equity, and the industry's median Tobin's  $q$ . The significance of the *PREPOST* coefficient as well as the  $R^2$  and *F*-statistics indicates whether there were changes corresponding to the adoption of a new EAS version. This analysis is conducted for the 1996 and the 2007 EAS version separately. Tabulated statistics are for the first year after the adoption of the 1997 and 2006 Ministerial Decrees, respectively

Table values are coefficient estimates from the OLS regression model:  $CHGTOBINQ = f(PREPOST, ASSET\_GROWTH, LEV, MKTV\_EQUITY, TOBINQIND)$

\*\*\*, \*\*, \* indicate significance at the 1%, 5%, and 10% level, respectively

The dependent variable *CHGTOBINQ* represents the change in Tobin's  $q$  from prior year. Tobin's  $q$  is (total assets - book value of equity + market value of equity) divided by total assets. *PREPOST* is an indicator variable indicating the year (0 represents the most recent year prior to the adoption of an EAS version (i.e., 1997 or 2006), 1 represents the year where the new EAS is effective (i.e., 1998 or 2007)). *ASSET\_GROWTH* is measured as the percent change in total assets. *LEV* is measured as total liabilities divided by total stockholders' equity. *MKTV\_EQUITY* is the market value of equity and measured as the closing price of a firm's stock in the Egyptian stock exchange on the fiscal year-end date multiplied by the outstanding number of shares. *TOBINQIND* is the median Tobin's  $q$  for an industry (same two-digit SIC code) for the year. A negative *PREPOST* figure suggests a reduction in the sample firms' Tobin's  $q$  after adoption of the new EAS version

in listed firms valuation following the adoption of the 1997 EAS. Likewise, the 2007 change in  $q$  is also negative, suggesting another decrease in firm valuation following the adoption of the 2006 EAS. While these descriptive statistics do not incorporate the effects of control variables and it is inadvisable to draw conclusions from them directly, the negative means of the changes in  $q$  seem to support (and be explained by Daske et al. (2007)) that the adoption of IAS-based standards results in a downward biases to the change in  $q$ .

The OLS regression for the 1997 EAS results in Panel B shows that the coefficient of *PREPOST* is significantly negative ( $-0.21$ ), which suggests that the adoption of the new standards negatively affected Tobin's  $q$ , and thus lending support for H5 (1997). That is, in the year of the first EAS version adoption, firms exhibit a significant decrease in firm value compared to the prior year. Evaluated at the pre-adoption mean of 3.50 in 1997, the  $q$  of adopting firms decreases to a mean of 1.41 in 1998, potentially, as a result of the impact IAS-based standards have on increasing reported book value of equity figures. While the adjusted  $R^2$  is modest (7.2%), the model seems to have explanatory power as evidenced by the highly significant  $F$ -statistic, suggesting proper model specification. The significant *PREPOST* coefficient may suggest unfavorable market reaction to the EAS adoption, but it is more probable that the  $q$  reduction following the accounting standards adoption is due to the increase in the denominator of the  $q$  equation. This finding is consistent with conclusions from prior literature (e.g., Pae et al. 2006, and others).

On the other hand, results for the 2006 EAS version was not as clear. The specified model is not significant, as evidenced by the extremely low  $R^2$  (1%) and the insignificant  $F$ -statistic. The coefficient on the *PREPOST* variable was negative but insignificant, potentially suggesting market indifference to the new standards, and thus not lending support for H5 (2006). Mean  $q$  of the adopting firms for the pre-adoption year is 1.61 in 2006, but decreases to a mean of 1.40 in 1998. That is, like the results for the first EAS version analysis, the year of the third EAS version adoption (2007) sees firms exhibiting a decrease in firm value compared to the prior year. However, unlike the first event, the *PREPOST* coefficient is insignificant. One possible justification is that the third version does not involve a radical change to the prevailing accounting regime (as was the case with the first IAS-based EAS version) and hence market participants downplayed its impact on firm financial performance. After all, the 2006 EAS represents only a major modification to an existing IAS-based accounting system.

## 6 Discussion and conclusion

This study examines the impact of the mandatory adoption of international accounting standards in Egypt on earnings quality and market valuation of listed firms. Many studies document the enhanced usefulness of financial reports in countries adopting the international standards issued by the IASB/IASC (e.g., Daske et al. 2007; Hung and Subramanyam 2007).

Based on suggestions in prior research that higher earnings quality is evidenced by lower earnings management, the findings of this study are threefold. First, while the results are mostly not significant, it seems that the 1997 EAS had a positive impact in reducing earnings management by Egyptian listed firms. This is evident in Table 5, which shows that in comparison to the pre-adoption year, the 1997 EAS adoption witnessed higher variance of the change in net income, higher ratio of the variances of the change in net income and change in cash flows, less negative correlation between accruals and cash flows, and lower frequency of small positive net income. However, it seems that

recognizing large losses has lagged behind and has not been affected by the new standards. The lack of significance could be due confounding factors not taken into consideration in the study or due to the fact that during the time period covered by the first event, the stock market was still in its early years of recovery after decades of inactivity (Azab 2002). Lack of understanding of market mechanisms and still primitive market infrastructure could have blurred the effect of the EAS adoption.

Second, the 2006 test results shown in Table 6 were mostly insignificant, however, and point at the conclusions similar to those for the 1997 event mostly insignificant results. It seems that the 2006 EAS had a positive impact in reducing earnings management by Egyptian listed firms. The year of 2006 EAS adoption experienced higher variance of the change in net income, higher ratio of the variances of the change in net income and change in cash flows, and less negative correlation between accruals and cash flows. However, findings indicate poor performance on controlling firms' managing towards small positive net income and firms' recognizing large losses. Since most Egyptian firms actively rely on bank financing (Levine 2002), where loss reporting by firms in debt could trigger immediate debt payment, these firms may avoid loss reporting to fend off debt payment requests by banks (Easton et al. 2009). Overall, it may be argued that the EAS 1997 and 2006 versions had a weak positive impact on most dimensions of earnings quality, but that the results are inconclusive.

Extant research claims that IAS reduces the set of allowable accounting treatments and thereby decreases management's ability to manipulate earnings. The results of this study concur with this statement, whereby I find that earnings management decreases post adoption of the consecutive EAS versions under investigation. Analyzed in the light of prior research, the insignificant results of earnings quality may be caused by several competing reasons. Experts point at weaknesses in the infrastructure of the accounting profession as well as lack of serious enforcement of accounting regulations, as primary reasons for not observing a conclusive improvement in the earnings quality of Egyptian firms. Prior literature suggests that weak enforcement of the standards reduces firm compliance to these standards, consequently diminishing their effectiveness (Burgstahler et al. 2006; Cairns 1999).

In the case of Egypt, a World Bank (2002) report cites weak accounting institutions, poor training, language barriers, and fragile enforcement mechanisms challenges currently facing the Egyptian accounting and investment community. These deficiencies in the Egyptian accounting system are consistent with evidence from prior research pointing towards major transparency issues in financial reports prepared by Egyptian firms (Steier 2009). The World Bank study suggests that disclosure requirements and audit report format are not followed by many listed companies and their auditors, and also argues that punitive arrangements against violators, such as imposing fines and other sanctions, are weak or non-existent. Non-compliance could be caused by intentional effort to create information asymmetries or by structural deficiencies in accounting institutions. In Egypt, the main causes cited by the World Bank report and local experts (e.g., Tawfik 2006) for non-compliance is the improper training of accountants and auditors, inadequate regulatory enforcement mechanisms, and unavailability of adoption guidelines on Egyptian and international standards. Further, overextending well-trained auditors compromises quality control of their employers, and this may lead to noncompliance with accounting and auditing standards (World Bank 2002). Importantly for this study, the weak enforcement mechanisms in place cause divergence between the standards and actual practices, thereby potentially affecting the quality of financial statements of Egyptian firms.

The aggregate effect of these factors is a dilution of the impact of the IAS-based standards on earnings quality. Results of this study are consistent with these arguments and suggest that the same factors remain an obstacle in the face of efforts to reform the Egyptian accounting community. The moral of this study is that to attract investment into Egyptian stock markets, strong confidence should be available in financial reports issued by Egyptian preparers, and unless the quality of these reports is not questionable, investors will remain skeptical about techniques used in published accounting information, and investment will remain limited.

High financial reporting quality is a function of many variables besides earnings quality. Accountants implementing these standards have to be well-trained. Auditors have to earn certifications that attest to their ability to judge the fairness of financial statements prepared in accordance with EAS. CMA and other regulatory agencies have to possess the proper mechanisms for discouraging deviations from EAS. Serious enforcement mechanisms have to be continuously kept in place. This study presents evidence to Egyptian regulators that institutional and structural improvements in the accounting community must take place in order to have the impact of EAS on financial reporting quality be more pronounced.

Findings also indicate that firm market valuation (as measured by Tobin's  $q$ ) has been negatively affected by both EAS versions under investigation in this study. Tobin's  $q$  reflects market-to-book ratio, and changes in this variable reflect market expectations regarding firm growth potential. There are several potential reasons for the negative relation. It may have been caused by the enlarging impact IAS-based standards has on the book value of equity (Daske et al. 2007), resulting in a downward bias on Tobin's  $q$ . The negative relation may also result from unfavorable market perception of the impact of the new EAS version on firm earnings. Alternatively, it may be a result of confounding environmental variables that were not specified in the model. A more plausible explanation, however, points towards the degree of user sophistication and/or the effectiveness of the underlying mechanisms governing the Egyptian stock markets.

Earlier in the study, I pose the following questions with respect to the market effects of IAS-based standards adoption in Egypt: (1) Do accounting numbers carry information content in Egypt in its capacity as an emerging market, like in developing countries? and, if Egyptian market participants react to these events, (2) do they care about the quality of the standards applied or are they indifferent? Implicit in the results is evidence that accounting numbers produced by Egyptian preparers possess information content from the viewpoint of users of those numbers. This finding is consistent with prior research that argues for the value relevance of Egyptian firms accounting data (e.g., Abdel-Azim and Eldomiaty 2006; Omran and Pointon 2004; Ragab and Omran 2006). However, the answer to the second question of how important is the quality of standards in application remains unanswered due to concerns of measure bias. Data limitations restrict the examination of this issue using a pure market data measures of firm value.

Future research should look deeper into causes for the insignificant relations observed in this study, including the unexpected capital markets reaction to the adoption. Specifically, researchers may want to pinpoint the characteristics of non-compliers and suggest enforcement mechanisms to push non-compliers to abide by the IAS-based EAS. Additionally, it may also be interesting to study economic consequences to the adoption (and revisions) of IAS in Egypt, for example, cost of capital and market liquidity, both of which were thoroughly studied in prior literature (see, for example, Daske et al. 2007). Further, researchers may also look at the best models for forecasting firm returns and value, that is, whether an earnings-based, disaggregated earnings-based, or cash flow-based model possesses stronger explanatory power in predicting Egyptian firm returns.

**Acknowledgments** The author would like to thank Vivian Mehana, Magdy Samy, the participants of the 2009 AAA Annual Meeting and two anonymous reviewers for their insightful comments that helped shape this paper into this publishable form.

## References

- Abdel-Azim MH, Eldomiaty TI (2006) Informativeness of accounting information to shareholders in Egypt: perspectives from the most actively trading firms. *J Bus Public Aff* 1(1). <http://www.scientificjournals.org/journals2007/articles/1060.htm>
- Ali A, Hwang LS (2000) Country-specific factors related to financial reporting and the value relevance of accounting data. *J Acc Res* 38(1):1–25
- Armstrong C, Barth ME, Jagolinzer A, Riedl EJ (2007) Market reaction to events surrounding the adoption of IFRS in Europe. Working Paper, Harvard Business School and Stanford University
- Asal M (1998) Are there trends towards efficiency for the Egyptian stock market? Working Paper, University of Goteborg
- Ashbaugh H (2001) Non-U.S. firms' accounting standard choices. *J Acc Public Policy* 20:129–153
- Ashbaugh H, Pincus M (2001) Domestic accounting standards, international accounting standards, and the predictability of earnings. *J Acc Res* 39:417–434
- Aubert F, Dumontier P (2007) Analyzing analysts' expertise: did analyst fully anticipate the impact of IFRS adoption on earnings? EAA Annual Congress, Lisbon
- Ayres F (1994) Perceptions of earnings quality: what managers need to know. *Manag Acc* 78(9):27–29
- Azab B (2002) The performance of the Egyptian stock market. Thesis, University of Birmingham
- Bae K-H, Tan H, Welker M (2007) International GAAP differences: the impact on foreign analysts. Working Paper, Queen's University and University of Northern British Columbia
- Ball R (2001) Infrastructure requirements for an economically efficient system of public financial reporting and disclosure. Brookings-Wharton Papers on Financial services, 4th Annual Conference
- Ball R, Brown P (1968) An empirical evaluation of accounting income numbers. *J Acc Res* 6(Autumn):159–177
- Ball R, Shivakumar L (2005) Earnings quality in U.K. private firms. *J Acc Econ* 39:83–128
- Ball R, Shivakumar L (2006) The role of accruals in asymmetrically timely gain and loss recognition. *J Acc Res* 44:207–242
- Ball R, Shivakumar L (2008) Earnings quality at initial public offerings. *J Acc Econ* 45(2–3):324–349
- Ball R, Kothari SP, Robin A (2000) The effect of international institutional factors on properties of accounting earnings. *J Acc Econ* 29:1–51
- Ball R, Robin AJ, Sadka G (2008) "Is financial reporting shaped by equity markets or by debt markets?" An international study of timeliness and conservatism. *Rev Acc Stud* 13(2–3):168–205
- Barragato AC, Markelevich A (2008) Earnings quality following corporate acquisitions. *Manag Finance* 34(5):304–315
- Barth M, McNichols MF (1994) Estimation and market valuation of environmental liabilities relating to superfund sites. *J Acc Res* 32(Supplement):177–209
- Barth M, Beaver WH, Landsman WR (2001) The relevance of the value relevance literature for accounting standard setting: another view. *J Acc Econ* 31:77–104
- Barth M, Konchitchki Y, Landsman WR (2007a) Cost of capital and financial statement transparency. Working Paper, Stanford University and University of North Carolina
- Barth M, Landsman W, Lang M (2007b) International accounting standards and accounting quality. Working Paper, Stanford University and University of North Carolina at Chapel Hill
- Bartov E, Goldberg S, Kim M (2005) Comparative value relevance among German, U.S. and international accounting standards: a German stock market perspective. *J Acc Aud Finance* 20(2):95–119
- Basu S (1997) The conservatism principle and the asymmetric timeliness of earnings. *J Acc Econ* 24:3–37
- Bellas A, Toludas K, Papadatos K (2007) The consequences of applying international accounting standards (IAS) to the financial statements of Greek enterprises. EAA Annual Congress, Lisbon
- Benston GJ (1985) The validity of profits-structure studies with particular reference to the FIC's line-of-business data. *Am Econ Rev* 75(3):37–67
- Bhattacharya U, Daouk H, Welker M (2003) The world price of earnings opacity. *Acc Rev* 78:641–678
- Bhattacharya N, Desai H, Venkataraman K (2009) Earnings quality and information asymmetry. Working Paper, Southern Methodist University
- Blanc L (2003) International accounting standards—the impact on your business system. Available at [www.oracle.com/lang/fr/applications/newsletter/WP\\_NormesIAS\\_Mars03.pdf](http://www.oracle.com/lang/fr/applications/newsletter/WP_NormesIAS_Mars03.pdf). Accessed 14 Aug 2008



- Burgstahler D, Dichev I (1997) Earnings management to avoid earnings decreases and losses. *J Acc Econ* 24:99–126
- Burgstahler D, Hail L, Leuz C (2006) The importance of reporting incentives: earnings management in European private and public firms. *Acc Rev* 81:983–1016
- Bushman RM, Piotroski JD, Smith AJ (2006) Capital allocation and timely accounting recognition of economic losses. Working Paper, University of North Carolina at Chapel Hill and University of Chicago
- Cahan S, Emanuel D, Sun J (2009) The effect of earnings quality and country-level institutions on the value relevance of earnings. *Rev Quant Finance Acc* 33(4):371–391
- Cairns D (1999) Degrees of compliance. *Accountancy Int* 124(1273):114–119
- Comprich JJ, Muller III KA, Stanford-Harris M (2003) Economic consequences from mandatory adoption of IASB standards in the European union. Working Paper, Penn State University
- Cormier D, Ledoux M-J, Magnan M (2009) Financial reporting transparency and earnings quality: a governance perspective. Working Paper, ESG UQAM and Concordia University
- Covrig VM, DeFond ML, Hung M (2007) Home bias, foreign mutual fund holdings, and the voluntary adoption of international accounting standards. *J Acc Res* 45:41–70
- Daske H, Gebhardt G (2006) International financial reporting standards and experts' perceptions of disclosure quality. *Abacus* 42:461–498
- Daske H, Hail L, Leuz C, Verdi RS (2007) Adopting a label: heterogeneity in the economic consequences of IFRS adoptions. Working Paper, University of Pennsylvania and University of Chicago
- Dechow PM (1994) Accounting earnings and cash flows as measures of firm performance: the role of accounting accruals. *J Acc Econ* 18:3–42
- Dechow MD, Dichev ID (2002) The quality of accruals and earnings: the role of accrual estimation errors. *Acc Rev* 77(Supplement):755–791
- DeFond M, Hung M, Trezevant R (2007) Investor protection and the information content of annual earnings announcements: international evidence. *J Acc Econ* 43(1):37–67
- Ding Y, Hope O-K, Jeanjean T, Stolowy H (2006) Differences between domestic accounting standards and IAS: measurement, determinants and implications. *J Acc Public Policy* 26:1–38
- Dumontier P, Raffouriner B (1998) Why firms comply with IAS: an empirical analysis with swiss data. *J Int Finance Manage Acc* 9(3):216–242
- Durnev A, Li K, Morck R, Yeung B (2003) Capital markets and capital allocation: implications for economies in transition. Working Paper, University of Miami, University of Alberta and New York University
- Easton PD, Nikolaev V, Van Lent L (2009) Price convexity, debt-related agency costs, and timely loss recognition. Working Paper, University of Chicago, University of Notre Dame, and Tilburg University
- Eaton T, Nofsinger J, Weaver D (2007) Disclosure and the cost of equity in international cross-listing. *Rev Quant Finance Acc* 29(1):1–24
- Eccher E, Healy P (2003) The role of international accounting standards in transitional economies: a study of the People's Republic of China. Working Paper, Massachusetts Institute of Technology
- Egyptian Wakaea (1997) Ministerial Decree No. 503/1997 on Egyptian accounting standards. 203 (Oct. 12). Cairo, Egypt, Al-Amiriya
- Ernst & Young (2007) IFRS: observations on the implementation of IFRS. EYGM Limited
- FASB (1978) Objectives of financial reporting by business enterprises. Statement of Financial Accounting Concepts No. 1. FASB, Stamford, CT
- Francis J, Wang D (2006) The Joint effect of investor protection and big 4 audits on earnings quality around the world. *Contemp Acc Res* 25(1):157–191
- Francis JR, LaFond R, Olsson P, Schipper K (2003) Accounting anomalies and information uncertainty. Working Paper, Duke University
- Francis J, LaFond R, Olsson P, Schipper K (2004) Cost of capital and earnings attributes. *Acc Rev* 79:967–1010
- Francis J, LaFond R, Olsson P, Schipper K (2005) The market pricing of accruals quality. *J Acc Econ* 39:295–327
- Gil-Alana L, Peláez R (2008) The persistence of earnings per share. *Rev Quant Finance Acc* 31(4):425–439
- Greene WH (1993) *Econometric analysis*, 2nd edn. Prentice Hall, Englewood Cliffs
- Griffin JM, Kelly PJ, Nardari F (2006) Measuring short-term international stock market efficiency. Working Paper, University of Texas at Austin, University of South Florida and Arizona State University
- Hail L (2003) The impact of voluntary corporate disclosures on the ex ante cost of capital for swiss firms. *Eur Acc Rev* 11:741–743
- Hail L, Leuz C (2006) International differences in the cost of equity capital: do legal institutions and securities regulation matter? *J Acc Res* 44:485–531
- Harris M, Muller K (1999) The market valuation of IAS versus US GAAP accounting measures using form 20-F reconciliations. *J Acc Econ* 26:285–312

- Hassan H (2008) The international accounting standards: where do we stand? *The Executive* (April–June): 28–29
- Healy PM (1985) The effect of bonus schemes on accounting decisions. *J Acc Econ* 7:85–107
- Healy PM, Hutton AP, Palepu KG (1999) Stock performance and intermediation changes surrounding sustained increases in disclosure. *Contemp Acc Res* 16:485–520
- Hung M (2001) Accounting standards and value relevance of financial statements: an international analysis. *J Acc Econ* 30:401–420
- Hung M, Subramanyam K (2007) Financial statement effects of adopting international accounting standards: the case of Germany. *Rev Acc Stud* 12(4):623–657
- IOSCO (2000) A resolution on IASC standards. International Organization of Securities Commissions
- Jiambalvo J (1996) Discussion of causes and consequences of earnings manipulation: an analysis of firms subject to enforcement actions by the SEC. *Contemp Acc Res* 13:37–47
- Jones J (1991) Earnings management during import relief investigations. *J Acc Res* 29:193–228
- La Porta R, Lopez-de-Silanes F, Shleifer A, Vishny R (2002) Investor protection and corporate valuation. *J Finance* 57:1147–1170
- Lambert RA, Leuz C, Verrecchia RE (2007) Accounting information, disclosure, and the cost of capital. *J Acc Res* 45:385–420
- Lang LHP, Stulz R (1994) Tobin's  $q$ , corporate diversification, and firm performance. *J Polit Econ* 102: 1248–1280
- Lang M, Raedy J, Yetman M (2003) "How representative are firms that are cross listed in the United States?" An analysis of accounting quality. *J Acc Res* 41:363–386
- Lang M, Lins KV, Miller DP (2004) Concentrated control, analyst following, and valuation: do analysts matter most when investors are protected least? *J Acc Res* 42:589–623
- Lang M, Raedy J, Wilson W (2006) Earnings management and cross listing: are reconciled earnings comparable to US Earnings? *J Acc Econ* 42:255–283
- LeCraw DJ (1984) Diversification strategy and performance. *J Ind Econ* 33:179–198
- Leuz C (2003) IAS versus US GAAP: Information asymmetry-based evidence from Germany's new market. *J Acc Res* 41:445–472
- Leuz C, Verrecchia RE (2000) The economic consequences of increased disclosure. *J Acc Res* 38:91–124
- Leuz C, Nanda D, Wysocki PD (2003) Earnings management and investor protection: an international comparison. *J Finance Econ* 69:505–527
- Levine R (2002) Bank-based or market-based financial systems: which is better? *J Finance Intermed* 11(4):398–428
- Levitt A (1998) The numbers game. Unpublished Remarks. Available at <http://www.sec.gov/news/speeches/spch220.txt>. Accessed 14 Aug 2008
- Lim C, Thong T, Ding D (2008) Firm diversification and earnings management: evidence from seasoned equity offerings. *Rev Quant Finance Acc* 30(1):69–92
- Lin H, Paananen M (2007) The development of value relevance of IAS and IFRS over time: the case of Germany. Working Paper, University of Hertfordshire
- Liu J, Nissim D, Thomas J (2002) Equity valuation using multiples. *J Acc Res* 40(1):135–172
- Montgomery CA, Birger W (1988) Diversification, Ricardian rents, and Tobin's  $q$ ". *RAND J Econ* 19(4):623–632
- Omran M, Pointon J (2004) Dividend policy, trading characteristics and share prices: empirical evidence from Egyptian firms. *Int J Theor Appl Finance* 7(2):121–133
- Omran M, Ragab A (2004) Linear versus non-linear relationships between financial ratios and stock returns: empirical evidence from Egyptian firms. *Rev Acc Finance* 3(2):84–102
- Özkan S, Durukan MB, Dalkilic F (2007) Approaches to measuring quality of earnings and discussion of the applicability of these approaches of these approaches to Istanbul Stock Exchange (ISE) companies. Working Paper, University of Izmir
- Pae J (2005) Expected accrual models: the impact of operating cash flows and reversals of accruals. *Rev Quant Finance Acc* 24(1):5–22
- Pae J, Thornton D, Welker M (2006) The reduction of firms' ownership induced agency costs following financial reporting reform in the European union. Working Paper, Queen's University
- Pagano M, Röell A, Zechner J (2002) The geography of equity listings: why do companies list abroad? *J Finance* 57:2651–2694
- Platikanova P (2007) Market liquidity effects of the IFRS introduction in Europe. Working Paper, University Pompeu Fabra
- PwC/Ipsos MORI (2007) Has the dust settled yet? PricewaterhouseCoopers LLP
- Radebaugh LH, Gray SJ, Black EL (2006) International accounting and multinational enterprises, 6th edn. Wiley, New York

- Ragab AA, Omran M (2006) Accounting information, value relevance, and investors' behavior in the Egyptian equity market. *Rev Acc Finance* 5(3):279–297
- Schipper K (1989) Commentary on earnings management. *Acc Horizons* 3:91–102
- Schipper K, Vincent L (2003) Earnings quality. *Acc Horizons* 17(Supplement):97–110
- Servaes H (1991) Tobin's  $q$  and gains from takeovers. *J Finance* 46:409–419
- Sloan RG (1996) Do stock prices fully reflect information in accruals and cash flows about future earnings? *Acc Rev* 71:289–315
- Steier LP (2009) Familial capitalism in global institutional contexts: implications for corporate governance and entrepreneurship in East Asia. *Asia Pacific J Manag* 26(3):513–535
- Tarca A (2005) International convergence of accounting practices: choosing between IAS and US GAAP. *J Int Finance Manag Acc* 15:60–91
- Tawfik MS (2006) Preliminary remarks on the third version of the Egyptian accounting standards. Available at <http://mstawfik.bizhosting.com>. Accessed 14 Aug 2006
- Verrecchia RE (2001) Essays on disclosure. *J Acc Econ* 32:91–180
- Welker M (1995) Disclosure policy, information asymmetry, and liquidity in equity markets. *Contemp Acc Res* 11:801–827
- World Bank Report on the Observance of Standards and Codes (ROSC): Egypt (Accounting and Auditing). World Bank (2002)
- Yardeni E (2003) Stock valuation models (4.1): Topical Study #58. Prudential Financial Research, Newark, NJ
- Zhang J (2008) The contracting benefits of accounting conservatism to lenders and borrowers. *J Acc Econ* 45(1):27–54