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Firms' Financial Performance and Earnings Management: the Case of Egypt

Abstract

The present study examines the relation between firms' financial performance and earnings management in an emerging market; namely, Egypt. We examine the association between firms' financial performance and earnings management from three perspectives. First, we investigate whether a firm's financial performance affects earnings management. Second, we examine whether firms with ineffective financial performance engage in earnings management practices more than firms with effective financial performance. Third, we test whether firms with ineffective financial performance manipulate their earnings to report greater earnings.

Earnings management is captured by discretionary accruals. Cash flows from operations are used to indicate the level of a firm's financial performance, thus allowing the categorisation of the sample group of Egyptian firms into two sub-samples: firstly, those characterized by low cash flows (demonstrating ineffective financial performance, i.e. underperforming or low performing firms); and secondly, those characterized by high cash flows (demonstrating effective financial performance, i.e. high performing firms).

We use the ordinary least square regression model of the relation between discretionary accruals and a firm's financial performance to examine whether a firm's financial performance affects earnings management. To assess whether firms with ineffective financial performance are more prone to manage earnings than their higher performing counterparts, we employ a contextual model (of the relation between discretionary accruals and a firm's financial performance) with a dummy variable approach that allows parameter shifts for underperforming firms. Finally, to test for income increasing accruals by underperforming firms, we test whether discretionary accruals are positive and significantly greater for underperforming firms than those for high performing firms.

The results show that, first, earnings management is negatively associated with a firm's financial performance. Second, underperforming firms are engaged in more earnings management practices than their high performing counterparts. Third, underperforming firms have positive and considerably greater discretionary accruals than their effectively performing counterparts to elevate their reported earnings in order to hide their low financial performance. Overall, these results suggest that an Egyptian firm's financial performance may serve as a fundamental determinant of its likelihood of engaging in earnings management. Moreover, these results suggest that listed Egyptian firms utilize earnings management practices opportunistically as a way to conceal their ineffective/poor financial performance. Given the current weakness of investor protection and legal enforcement in Egypt, these results encourage policymakers to improve considerably corporate-governance mechanisms in Egypt. This study contributes to the limited research on earnings management in emerging markets, and specifically, Egypt.

الأداء المالى للشركات و إدارة الأرباح: بالتطبيق على مصر ملخص

تفحص هذه الدراسة العلاقة بين الأداء المالى للشركات و إدارة الأرباح فى السوق الناشئ المصرى. ويتم فحص العلاقة بين الأداء المالى للشركات و إدارة الأرباح من خلال ثلاثة ابعاد. اولاً: دراسة تأثير الأداء المالى للشركة على إدارة الأرباح. ثانياً: فحص ما إذا كانت الشركات التى تحقق اداء مالى غير فعال او منخفض تقوم بتبنى ممارسات ادارة الارباح بصورة اكبر من الشركات التى تحقق اداء مالى فعال او مرتفع. ثالثاً: اختبار ما إذا كانت الشركات التى تحقق اداء مالى غير فعال او منخفض تقوم بتطبيق طرق واساليب ادارة الارباح بهدف زيادة ارباحها.

وقد تم استخدام المستحقات الأختيارية لقياس إدارة الأرباح. كما تم استخدام التدفقات النقدية التشغيلية كمقياس للأداء المالى للشركة. وللتمييز بين الشركات ذات الأداء المالى غير الفعال (المنخفض) والشركات ذات الأداء المالى الفعال (المرتفع)، تم تقسيم العينة الكلية الى عينتين فرعيتين: (١) عينة فرعية ذات تدفقات نقدية منخفضة و(٢) عينة فرعية ذات تدفقات نقدية مرتفعة. وعلى هذا الاساس، أعتبرت العينة الفرعية للشركات ذات التدفقات النقدية المنخفضة على انها شركات ذات اداء مالى غير فعال (منخفض)، بينما اعتبرت العينة الفرعية للشركات ذات التدفقات النقدية المرتفعة على انها شركات ذات اداء مالى فعال (مرتفع).

وقد استخدمت الدراسة نموذج الانحدار للعلاقة بين المستحقات الأختيارية والأداء المالى للشركة لفحص تأثير الأداء المالى للشركة على إدارة الأرباح. ولتقييم ما إذا كانت الشركات ذات الأداء المالى غير الفعال (المنخفض) تكون اكثر تطبيقاً لإدارة الأرباح مقارنة بالشركات ذات الأداء المالى الفعال (المرتفع)، استخدمت الدراسة نموذج الانحدار للعلاقة بين المستحقات الأختيارية والأداء المالى للشركة ومتغير وهمى للشركات ذات الأداء المالى غير الفعال. ولأختبار ما إذا كانت الشركات ذات الأداء المالى غير الفعال تقوم بتطبيق طرق زيادة الارباح، قامت الدراسة بأختبار ما إذا كانت المستحقات الأختيارية تكون موجبة واكبر معنوياً للشركات منخفضة الاداء عن الشركات مرتفعة الاداء.

وقد اظهرت النتائج مايلي، اولاً: يكون لأداء الشركة المالى تأثير عكسى على إتجاه ادارة الأرباح. ثانياً: تقوم الشركات ذات الأداء المالى المنخفض بممارسات ادارة الارباح بصورة اكبر عن الشركات ذات الأداء المالى المرتفع. ثالثاً: المستحقات الأختيارية كانت موجبة وأكبر معنوياً للشركات ذات الأداء المالى المنخفض عن الشركات ذات الأداء المالى المرتفع، وذلك لزيادة ارباحها بهدف اخفاء ادائها المالى الضعيف. وتشير هذه النتائج إلى ان الأداء المالى للشركة يمكن ان يعتبر من احد محددات او دوافع الشركات المصرية لإدارة الأرباح. وكذلك تشير هذه النتائج الى ان الشركات المصرية تستخدم ادارة الارباح بصورة انتهازية حتى تخفى ادائها المالى الضعيف. وفى ظل ضعف قواعد حماية المستثمرين فى مصر، وايضا فى ظل ضعف مستوى الرقابة على مدى التزام الشركات بتطبيق معايير المحاسبة المصرية، فإن نتائج هذه الدراسة تشجع صانعى السياسات فى مصر على تحسين أدوات تطبيق حوكمة الشركات بصفة عامة. وتمثل هذه الدراسة اضافة الى دراسات ادارة الأرباح المحدودة فى الأسواق الناشئة وبالتحديد مصر.

1. Introduction

According to Beneish (2001), the critical consideration of earnings management is the extent to which managerial personnel self-interestedly modifies accounting earnings. Indeed, Dechow and Skinner (2000) illuminated the fact that when opportunism drives managers to maximize their own interests, earnings management practice severely compromises earnings quality while undermining the credibility of financial reporting. An important implication of this practice stems from that because decision-making of investors and creditors is impacted by reported earnings, firm managers may distort highly-consequential earnings figures in a way that detrimentally impacts stakeholder interests (Sevin and Schroeder, 2005).

Many world-shaking economic events have occurred as a direct result of earnings management, including the Enron scandal of 2001, the WorldCom accounting scandal of 2002, and the Xerox scandal of 2002 (Yoon et al., 2006). Given the severity of the consequences that resulted from scandals such as these, including the bankruptcies of Enron and WorldCom, the degree to which financial reporting is a credible practice has been severely affected (Yoon et al., 2006). In fact, the role played by earnings management in the Enron and WorldCom scandals was confirmed by the US Securities and Exchange Commission (SEC), as a result of which the phenomenon of manipulated earnings for private benefit came under increasingly close scrutiny.

As per the definitions of Davidson et al.(1987), earnings management occurs when managerial personnel modify accounting accruals for the purpose of altering reported earnings; typically, this is facilitated by exploiting accounting decisions made within the Generally Accepted Accounting Principles (GAAP). Examples of accruals manipulations include (Roychowdhury, 2006):(1), the timely and self-interested choice of certain accounting strategies (bases), (2) underprovisioning for bad debt expenses and (3) the postponement of asset write-offs. A majority of the existing literature pertaining to earnings management practices has chosen developed Stock markets as its setting, thus resulting in relatively limited findings addressing develop-

ing markets. Previous studies published in developed markets (e.g., the US and the UK) have focused on the effect that certain events or incentives have on the degree to which managerial personnel are driven to engage in earnings management. Examples of such events or incentives include the maximizing of management compensation, raising the prices of equity offers, avoiding violating debt covenants, and avoiding antitrust violations (e.g., Healy, 1985; DeAngelo, 1986; Jones, 1991; Cahan, 1992; Defond and Jiambalvo, 1994; Teoh et al., 1998b).

This study extends the research addressing earnings management to the emerging market of Egypt. However, different from prior studies and given that the extant data pertaining to such events or incentives, of the kind described above, is limited in the Egyptian emerging market, the present study does not seek to illuminate the practice of earnings management in Egypt in reference to a particular event or incentive. Rather, this research examines earnings management based on the entire financial performance of Egyptian firms. The rationale for focusing on earnings management with respect to the variable of financial performance stemmed from the fact that this issue has only been touched on briefly in the literature. Thus, this study examines earnings management in Egypt in the context of financial performance as a different setting from those of prior studies.

Furthermore, investigating the Egyptian context is identified as a useful chance to illuminate the prevalence of earnings management, along with its determinants, in an emerging market (namely, a newly-established capital market displaying prominent growth). This is because, when compared to developed countries, Egypt's accounting environment, given the country's status as an emerging market, reflects numerous points of difference. These differences include the following: firstly, relatively ineffective corporate governance (Bremer and Ellias, 2007); secondly, an elevated level of conformity regarding financial accounting to taxation (Farag, 2009); and thirdly, as described by Moore (1995), a relatively inconsequential part played by the capital market in raising capital. By contrast, the converse for each of these points is true for developed markets such as the US and the UK, including effective corporate governance, a limited level of conformity regarding financial accounting to taxation, and comparatively high importance of the capital market (Defond and Hung, 2004; Myring,

2006). Based on that, it is reasonable to expect that environmental disparities of this kind can contribute to different results when comparatively examining one country against another (Amir et al., 1993; Alford et al., 1993). Further information about the rationale for basing the present research in Egypt is given in Section 3.

As stated above, this study addresses earnings management in the Egyptian context based on the entire financial performance of the firms. Specifically, this paper examines the relation between earnings management and a firm's financial performance in the emerging market of Egypt. We examine the association between earnings management and a firm's financial performance from three perspectives. We first investigate whether a firm's financial performance affects earnings management. We then examine whether firms with ineffective financial performance engage in earnings management practices more than firms with effective financial performance. Finally, we test whether firms with ineffective financial performance manipulate their accounting earnings to report greater earnings. Ineffective financial performance firms are referred hereafter as underperforming or low performing firms and effective financial performance firms are referred hereafter as high performing firms.

Earnings management is measured by discretionary accruals. Discretionary accruals estimations are made by employing the modified Jones model given in Dechow et al. (1995). In view of the Egyptian Stock Exchange's classification for its listed firms, the present study's sample group was divided into 8 industries, and the modified Jones model was fitted by each industry using 6-year panel data. Based on the extant literature, including the studies conducted by McNichols and Wilson (1988), Givoly and Hayn (2000), Barth et al. (2001), and Yoon and Miller (2002), cash flows from operations are used to indicate the level of a firm's financial performance. This decision relies on the supposition that the manipulation of cash flows is not a straightforward task, and that cash flows are not characterized by a serious risk of containing transitory elements unless cash accompanying revenues or expenses are intentionally frontloaded or postponed (Yoon and Miller, 2002). We perform the analysis by dividing the data set of Egyptian firms into two sub-samples: the first sub-sample is characterized by low cash flows (demonstrating ineffective financial perfor-

mance, i.e. underperforming firms); and the second sub-sample is characterized by high cash flows (demonstrating effective financial performance, i.e. high performing firms). In this research, each sub-sample contains a relatively similar number of firms, and to create each sub-sample, all firm-year observations of the full sample are arranged in ascending order based on cash flows from operations scaled by lagged total assets. Firms in the low cash flows sub-sample are associated with firm-years for which cash flows magnitude is limited (the firms in the highest group), while the converse is true for firms in the high cash flows sub-sample. As previously noted, firms in the low cash flows sub-sample are characterized as those with ineffective financial performance firms, while those in the high cash flows sub-sample are characterized by effective financial performance firms.

As stated above, this study examines the association between earnings management and a firm's financial performance from three perspectives. The first perspective investigates whether an Egyptian firm's financial performance can explain the variations in earnings management. We argue that, when financial performance is ineffective, the firms tend to choose income-increasing strategies in order to hide their ineffective financial performance¹. However, when financial performance is effective, the firms tend to choose income-decreasing strategies to shift income from good years to bad years or to limit taxes or to avoid political costs. This can be achieved by recognizing high estimated expenses when revenue is high so that lower estimated expenses can be recognized when earnings are lower, and also by deferring revenue for "tougher times". To assess whether a firm's financial performance affects earnings management, we test the statistical significance of the slope coefficient for regression of the relation between discretionary accruals and a firm's financial performance (earnings management is proxied by discretionary accruals; and financial performance is measured by cash flows from operations, as discussed above). A negative and significant value for the slope coefficient in this regression is consistent with our argument that financial perfor-

¹ It is noteworthy that when financial performance is extremely poor, firms tend to take "a big bath" (see, Yoon and Miller, 2002). Therefore, it is not always the case that ineffective financial performance firms manage earnings upward.

mance has a negative impact on the direction of earnings management.

The second perspective examines the degree to which Egyptian firms with ineffective financial performance are more likely to implement earnings management practices than their higher-performing counterparts. The majority of firms are motivated to engage in earnings management for various reasons, but it is more reasonable to argue that firms with poor/low/ineffective financial performance will employ earnings management strategies more heavily than their effectively performing counterparts in order to mask their low performance. To assess whether firms with ineffective financial performance are more prone to manage earnings than their higher-performing counterparts, we examine the regression coefficients from regression of discretionary accruals on cash flows from operations and a dummy variable for cash flows from operations (where dummy variable = 1 for ineffective financial performance and 0 effective financial performance). As indicated, the low cash flows sub-sample represents ineffective financial performance firms, and the high cash flows sub-sample represents effective financial performance firms. If ineffectively performing firms are more engaged in earnings management strategies than their effectively performing counterparts, we would expect to find a higher negative slope coefficient of cash flows variable in firms with ineffective financial performance compared with higher-performing counterparts. The significance of the difference effect in the slope of cash flows variable can be tested directly by examining the t-value of the dummy variable.

The third perspective tests whether Egyptian firms characterized by ineffective financial performance are practicing earnings management by implementing income-increasing policies to manage their accounting earnings upward. Evidently, most firms are motivated to engage in earnings management, but it is more reasonable to argue that firms with poor/low/ineffective financial performance will be strongly correlated with a correspondingly income-increasing strategies usage than their effectively performing counterparts in order to hide their low performance. We test for income increasing accruals by underperforming firms drawing on the accrual approach utilized in numerous studies in the existing literature (DeAngelo, 1986; Jones, 1991; De-

fond and Jiambalvo, 1994; Teoh et al., 1998a; Yoon and Miller, 2002). That is, we test whether discretionary accruals are positive and significantly greater for underperforming firms than those for high performing firms. We employ mean and median discretionary accruals difference tests to determine the degree to which discretionary accruals vary across the two categories of firms. In the event that underperforming firms engage in income-increasing practices, the average discretionary accruals associated with these underperforming firms will be positive and greater when compared against their effectively performing counterparts. In conformance with the aforementioned way in which financial performance is determined, the discretionary accruals difference tests are applied to the low cash flow sub-sample against high cash flow sub-sample.

The results show that, first, earnings management is negatively correlated with a firm's financial performance, i.e., financial performance has a negative impact on the direction of earnings management. This result suggests that when the financial performance is low, the firms tend to choose income-increasing strategies; whereas, when the financial performance is high, the firms tend to choose income-decreasing strategies. A possible interpretation of this result is that ineffective financial performance firms are taking earning-increasing strategies to mask their low financial performance, and effective financial performance firms are taking income-decreasing strategies to shift income from good years to bad years or to avoid political costs or to reduce tax expenses. Second, firms with ineffective financial performance are engaged in more earnings management practices than their high performing counterparts. This result suggests that earnings management is more pervasive in ineffectively performing firms than their effectively performing counterparts. A potential interpretation of this result is that the incentives to decrease earnings (such as the desire to avoid taxes or to limit political costs) by effectively performing firms do not exist in the privatized public Egyptian firms that represent a large percentage of the sample firms in this study, and also that ineffectively performing firms have stronger incentives opportunistically to manage earnings upward to conceal their low performance. Third, low performing firms are more greatly associated with positive and higher discretionary accruals than are high performing firms. This result suggests that underperforming firms engage in income increasing policies

to increase their earnings opportunistically in order to improve their low performance falsely.

Collectively, these results suggest that an Egyptian firm's financial performance affects earnings management practices. Moreover, these results reveal that listed Egyptian firms with ineffective financial performance are likely to conceal this fact through the use of opportunistic earnings management strategies. Hence, the utilization of an indicator other than earnings (e.g., cash flows) can serve as a more reliable way in which to illuminate an Egyptian company's financial performance, thus enabling investors in Egypt to determine when it is appropriate to use earnings as the primary profitability measure. It is noteworthy that finding that Egyptian firms with ineffective financial performance increase accruals to increase their reported earnings is comparable to the findings reported in the extant research pertaining to income smoothing. In view of this, it is possible to conclude that Egyptian firms encounter comparable pressures to sustain a smoothed-earnings series as is the case in other countries. Given the current weak regulatory enforcement regime in Egypt, the results of this study suggest that several reforms to the Egyptian corporate governance code should be performed.

The paper is organized as follows. The next section reviews prior studies. Section 3 shows motivation for the study in the Egyptian context. Section 4 discusses research questions and hypotheses. Section 5 presents research method. Section 6 shows variables definition and data selections. Section 7 reports empirical results; and section 8 concludes the paper.

2. Background and previous research

In recent years, the topic of earnings management has been extensively examined in the literature, earnings management has also received considerable attention from those in practical positions within the business world. In terms of how the notion of earnings management can be described, numerous definitions have been provided. The key conclusion to draw from an examination of these definitions is that earnings management is chiefly concerned with manipulating a firm's financial data (specifically, reported earnings) in such a way as to misinform stakeholders regarding its real performance.

The primary strategy implemented by existing scholars is to proxy earnings management using the accrual approach, which centers on the prospective utilization of accruals management among managerial personnel for self-interested reasons. It is possible to divide total accruals (which constitute the difference between earnings and cash flows from firm operations) into the following categories: firstly, non-discretionary accruals, which constitute accounting-level adjustments to cash flows from operations, as requested by the accounting standards setting body; and secondly, discretionary accruals, which are the accounting-level adjustments to operational cash flows, entirely based on the decision-making of managerial personnel. It is important to recognize that the generally accepted accounting principles (GAAP) enable managerial personnel to conduct discretionary accruals, thus contributing to the emergence of earnings management. Thus, the discretionary accruals are used as a proxy for earnings management. In view of this, as noted by Healy and Wahlen (1999), the accruals approach determines the degree to which discretionary accruals take place conforms to certain managerial motivations. The notion of earnings having been managed upward or managed downward (also referred to income-increasing and income-decreasing) refers to the matter of whether discretionary accruals are significantly positive or significantly negative, respectively.

Since discretionary accruals are typically employed to represent earnings management, statistical models are required to separate the discretionary accruals element from the total accruals. A range of models have been devised to distinguish discretionary accruals and nondiscretionary accruals from total accruals, including those published by Healy (1985), DeAngelo (1986), and Jones (1991). Other models include the modified Jones Model (Dechow et al., 1995), the cross-sectional Jones Model (Defond and Jiambalvo, 1994; Subramanyam, 1996), the industry Model (Dechow et al., 1995), and the Kang and Sivaramakrishnan Model (1995). At present, consensus has been established that the Jones Model is the most effective way in which to separate discretionary accruals and nondiscretionary accruals from total accruals (Dechow et al., 1995).

Arthur Levitt (1998), former Chair of the US Securities and Exchange Commission (SEC), outlined five earnings-management techniques: namely, (1) “big bath” charges, (2) “cookie jar” reserves, (3) improper revenue recognition, (4) abusing the materiality concept and (5) creative acquisition accounting. He described these techniques as poisoning the process of financial reporting.

There is substantial evidence that managers engage in earnings management. Since the mid-1980s², a vast body of empirical evidence has been accumulated on the motivations (incentives) of earnings management. Motivations for earnings management arise from income smoothing, contractual agreements, capital markets considerations and regulatory concerns (or political costs issues) (Healy and Wahlen, 1999; Dechow and Skinner, 2000; Yoon and Miller, 2002).

Income smoothing states that managers seek to moderate earnings variability across the years by shifting income from good years to bad years or vice versa (Moses, 1987). To the extent that contracts, such as bonus plans and debt agreements in lending contracts are based on accounting numbers, incentives for earnings management exist. The evidence reported from compensation contracts is consistent with the fact that managers use their discretionary judgment (selecting accounting procedures and accruals) to maximize their compensations (Healy, 1985). The evidence obtained from lending contracts purposes is consistent with the fact that firms that are close to breaching their lending covenants manage earnings by changing accounting methods or accruals to avoid debt agreements violation (see for example, Defond and Jiambalvo, 1994).

Capital-market motivations are the most important incentive for managers to manage earnings (Dechow and Skinner, 2000). Given that accounting earnings are used by investors for equity valuation, this creates an incentive for managers to manipulate earnings to influence short-term stock prices (Healy and Wahlen, 1999). The findings

² The term for ‘earnings management’ in the earliest scholarly discussions, which took place at the outset of the 1980s, was ‘income smoothing’. For the most part, these studies centred on issues of earnings variability and stability, and it is noteworthy that earnings were regarded as having been managed in the event that they stayed constant over time and displayed stable growth. However, since the mid-1980s, in order to determine whether earnings management has taken place, earnings management researchers now focus on the accrual approach.

supported that firms report positive discretionary accruals (income-increasing) before initial public offers (IPOs) (e.g., Teoh et al., 1998 A), and seasoned equity offers (SEOs) (e.g., Teoh et al., 1998 B). There is also evidence that firms use discretionary accruals to manage earnings upward to meet analysts' forecasts (Burgstahler and Eames, 1998). Moreover, Perry and Williams (1994) found evidence that discretionary accruals were significantly negative (income-decreasing) prior to the management buyouts (MBOs).

Political costs can also lead managers to manage earnings. Watts and Zimmerman (1978) argued that, for political-costs issues (such as anti-trust regulation and other government regulation), managers try to decrease earnings on a temporary basis to increase the potential of a negotiated or regulatory outcome. Moreover, managers of firms seeking government subsidiary or protection may have incentives to decrease earnings (Healy and Wahlen, 1999). Empirical research seems to support these contentions. For example, Jones (1991) supported the idea that managers decrease earnings during import-relief investigation. Cahan (1992) indicated that firms under investigation for anti-trust violations adopt downward earnings manipulations during investigation years. Han and Wang (1998) found that oil firms that expect increases in earnings resulting from sudden product price increases use accounting accruals to understate income and, thus, their political sensitivities.

In summary, the literature is indicative of the fact that depending on the nature of the incentives to which managerial personnel within a firm are exposed, the management of earnings upward or downward is likely to occur.

3. Motivation for studying the Egyptian context

As a consequential political player in the Middle East, as well as a country with considerable regional influence, it is possible to characterize Egypt's institutional environment with reference to the following: firstly, as described by Moore (1995), a relatively inconsequential part played by the capital market in raising capital; secondly, a poor regulatory framework, along with underdeveloped controls for compliance monitoring (especially with respect to accounting standards and corporate punitive measures) (Ebaid, 2012); thirdly, an elevated

level of conformity regarding financial accounting to taxation (Frag, 2009); and finally, generally ineffective conformance to the disclosure stipulations contained within the Egyptian Accounting Standards (Abdelsalam and Weetman, 2007). Noteworthy, Egyptian accounting information's features in this respect are not so different from those evident among companies within code-law countries, and it is indicative of the fact that Egyptian companies have a tendency to report comparatively poor quality local accounting information (especially when compared to common law-countries). This is particularly notable despite mandating adoption of high quality accounting standards (IFRS). These characteristics of the Egyptian institutional environment are expected to allow managers to be engaged in greater earnings management activities.

The Ministry of Investment initially implemented the Egyptian Code of Corporate Governance (ECCG) in 2005, which was formulated directly in reference to the corporate governance tenets set forth by the Organization for Economic Cooperation and Development (OECD). Nevertheless, when comparing developed countries such as the US and the UK to Egypt, a fundamental distinction is that the latter's corporate governance environment contains no obligatory regulations which are backed up by legal force. Instead of this, Egypt's corporate governance environment is based on regulation and the encouragement of responsible and transparent business activities which conform to stakeholder interests, which, for Bremer and Ellias (2007), is ultimately an admission of ineffective corporate governance. Critically, this has been shown to accentuate the problem of earnings management within the Egyptian context, a problem which is pervasive, problematic and actively practised in Egypt (Kamel and Elbanna, 2010) when comparatively examined against developed markets.

Collectively, the above factors suggest that earnings management is likely to differ in Egypt, and make it is interesting to examine the occurrence of earnings management in the Egyptian firms. Thus, the present research intends to explore earnings management practices in the Egyptian context.

4. Research questions and hypotheses

Numerous studies performed in developed markets have investigated the degree to which managerial personnel within firms proceed in an active manner to change earnings in a self-interested way, and a range of determinants, causes, and promoters of earnings management have been evaluated. As a case in point, one study investigated earnings management as regards the compensation of managerial personnel (Healy, 1985), while other studies have focused on the nature of earnings management before management buyouts (DeAngelo, 1986; Perry and Williams, 1994). Researchers have published studies addressing earnings management and its relationship to import relief (Jones, 1991), anti-trust (Cahan, 1992), debt agreements (Defond and Jiambalvo, 1994), initial public offerings (Teoh et al., 1998a), seasoned equity offers (Teoh et al., 1999b), earnings forecasts (Burgstahler and Eames, 1998), and political cost concerns (Han and Wang, 1998). Furthermore, the study conducted by Yoon and Miller (2002) examined the way in which firm operating performance and the level of earnings management is related.

The present study represents an attempt to build on the existing literature, which will be achieved by applying the existing tools, theoretical frameworks, and understanding to illuminate the matter of earnings management in the Egyptian market. Distinct from the existing studies, however, this research will not evaluate the correlation between earnings management and a certain event or motivation similar to those events or incentives of developed markets described above; rather, it focuses on earnings management in relation to the entire financial performance of Egyptian firms. The rationale for this choice of research area stems from the limited supply of information pertaining to the Egyptian market, thus precluding an examination of earnings management's connection to certain events or motivations. Moreover, financial performance represents a different setting (from prior studies) in which we examine earnings management. As such, this study seeks to illuminate the degree to which earnings management activities in Egyptian firms are correlated with firm's financial performance, with the specific area of focus is on ineffective financial performance versus effective financial performance. Specifically, this study explores the following three research questions:

- Q1.** Does a firm's financial performance affect earnings management?
- Q2.** Do firms with an ineffective financial performance engage in earnings management practices more than their higher-performing counterparts?
- Q3:** Do firms with an ineffective financial performance engage in the manipulation of their accounting earnings to report greater earnings?

The first research question investigates whether earnings management relates to a firm's financial performance. We argue that there is income-increasing earnings management when financial performance is ineffective. This means that low financial performance firms are taking earning-increasing strategies to mask their low financial performance. Moreover, we argue that there is income-decreasing earnings management when financial performance is effective. This means that high financial performance firms are taking income-decreasing strategies to shift income from good years to bad years or to avoid political costs or to reduce tax expenses. Firms can manage earnings downward or upward through reporting high expenses when revenue is high so that lower expenses can be recognized when earnings are lower and also through deferring revenue for "tougher times". Thus, *Q1* (above) is examined by testing the following first research hypothesis, stated in alternative form.

H1. Earnings management is negatively associated with a firm's financial performance.

The second research question examines whether firms with ineffective financial performance probably manage their accounting earnings more than firms with effective financial performance. It is assumed that firms with ineffective financial performance have more incentives to manage earnings than their high performing counterparts to hide their low financial performance. To determine whether ineffectively performing firms manage earnings more than their effectively performing counterparts, the earnings management activities of the latter type of firms are utilized as a benchmark. In view of this, the present study supposes that firms with an effective financial performance are those which lack a considerable number of incentives to engage in

earnings management activities³. Hence, a comparative examination of earnings management tendencies across the two categories of Egyptian firms will usefully illuminate the nature of the practice in this emerging market within firms with varying financial performance. Based on that, the above-stated *Q2* is resolved by testing the following second research hypothesis, stated in alternative form.

H2. Firms with an ineffective financial performance are engaged in more earnings management practices than firms with effective financial performance.

The third research question tests whether firms with ineffective financial performance are more likely to manage their accounting earnings upward. In recent decades, the literature addressing the topic of earnings management has established consensus around the notion that certain types of incentives affect the way in which discretionary accruals are modified by managerial personnel. It is suggested that firms with ineffective financial performance, especially when compared to their high performing counterparts, have a greater motivation to increase earnings in order to conceal their low performance. As such, the above-stated *Q3* is examined by testing the following third research hypothesis, stated in alternative form.

H3. Firms with an ineffective financial performance engage in the upward manipulation of their accounting earnings.

5. Research method

5.1 Measurement of firms' financial performance

The purpose of this research is to examine whether earnings management is associated with the firms' financial performance. Thus, it is appropriate to establish a suitable way in which to determine financial performance. For the purpose of this study, financial performance is defined as a firm's economic performance which is indicative of its economic outcomes. In view of the existing literature (e.g., McNichols

³ Nevertheless, firms characterised by effective financial performances can sometimes be motivated to engage in income-decreasing policies, thereby managing their earnings downward. Situations in which this is the case relate to the desire to avoid taxes or to limit political costs.

and Wilson, 1988; Givoly and Hayn, 2000; Barth et al., 2001), in this study, cash flows from operations are employed as a proxy for financial performance. This decision relies on the supposition that the manipulation of cash flows is not a straightforward task, and also cash flows are not characterized by a serious risk of containing transitory elements⁴. This is unless cash accompanying revenues or expenses are intentionally frontloaded or postponed by managerial personnel (Yoon and Miller, 2002). Thus, in view of these considerations, cash flows from operations can serve as a valid proxy of a firm's financial performance (Yoon and Miller, 2002).

As outlined in the introductory section, the present study differentiates between firms with ineffective and effective financial performance by separating the sample group of Egyptian firms into two sub-samples of roughly equivalent size, i.e., a low and a high cash flows sub-sample. The decision to allocate a firm to one sub-sample rather than another is based on the issue of whether the firm falls into the low cash flows sub-sample or the high cash flows sub-sample. Following this, the sample is ranked in ascending order based on ending-of-year cash flows from operations scaled by total assets at the outset of year t . In turn, the classification of low cash flows sub-sample is given to the firms in the highest group, while the converse is true for the lowest group, assigning these firms to the high cash flows sub-sample. The low cash flows sub-sample is firms with ineffective financial performance, whereas the high cash flows sub-sample is firms with effective financial performance.

5.2 Measurement of earnings management

Consistent with prior research discretionary accruals are used as a proxy for earnings management. For the purpose of estimating discretionary accruals, the cross-sectional variant of modified Jones (1991) Model is employed, as proposed by Dechow et al. (1995). One of the defining features of the cross-sectional modified Jones (1991) Model is that it is estimated independently on an annual basis, and this occurs

⁴ When considered in relation to cash flows from operations, earnings are a somewhat unclear one. Moreover, it is regarded as 'soft' and it has an increased likelihood of consisting of transitory elements.

for all firms within a single industry. A seminal benefit associated with the cross-sectional approach stems from the way in which it facilitates the automatic adjustment of the impacts of certain year changes in the economic environment, where these have an effect on expected annual accruals (Teoh et al., 1998a). Nevertheless, given the relatively limited size of the Egyptian samples employed in the present research, particularly when compared against studies performed in developed countries, the estimation of the modified Jones Model in this study occurs by drawing on pooled cross-sectional and time-series regression for every industry category. The rationale for doing so stems from the need to have enough data points within each respective industry category with which to determine discretionary accruals. The features of the modified Jones Model are given below.

$$TA_{it} / A_{it-1} = \alpha[1 / A_{it-1}] + \beta[(\Delta REV_{it} - \Delta AR_{it}) / A_{it-1}] + \gamma[PPE_{it} / A_{it-1}] + \varepsilon_{it}$$

Where:

TA_{it}	Total accruals for firm i in year t
A_{it-1}	Total assets for firm i at the beginning of year t
ΔREV_{it}	The change in revenues for firm i in year t
ΔAR_{it}	The change in receivables for firm i in year t
PPE_{it}	The gross property, plant and equipment for firm i in year t
ε_{it}	Residuals

The above modified Jones Model with no intercept regresses total accruals on: (1) the inverse of total assets at the outset of year t ., (2) as proposed in Dechow et al. (1995), the alteration in receivables subtracted from the alteration in revenues, scaled by the total assets at the outset of year t , and (3) the gross property, plant, and equipment scaled by total assets at the outset of year t . Discretionary accruals are determined by taking the total accruals minus the fitted values of total accruals (namely, nondiscretionary accruals). In view of this, discretionary accruals are the residuals of the model.

In view of the way the Egyptian Stock Exchange divides its listed firms into 8 industry categories, the modified Jones Model in the pre-

sent study is estimated for each of these categories using 6-year panel data. Noteworthy, the period used to estimate the modified Jones Model starts from 2009 to 2014 (denoted the estimation period), and this aligns with the event period.

As shown in Section 2, the accrual approach is characterized by its centering on the determination of discretionary accruals, primarily because these, in contrast to nondiscretionary accruals, are subject to the manipulation of managerial personnel within a firm. Nevertheless, as noted by Healy and Wahlen (1999), estimation models for discretionary accruals are problematic owing to misspecification issues, thereby introducing error into the calculations. In view of this and to introduce a robustness check, total accruals with respect to effective and ineffective financial performance firms are also examined in this research because they would be free from error.

5.3 Regression analysis- testing *H1*

As previously noted, hypothesis 1 (*H1*) seeks to examine whether earnings management is negatively affected by firms' financial performance. As previously stated, earnings management is reflected in discretionary accruals and financial performance in the present study is measured by a firm's cash flows from its operations. Based on that, we examine the effect of a firm's financial performance on earnings management using the following pooled regression model (Model 1):

$$DA_{it} = \alpha_0 + \alpha_1 CF_{it} + \varepsilon_{it} \quad (\text{Model 1})$$

Where DA_{it} is discretionary accruals for firm i in year t . CF_{it} is cash flows from operations for firm i in year t . Discretionary accruals and cash flows are deflated by total assets at the beginning of year t . To test *H1*, we examine the statistical significance of the slope coefficient for regression of discretionary accruals on cash flows (α_1), derived from Model (1) above. In particular, we hypothesize a negative and significant value for α_1 . A negative and significant value for α_1 means that, financial performance has a negative impact on the direction of earnings management. It is noteworthy that we examine whether there is a negative relation between a firm's financial performance and the direction of earnings management and not the magnitude of earnings management. This is because, as previously stated in Section 2, earn-

ings having been managed upward if discretionary accruals are significantly positive whereas earnings having been managed downward if discretionary accruals are significantly negative. Thus, the negative coefficient in the above regression (Model 1) means that: (1) when financial performance is low, firms manage earnings upward, and (2) when financial performance is high, firms manage earnings downward which does not mean decreasing earnings management activities.

5.4 Contextual model with dummy variable approach-testing H2

As previously noted, hypothesis 2 (*H2*) seeks to examine whether ineffective financial performance firms are engaged in earnings management more than their high performing counterparts. We estimate the following nonlinear regression model (Model 2) that examines the relation of discretionary accruals (earnings management) on cash flows from operations (financial performance) and a slope dummy for cash flows from operations variable. We employ a slope dummy that shows differences in the coefficients of cash flows between the ineffective and effective financial performance firms. Based on that, we examine the higher effect of ineffective financial performance on earnings management compared with their effectively counterparts using the following pooled regression model (Model 2) which is an extension to (Model 1):

$$DA_{it} = \alpha_0 + \alpha_1 CF_{it} + \alpha_2 D_{it} \times CF_{it} + \varepsilon_{it} \quad (\text{Model 2})$$

Where, D_{it} is dummy (indicator) variable (1, 0) to determine the ineffective and effective financial performance, respectively. The dummy variable equals one if it is from the ineffective financial performance firms and equals zero if it is from the effective financial performance firms. Given that earnings management is negatively correlated with financial performance, as argued in *H1*, it is anticipated that firms with ineffective financial performance will have a higher negative slope of cash flows compared with their high performing counterparts, i.e., a negative value of α_2 , so long as firms in the former group are engaged in greater earnings management.

Since financial performance in the present study is informed by a firm's cash flows from its operations, the second hypothesis will be

investigated by comparatively examining the regression coefficient of cash flows of the low cash flows sub-sample (representing ineffective financial performance firms) with the high cash flows sub-sample (representing effective financial performance firms). In particular, we evaluate whether the regression coefficient of cash flows of the low cash flows sub-sample is negatively higher than that of the high cash flows sub-sample. This hypothesis is examined in relation to a one-tailed alternative, thus permitting the rejection of the null hypothesis only when if the regression coefficient of cash flows is negatively higher in the low cash flows sub-sample firms compared to the high cash flows sub-sample firms. As for the rationale for utilizing a one-tailed alternative, this stems from the fact that considerable certainty surrounds the supposition that the low cash flows sub-sample firms will be engaged in higher manipulation of their reported earnings compared to their high performing counterparts. We can be certain of this owing to the fact that elevating earnings management activities will be more adopted by the low cash flows sub-sample firms to conceal their ineffective financial performance.

In the above model, we hypothesize a negative and significant value for α_1 that represents the slope of cash flows variable of effective financial performance firms. A negative and significant value for α_1 means that, effective financial performance affects earnings management negatively. This is based on our argument that firms manage earnings downward when their financial performance is high. Moreover, this study hypothesizes a negative and significant value for the sum ($\alpha_1 + \alpha_2$) that represents the slope of cash flows variable of ineffective financial performance firms. A negative and significant value for the sum ($\alpha_1 + \alpha_2$) means that ineffective financial performance also affects earnings management negatively. This is based on our argument that firms manage earnings upward when their financial performance is low. To test ($H2$), we examine the statistical significance of the slope coefficient on the dummy variable (α_2). In particular, we hypothesize a negative and significant value for α_2 (where α_2 represents the difference in the slope of cash flows variable between the ineffective and effective financial performance firms). A negative and significant value for α_2 means that, the effect of financial performance on earnings management will be significant and negatively higher for ineffec-

tive financial performance than that for effective performing counterparts.

5.5 Discretionary accruals difference tests –testing H3

As previously noted, hypothesis 3 (*H3*) seeks to test the degree to which firms with an ineffective financial performance are more likely than their high performing counterparts to manipulate their accounting earnings in an income-increasing fashion. Based on the null hypothesis of earnings management being entirely absent from firms' activities, there should be no difference between the mean accruals of the ineffective and effective financial performance firms. Nevertheless, based on the alternative hypothesis of earnings management taking place within firms, it is anticipated that firms with ineffective financial performance will engage in active measures to raise their accruals, thus elevating their earnings. In particular, it is anticipated that firms with ineffective financial performance will have positive and greater mean accruals when considered in relation to their high performing counterparts, so long as firms in the former group manage their earnings in an upward manner.

As previously noted, earnings management is reflected in discretionary accruals. Since financial performance in the present study is informed by a firm's cash flows from its operations, the third hypothesis will be investigated by comparatively examining the discretionary accruals for the low cash flows sub-sample (representing ineffective financial performance firms) and the high cash flows sub-sample (representing effective financial performance firms). In particular, we evaluate the degree to which the discretionary accruals of firms in the low cash flows sub-sample are positive and greater when considered in relation to their counterpart firms in the high cash flows sub-sample. This hypothesis is examined in relation to a one-tailed alternative, thus the null hypothesis can be rejected only when the discretionary accruals of the low cash flows sub-sample firms are greater than those of the high cash flows sub-sample firms. As for the rationale for utilizing a one-tailed alternative, this stems from the fact that considerable certainty surrounds the supposition that the low cash flows sub-sample firms would make higher discretionary accruals. We can be certain of this owing to the fact that elevating discretionary accruals,

and – in particular– generating positive accruals, for the purpose of elevating reported earnings will be employed by the low cash flows sub-sample firms to conceal their ineffective financial performance.

In order to test (*H3*) given previously, test statistics are used for the difference between the means and medians of firms with ineffective financial performance when compared against their effectively performing counterparts. In particular, a t-statistic is employed for the difference between means, while a Wilcoxon z-statistics is employed for the difference between medians. Ultimately, this will allow us to determine the degree to which the discretionary accruals means or medians for the firms in the two sub-samples are different in any discernible way.

6.Data and sample

The definition of variables in the present study has been heavily influenced by the literature. The variables of the study, reported in view of the Egyptian Accounting Standards (EASs), which represent the Arabic version of the International Accounting Standards (IASs), have been extracted using the financial statements issued by the firms in the sample of this study. Definitions for these variables are given below:

- i. Earnings: this variable refers to the net income prior to preferred and common dividends (but following operating and non-operating income and expenses, provisions, extraordinary items, taxes, and minority interest) which is available to stockholders.
- ii. Cash flows: as previously noted, cash flows from operations are utilized for the purpose of determining which firms within the sample can be classified as effective and ineffective performers with respect to issue of financial performance. In terms of how the cash flows variable is defined in this study, these constitute the net cash flows from the operating activities in which the firm is engaged, inclusive of net cash receipts as well as disbursements.
- iii. Total accruals: this variable refers to the firm's total earnings minus its cash flows from operations.

- iv. Revenues: this variable denotes a firm's overall sales (along with additional operating revenue) minus discounts, allowances, and returns (i.e., net sales).
- v. Receivables: this variable denotes a firm's trade receivables less the allowance for doubtful accounts (i.e., net trade receivables).
- vi. Gross property, plant, and equipment: this variable denotes each of the aforementioned assets the firm holds in a certain year minus the accumulated provisions relating to depreciation, amortisation, and depletion (i.e., net property, plant, and equipment).
- vii. Total assets: this variable represents a firm's total current assets, including advance payments of fixed assets (or investments), long-term investments, goodwill, net property plant, and equipment and other assets.

The data this research utilizes for testing purposes are gathered from Egypt for Information Dissemination (EGID)⁵ covering the period from 2008 to 2014. In terms of the sample utilized in the present research, firms listed on the EGX 30 Index from 2003 to 2009 period are employed. With respect to the matter of what the EGX 30 Index is, it is a price index routinely employed for the purpose of evaluating the Egyptian capital market's performance. It is widely regarded to be the case that the EGX 30 aggregates the financial indicators of 30 of the country's firms characterized by the highest levels of activity, specifically with reference to each company's liquidity and activity. Hence, the EGX 30 Index does not include small and medium-sized enterprises which investors are typically not interested in when viewing the Egyptian Stock Exchange. In view of this, the present study's sample has not been randomly selected. However, the EGX 30 Index includes only those companies which are large, and which have a significant market capitalization.

Initially, lists for the companies that make up the EGX 30 Index were compiled for the 2003-2009 period, which contributed to the

⁵ The EGID was established in 1999 as a private and fully owned subsidiary of the Egyptian Stock Exchange. EGID is an information provider. It provides its users with the main Egyptian financial information and Egyptian stock market data of the listed Egyptian firms. In addition, this firm sells, develops and supports information and technology solutions for the financial markets in the region.

creation of 13 lists. Firms contained within these lists were identified⁶. Resultantly, 72 companies were identified, with every company being included in the count only one time (irrespective of its inclusion on more than one list). The sample derived from the initial 72-firm group was established in reference to the inclusion and exclusion criteria given below:

- i. Firms must issue financial statements using the Egyptian pound (L.E.);
- ii. Firms in the financial industry are excluded;
- iii. Firms are excluded in the event that accounting information is unavailable for a minimum of one year over the period from 2008-2014.

After imposing these three criteria, 52 firms satisfied the inclusion and exclusion criteria. Thus, the initial sample size of the study is reduced into 52 firms, as indicated in Table (1).

Data pertaining to those 52 firms was gathered for the 2008 to 2014 period, but the study begins with 2009 because changes in accounting items are employed for the purpose of estimating discretionary accruals. Consequently, 312 firm-year observations were identified for the 2009-2014 period. After removing missing observations (specifically, 28 firm-year observations) and eliminating 16 firm-year observations because they rose higher than and lower than 99% and 1%, respectively, of the variables' distribution, the final study sample was constituted of 268 firm-year observations. Hence, the 52-firm sample over the period from 2009-2014 included 268 firm-year observations.

Table (2) shows the distribution of the study sample based on the industrial classification of the Egyptian Stock Exchange. As observable in Table (2), the industrial classification names on the Egyptian Stock Exchange are as follows: firstly, chemicals; secondly, construction; thirdly, consumer and household goods; fourthly, entertainment; fifthly, food and beverages; sixthly, manufactured products; seventhly,

⁶ Revisions of the EGX 30 Index occur biannually (February and August), thereby meaning that the constitutive firms of the index are detailed in a pair of lists for each year.

real estate; and finally, telecommunications⁷. For the purpose of dividing the study sample into analyzable industry categories for the estimation of discretionary accruals, this Egyptian Stock Exchange classification system was applied. In view of this, after dividing the firms into eight categories, the modified Jones model was estimated by pooling observations across over a 6 year period (the 2009-2014 period) for each industry. Noteworthy, this took place instead of a year-by-year regression, thus facilitating the estimation of one regression for every industry to have sufficient degree of freedom for the respective industry categories.

Table 1: Initial sample for listed Egyptian firms quoted on the EGX 30 Index over the period from 2003 to 2009

	Number of firms
Initial sample	72
Less	
1- Firms presenting their financial statements in currency other than Egyptian pound (L.E.)	(3)
2- Financial firms	(12)
3- Firms without accounting data through entire period 2008-2014	(5)
Sample size before excluding firms with insufficient data to calculate the study variables.	<u>52</u>

⁷ The Egyptian Stock Exchange classifies its listed companies into 12 sectors, 8 of which were stated above, the remainder being financial services, banking, basic materials, and pharmaceuticals and healthcare. As detailed in the inclusion and exclusion criteria of this study, the financial services and banking sectors are not included in the present sample, and since features of the basic materials and construction industry sectors are highly comparable, firms operating in both are included. This decision also stems from the fact that the group of firms operating in the basic materials sector is relatively small. At the same time, constructing the sample in this way facilitates having sufficient degrees of freedom when estimating discretionary accruals with respect to each of the major industry classifications. Finally, owing to similar reasoning, pharmaceuticals and healthcare companies have been incorporated into the chemicals industry sector.

Table 2: Distribution of the sample based on the Egyptian Stock Exchange industrial classification

Industry	Firms		Firm year observations from 2009 to 2014	
	Frequency	Percent	Frequency	Percent
Chemicals	8	.15	46	.17
Construction	12	.23	63	.235
Consumer and household goods	10	.19	53	.20
Entertainment	3	.06	10	.035
Food and beverages	4	.08	21	.08
Manufactured products	3	.06	11	.04
Real estate	6	.115	30	.11
Telecommunications	6	.115	34	.13
Total	52	1	268	1

7. Empirical results⁸

7.1 Descriptive statistics

We categorize the 268 firm-year observations (over the period 2009-2014) into one of two sub-samples: either the low cash flows sub-sample or the high cash flows sub-sample. Table (3) gives an overview of the descriptive statistics regarding cash flows from operations and earnings for the low cash flows sub-sample (134 observations, 50%) and the high cash flows sub-sample (134 observations, 50%), along with the overall sample (268 observations, 100%).

⁸ As robustness checks, the data set was categorised into two sub-samples, where the first contained companies reporting negative cash flows (representing ineffective financial performance), while the second contained companies reporting positive cash flows (representing effective financial performance). The results are the same as those generated by utilising the low and high cash flows sub-samples for the identification of ineffective and effective financial performance firms.

The mean value for the overall sample regarding cash flows from operations amounts to 0.125, while the mean value for earnings amounts to 0.109. Hence, the mean value for cash flows from operations is greater than it is for earnings, thereby leading us to the conclusion that, speaking in terms of averages, total accruals are negative. Regarding the standard deviation for earnings, this amounts to 0.104, while the standard deviation for cash flows amounts to 0.146. In this view, it is possible to see that the latter value is higher than the former, which is unsurprising to note given that managerial personnel can capitalize on accruals to facilitate smoothening regarding the cash flows variations across years. Noteworthy, these statistics conform with the previous research conducted by Jones (1991), Subramanyam (1996), and Sloan (1996) in the US.

As for the mean (median) values observable with respect to low cash flows sub-sample and high cash flows sub-sample, cash flows from operations amounted to 0.014 (0.027) and 0.233 (0.195), respectively. Regarding the mean (median) values for earnings for low cash flows sub-sample and high cash flows sub-sample, these amounted to 0.05 (0.043) and 0.166 (0.142), respectively. Evidently, the mean and median values for earnings are greater than those of cash flows for the low cash flows sub-sample firms, which contrast with the observation that cash flows are associated with greater mean and median values than earnings for the high cash flows sub-sample firms. Hence, it is possible to conclude that firms in the low cash flows sub-sample, averagely speaking, displayed a positive value for total accruals, contrasting with the negative value for total accruals associated with the high cash flows sub-sample. Therefore, it is clear that low cash flows sub-sample firms (namely, those with ineffective financial performances) conducted earnings management activities over the study period, in particular by utilizing income-increasing accounting practices. Contrastingly, for high cash flows sub-sample (namely, those with effective financial performances), the negative total accruals value is unsurprising, since the expectation is that the total accruals within industrial companies will be negative. We discussed previously that this study regards firms with effective financial performance as being that they lack the same number of motivations as underperforming firms to engage in earnings management practices. The rationale for this assumption was to facilitate the comparative examination of earnings

management activities in firms in low cash flows and high cash flows sub-samples⁹. It is important to recognize that we examined the distribution of industries for low cash flows sub-sample firms and high cash flows sub-sample firms, confirming that industry-clustering is unlikely to present a problem for the present study¹⁰.

Table (3) also reports descriptive statistics for total accruals and discretionary accruals for the low cash flows sub-sample, the high cash flows sub-sample, and the overall sample. Although the following results are based on discretionary accruals figures, they can be applied to total accruals since a comparable configuration of results for discretionary accruals holds for total accruals. For discretionary accruals with respect to the low cash flows sub-sample firms, the mean (median) amounts to 0.037 (0.029), while this amounted to -0.035 (-0.031) and 0.001 (0.002) for the high cash flows sub-sample firms and the entire sample, respectively. In view of this, the greatest level of discretionary accruals occurred over the study period within low cash flows sub-sample firms, the lowest level in high cash flows sub-sample firms, and the overall sample occupied the middle position. Furthermore, the mean and median discretionary accruals values for the low cash flows sub-sample are positive, while the converse is true for firms in the high cash flows sub-sample. Hence, it can be concluded that income-increasing accruals manipulation took place over the study period for firms with ineffective financial performance when comparatively examined against their high performing counterparts.

⁹ As previously noted, total accruals within industrial firms, owing to their expansive non-cash expenses, are typically negative. Nevertheless, the possibility exists that the negative total accruals in these firms stems from income-decreasing earnings management practices. Ultimately, though, it is unlikely that firms with effective financial performance will reduce their reported earnings, the only situation in which this tends to be the case being in view of political motivators or the desire to limit tax expenditure.

¹⁰ The consequence of this is that low and high cash flows sub-samples include firms from each of the 8 primary industry categories utilised in this study.

Table 3: Descriptive statistics

	Full sample			Low cash flows sub-sample			High cash flows sub-sample		
	Mean	Median	SD	Mean	Median	SD	Mean	Median	SD
Earnings	0.109	0.085	0.104	0.05	0.043	0.06	0.166	0.142	0.105
Cash flows from operations	0.125	0.088	0.146	0.014	0.027	0.056	0.233	0.195	0.127
Total accruals	-0.016	-0.017	0.107	0.036	0.016	0.083	-0.067	-0.051	0.106
Discretionary accruals	0.001	0.002	0.09	0.037	0.029	0.075	-0.035	-0.031	0.09

Notes:

- Earnings, cash flows from operations, total accruals, and discretionary accruals are scaled by total assets at the start of year t .
- Low and high cash flows sub-samples are defined as in Section 5.1.
- The number of firm-year observations for a sample of 52 Egyptian firms over a six-year period 2009-2014 for full sample, low cash flows sub-sample and high cash flows sub-sample is: 268, 134 and 134, respectively.

7.2 The Association between financial performance and earnings management

Model (1) is used to examine the effect of firms' financial performance on earnings management through regressing discretionary accruals on cash flows from operations. Table (4) shows coefficient of regression and t -statistics along with p -values for two-tailed of regression results for Model (1). The effect of a firm's financial performance on earnings management is assessed by examining the statistical significance of slope coefficient on cash flows variable. The coefficient of cash flows (α_1) is -0.363 ($t = -12.475$). The value of -0.363 is significantly negative at the 0.0000 level. This result reveals, that earnings

management is negatively related to a firm's financial performance, i.e., financial performance has a negative impact on the direction of earnings management.

Overall, these results suggest that there is income-increasing earnings management when financial performance is ineffective and there is income-decreasing earnings management when financial performance is effective. These results provide strong evidence for *H1* of the effect of financial performance on earnings management. Hence the evidence in Table (4) supports the first hypothesis that earnings management is negatively associated with a firm's financial performance. The possible interpretation of these results is that (1) low financial performance firms are taking earning-increasing strategies to hide their low financial performance, and (2) high financial performance firms are taking income-decreasing strategies to shift income from good years to bad years or to avoid taxes or to limit political costs (for the implications of these results, see Section 8, below).

Table 4: Regression results of discretionary accruals with cash flows

$$DA_{it} = \alpha_0 + \alpha_1 CF_{it} + \varepsilon_{it} \text{ (Model 1)}$$

Variable	Coefficient	T-stat	P-value	Adjusted R^2
Constant	0.045	7.836	0.0000	0.37
CF; (α_1)	-0.363	-12.475	0.0000	

Notes:

- DA_{it} is discretionary accruals and CF_{it} is cash flows from operations. These variables are scaled by total assets at the start of year t .
- The sample size is 268 of firm year observations for a sample of 52 Egyptian firms over a six-year period 2009-2014.
- To check for potential effects of heteroskedastic and autocorrelation in the errors, White's cross-section method is used.

7.3 The effect of low financial performance on earnings management practices

Table (5) reports the regression results of Model 2 that examines the relation between discretionary accruals on cash flows from operations, and a slope dummy for cash flows variable (coefficients of regression and t -statistics along with p -values for one-tailed). As stated before (see Section 5.4), we estimate a regression model with a slope dummy for cash flows variable that equals one if it is from the low cash flows sub-sample (ineffective financial performance firms) and zero if it is from the high cash flows sub-sample (effective financial performance firms).

The coefficient of cash flows for the high cash flows sub-sample (α_1) is -0.338 ($t = -11.671$). The value of -0.338 is significantly negative at the 0.0000 level. The coefficient of cash flows for the low cash flows sub-sample ($\alpha_1 + \alpha_2$) is -0.743 ($t = -7.673$). The value of -0.743 is significantly negative at the 0.0000 level. These results show that discretionary accruals (earnings management) are negatively associated with both ineffective and effective financial performance. These results are consistent with the previous results of Model 1, reported in Section 7.2. Thus, again these results show and confirm that there is income-increasing earnings management when financial performance is ineffective and there is income-decreasing earnings management when financial performance is effective.

The results reported in Table (5) also show that the difference in the slope of cash flows as we move from the high cash flows sub-sample (with slope α_1) to the low cash flows sub-sample [the slope being ($\alpha_1 + \alpha_2$)] is -0.405 (α_2) ($t = -4.098$). The value of -0.405 is significantly negative at 0.0001 level. Thus, the difference in the slope of cash flows between ineffective and effective financial performance firms (between the low and high cash flows sub-samples) is significantly negative. This means that firms with ineffective financial performance have a higher negative slope of cash flows compared with their high performing counterparts, i.e., the effect of financial performance on earnings management for ineffective financial performance firms is significant and negatively higher than that for effective performing counterparts. These results provide strong support for $H2$ of the higher

effect of ineffective financial performance on earnings management compared with their effectively counterparts. Hence the evidence in Table (5) supports the second hypothesis that firms with an ineffective financial performance are engaged in more earnings management practices than firms with effective financial performance. The possible interpretation of these results is that, ineffective financial performance firms are engaged in greater earnings management practices to mask their ineffective financial performance (for the implications of these results, see Section 8, below).

Table 5: Regression results of discretionary accruals with cash flows and a dummy variable for cash flows

$$DA_{it} = \alpha_0 + \alpha_1 CF_{it} + \alpha_2 D_{it} \times CF_{it} + \varepsilon_{it} \text{ (Model 2)}$$

Variable	Coefficient	T-stat	P-value	Adjusted R^2
Constant	0.043	7.824	0.0000	0.406
CF; (α_1)	-0.338	-11.671	0.0000	
D×CF; (α_2)	-0.405	-4.098	0.0001	
Sum CF and D×CF; ($\alpha_1+\alpha_2$)	-0.743	-7.673	0.0000	

Notes:

- DA_{it} is discretionary accruals and CF_{it} is cash flows from operations. These variables are scaled by total assets at the start of year t .
- D_{it} is dummy (indicator) variable for cash flows variable (1, 0) to determine ineffective and effective financial performance, respectively, as defined in Sections 5.1 and 5.4.
- The sample size is 268 of firm year observations for a sample of 52 Egyptian firms over a six-year period 2009-2014.
- To check for potential effects of heteroskedastic and auto-correlation in the errors, White's cross-section method is used.

- α_1 is the estimated coefficient of cash flows of effective financial performance firms.
- $(\alpha_1 + \alpha_2)$ combines the estimated coefficient of cash flows of ineffective financial performance firms.
- α_2 is the difference in the estimated coefficients of cash flows between ineffective and effective financial performance firms.

7.4 Managing earnings upward by low-financial-performance firms

Given in Table (6) are the t -statistics and p -values for the tests we applied to examine the degree to which significant differences existed between the means for total accruals and discretionary accruals across the low and high cash flows sub-samples. Given that our initial prediction (see Section 5.5) addressed the direction of the anticipated differences, one-tailed t -statistics and p -values were employed. As for the results of the comparative examination of the two sub-samples, the low cash flows sub-sample means are positive and, furthermore, considerably greater when considered in relation to those of the high cash flows sub-sample means (significant at the 0.0000 level). Regarding the difference between the means for each sub-sample, this amounts to 0.103 (t -statistic = 8.051) for total accruals, while it amounts to 0.072 (t -statistic = 6.672) for discretionary accruals.

These statistics are indicative of confirmatory evidence for $H3$ relating to the elevated likelihood of earnings management activities taking place in firms with ineffective financial performance. In particular, Table (6) suggests that earnings are typically managed upward in ineffectively performing firms, mainly in view of the positive and significantly greater total accruals and discretionary accruals values for the low cash flows sub-sample firms when compared against those of the high cash flows sub-sample firms. Hence, the evidence in Table (6) supports the third hypothesis that firms with an ineffective financial performance engage in the upward manipulation of their accounting earnings. The observation that firms with ineffective financial performances engage in income-increasing practices to conceal the state of their low operations has been reported in Yoon and Miller (2002).

Nevertheless, it is important to recognize that the central finding underpinning Yoon and Miller's (2002) research was that firms with an ineffective performance are likely to engage in income-increasing activities, whereas among firms in which performance is severely ineffective, the so-called 'big bath' takes place. Moreover, Yoon and Miller (2002) also found that firms which have excellent performances typically engage in income-decreasing strategies¹¹. Overall, our results conform to those published in the existing literature, thus reinforcing the notion that various forms of earnings management take place in view of variety of incentives (Healy, 1985; Jones, 1991; Defond and Jiambalvo, 1994; Teoh et al., 1998a; Teoh et al., 1998b; Yoon and Miller, 2002). In particular, these results suggest that ineffective performance is a statistically significant predictor of the occurrence of earnings management within a firm.

Given in Table (7) are the *z*-statistics and *p*-values for significant difference tests conducted with respect to the medians of total accruals and discretionary accruals for the low cash flows sub-sample firms and the high cash flows sub-sample firms. Particularly noteworthy is the fact that the results reported here are exactly the same as those generated from the previous examination of significant differences for the means given in Table (6). Thus, further confirmatory evidence has been generated for the third research's hypothesis.

Table 6: Mean accruals difference tests (for total accruals and discretionary accruals)

Accruals	Mean			T-stat	P-value
	(1) Low cash flows sub-sample	(2) High cash flows sub-sample	Difference (1-2)		
Total accruals	0.036	-0.067	0.103	8.051	0.0000
Discretionary accruals	0.037	-0.035	0.072	6.672	0.0000

¹¹ Yoon and Miller (2002) established 10 cash flows portfolios, as a result of which they could analyse earnings management in view of both ends of the spectrum (namely, extremely bad or extremely well). In this study, only 2 portfolios were constructed based on cash flow from operations ranks (containing ineffectively and effectively performing firms, respectively), thereby eliminating the possibility of investigating earnings management within firms with extreme financial performance.

Notes:

- Total accruals and discretionary accruals are scaled by total assets at the start of year t .
- Low and high cash flows sub-samples are defined as in Section 5.1.
- The number of firm-year observations for a sample of 52 Egyptian firms over a six-year period 2009-2014 for low cash flows sub-sample and high cash flows sub-sample is: 134 and 134, respectively.
- T-stat is the T-statistic along with P-value (one-tailed test) of the corresponding difference.

Taken together, a holistic way of interpreting the results given above should emphasize that the size of accruals (both total and discretionary accruals) is related in a statistically significant way to a firm's financial performance. In particular, we have seen that firms characterized by ineffective financial performances are characterized by positive accruals which are greater than those of their high performing counterparts. Ultimately, then, it is reasonable to conclude that the reporting upward of earnings among underperforming firms is especially prevalent, which is consistent with the supposition that they would seek to conceal their ineffective performance (the implications of these results will be explored below, in Section 8).

**Table 7: Median accruals difference tests
(for total accruals and discretionary accruals)**

Accruals	Median				
	(1) Low cash flows sub-sample	(2) High cash flows sub-sample	Difference (1-2)	Z-stat	P-value
Total accruals	0.016	-0.051	0.067	8.784	0.0000
Discretionary accruals	0.029	-0.031	0.06	6.941	0.0000

Notes:

- Total accruals and discretionary accruals are scaled by total assets at the start of year t .
- Low and high cash flows sub-samples are defined as in Section 5.1.
- The number of firm-year observations for a sample of 52 Egyptian firms over a six-year period 2009-2014 for low cash flows sub-sample and high cash flows sub-sample is: 134 and 134, respectively.
- Z-stat is the Z-statistic along with P-value (one-tailed test) of the corresponding difference.

8. Summary, discussion, and implications

This study has examined the issue of earnings management in the Egyptian context. Given the limited nature of the extant findings on earnings management reported in developing countries, this study represents a valuable contribution to the contemporary understanding of earnings management. Given that informational restrictions apply in the Egyptian market, the analysis focuses on the entire financial performance of the firms, a marked contrast to the existing studies conducted in developed countries (e.g., the US and the UK), which typically focus on a certain event or incentive.

Thus, using data from Egypt, the objective of this paper has been to examine the association between a firm's financial performance and earnings management. We examine the association between a firm's financial performance and earnings management from three perspectives: (i) whether earnings management relates to a firm's financial performance, (ii) whether firms with ineffective financial performance are more likely to manage their accounting earnings than firms with effective financial performance, and (iii) whether firms with ineffective financial performance are more likely to manage their accounting earnings upward.

Consistent with prior studies, earnings management is captured by discretionary accruals. Financial performance is measured in terms of cash flows from operations, thus allowing categorisation of the sample

group of Egyptian firms into two sub-samples: firstly, those characterized by low cash flows; and secondly, those characterized by high cash flows. Ineffective financial performance firms, i.e. underperforming or low performing firms, are defined as firms with low cash flows, while effective financial performance firms, i.e. high performing firms, are defined as firms with high cash flows.

The results show that, first, earnings management is negatively related to a firm's financial performance. This evidence shows that a firm's financial performance affects earnings management practices, i.e. the financial performance of the firm can explain the variation in earnings management; in particular, financial performance has a negative impact on the direction of earnings management. This result suggests that, when the financial performance is ineffective/low, the firms tend to adopt income-increasing strategies, i.e. they manage earnings upward. However, when the financial performance is effective/high, the firms tend to adopt income-decreasing strategies, i.e. they manage earnings downward. The possible interpretation of these results is that ineffective financial performance firms are taking earning-increasing strategies to hide their low financial performance and effective financial performance firms are taking income-decreasing strategies to shift income from good years to bad years or to reduce taxes or to avoid political costs.

Second, firms with ineffective financial performance differ systematically in earnings management from their higher-performing counterparts. Specifically, the study finds that underperforming firms increase earnings management practices as compared to high performing firms. This result suggests that earnings management is more pervasive in underperforming firms than in their effectively performing counterparts. The possible interpretation of this result is as follows. Firms characterised by effective financial performances can sometimes motivated to engage in income-decreasing policies, thereby managing their earnings downward. Situations in which this is the case relate to the desire to avoid taxes or to limit political costs. However, such incentives to reduce earnings deliberately are not much addressed in the current study because the sample firms contains a large percentage of privatized public firms in which there is considerable state ownership, and thus managers of these privatized public firms

are not motivated to use earnings management strategies to bias earnings downwards. This is because the incentives to decrease earnings do not exist in these privatized public firms. As a result, it is unlikely that the subset of our sample firms with effective financial performance (high performing firms) use earnings management practices heavily to reduce earnings. This interpretation is consistent with the results of Noronha et al. (2008) related to earnings management in the emerging market of China. However, managers of underperforming firms are inclined to employ income-increasing policies very heavily to opportunistically bias earnings upwards to offset their low financial performance in order to get higher compensation and to boost their firm's stock prices.

Third, discretionary accruals are positive and considerably greater in underperforming firms than they are in high performing firms. This result indicates that firms with ineffective financial performance increase accruals to increase opportunistically their earnings in order to hide their low financial performance as compared to their effectively performing counterparts. Generally, this finding reveals that underperforming firms are more likely than their high performing counterparts to apply income-increasing strategies. There are some possible interpretations for this result. First, managers are motivated to manage earnings upward in the event that their compensations are connected to earnings. When earnings do not exceed the required level in the case of underperforming firms, a strong incentive exists to increase earnings. Second, given the close relationship between stock prices and earnings performance, managers within ineffectively performing firms are incentivized to engage in income-increasing activities, if they want to increase the firm's stock price.

As emphasized by Jiraporn et al. (2008), two mutually incompatible arguments exist regarding the practice of earnings management. The first is that earnings management occurs when managerial personnel self-interestedly modifies the content of financial statements, thus impairing the quality of earnings as a proxy of company performance. In this case, earnings management reduces the informativeness of earnings (Lev, 1989). While the second is that managerial personnel mobilise earnings management strategies to ensure that the financial condition of their enterprise is indicated in the most accurate possible way.

In this case, earnings management enhances the informativeness of earnings. Subramanyam (1996) supported the second argument in that managers want to inform the market that accruals are employed for the purpose of efficient contracting. Thus, earnings management can be seen either opportunistic or beneficial.

This study finds evidence consistent with that financial performance is a significant predictor of earnings management in listed Egyptian firms. Moreover, the findings here in this study show that the pervasiveness of earnings management is increasing in firms with ineffective financial performance compared to their effectively performing counterparts; and, also, these ineffectively performing firms manage earnings upward. Taken together, these results suggest that listed Egyptian firms with ineffective financial performance are likely to conceal this fact through the use of opportunistic earnings management strategies. Hence, the first of the two arguments given above is supported by this study, thus contradicting the suggestions advanced by Subramanyam (1996). If opportunistic earnings management is characterized by a greater likelihood of occurring within underperforming listed Egyptian firms, then these firms' reported earnings is an inappropriate way of accounting for their value. Critically, then, the reported earnings of these firms are low in terms of their value relevance, thus contributing to a situation in which investors' reliance on earnings decreases considerably. In view of this, it is critical for users of the annual reports of Egyptian companies to be aware that firms utilize earnings management practices opportunistically as a way to conceal their ineffective/poor financial performance. Thus, given the current weak investor protection and legal enforcement regime in Egypt, these results encourage policymakers to improve corporate governance mechanisms considerably in Egypt.

It is important to acknowledge the implications of the fact that the present study examines the relationship between earnings management practices and the entire financial performance of listed Egyptian firms. In view of this, this study provides a relatively limited perspective on the motivations (incentives) of earnings management in listed Egyptian firms. This is because this study does not investigate earnings management under certain incentives or events, similar to those of developed markets. Nevertheless, this decision was appropriate to

make in view of the lack of data pertaining to such events or incentives in the Egyptian capital market, thus precluding the possibility of conducting studies similar to those conducted in developed countries. Therefore, as relevant data becomes accessible, future research in Egypt can select a specific incentive and examine if discretionary accruals are correlated with this incentive. It is noteworthy that the incentives of earnings management differ between countries. Thus, given that Egypt's institutions, both cultural and political, are distinct from those in many other countries, especially those in the developed countries, interpreting managerial behavior regarding the practice of earnings management in Egypt should seek to illuminate different incentives. Examples of such incentives include management compensation, debt covenants, import relief and political cost. If further research in Egypt demonstrated a strong relationship between these incentives and the likelihood of opportunistic earnings management, then sufficient evidence would be found with which to conclude that Egyptian corporations permit short-term managerial profits at the expense of their current shareholders. This indicates that corporate governance mechanisms in Egypt would have to be improved considerably, and there might be a call for more oversight. This would enhance the reliability and transparency of the financial statements of Egyptian firms in order to protect minority shareholders and attract more investments.

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