

Earnings Management in the Middle East Emerging Stock Markets: The Case of Egypt

Sherif M. Manzalawy

*Arab Academy for Science, Technology, Management, and Maritime Transport
School of Management, Cairo, Egypt
E-mail: smanzalawy@yahoo.com*

Kami Rwegasira

*Professor and Chair, Department of Accounting,
Finance and Economics
Maastricht School of Management, the Netherlands
E-mail: rwegasira@msm.nl*

Abstract

The primary objective of this paper is to examine whether there is evidence that Egyptian publicly listed firms use earnings management to affect their stock prices upwards. The main event examined is the initial public offerings. The sample analyzed is based on initial public offerings by firms that are listed in the Egyptian Stock Exchange.

This study is intended to extend the earnings management literature and evidence into the Egyptian capital markets as well as discuss some important implications that relate to several aspects of finance and accounting including (but not restricted to) corporate governance, accounting reporting standards setting, as well as corporate agency problems.

It is a quantitative paradigm research study. The Modified-Jones Model was used for the detection of the existence of the earnings management practice. The empirical results based on the initial public offering year of the whole sample provide support for the hypothesis that earnings management exists in the Egyptian Stock Exchange prior to the initial public offering process

Keywords: *earnings management, corporate governance, corporate agency problems, Egypt, stock market, Jones model, Middle East.*

1. Introduction

How are conventional predicaments like scandal, bankruptcy, and fraud possible in a highly regulated environment filled with intelligent people and a seemingly endless supply of financial and non-financial data? The analysis, which will be carried out throughout the course of this paper, will seek to investigate many of the reasons that could lead the management of many firms to adopt and apply many earnings management themes and practices.

The main conclusions and recommendations of this research paper are aimed at many types of interested parties, amongst who are the stock market investors. However, this research is also intended to assist the standard setters in their arduous job, where it provides them with the implications and ramifications of several earnings management policies and practices, along with some suggestions for combating them.

2. Research Question

The main emphasis of the study will be placed on the initial public offerings firms operating in the Egyptian Stock Exchange to detect whether they manage earnings prior to their public offers or not. So the main question tackled in this paper is ... *Do earnings management practices exist in the Egyptian stock exchange prior to initial public offering?*

3. Literature Review

Earnings were found to be useful in various capital market contexts; such as in the prediction of stocks' systematic risk, corporate bankruptcy, and bond ratings (Foster, 1986), equity incentives (Cheng and Warfield, 2005), and seasoned equity offerings (Cohen and Zarowin, 2010). Further, earnings are used in various contexts beyond capital markets, such as for contracting purposes within the firms as in management and executive compensation (Gao et al. 2002), CEO incentives (Stresser and Philippon, 2006), and between the firm and its creditors and suppliers (Lev, 1989).

Earnings management refers to the use of operating and discretionary accounting methods to adjust earnings to a desired outcome. A comprehensive definition for earnings management could be: "The managers' use of judgment, in financial reporting and in structuring transactions, to alter financial reports, in order to either mislead some stakeholders about the underlying economic performance of the company, or to influence contractual outcomes that depend on reported accounting numbers" (Healy and Wahlen, 1999).

Public companies feel pressure to report quarterly earnings that meet or exceed analysts' expectations – after all, failure to meet those expectations can hurt companies' stock prices (Burgstahler and Eames, 2006). This pressure can lead to practices that sometimes include fraudulent overstatement of quarterly revenues. Any of the improper and unusual revenue-transaction methods used to misstate quarterly revenues also can be used to change annual results.

If financial reports are to convey and reflect managers' information about their firms' performance, standards must permit managers (within acceptable limits) to exercise judgment in financial reporting. Management can then use their knowledge about the business and its opportunities to select reporting methods, estimates, and disclosures that match the firm's business economics, potentially increasing the value of accounting as a form of communication.

However, because auditing is imperfect, management's use of judgment also creates opportunities for "earnings management", in which managers choose reporting methods and estimates that do not accurately reflect their firm's underlying economics (Healy and Wahlen, 1999).

There are strong incentives to avoid reporting earnings decreases. Many examples were found in the press releases or earnings announcements that support this assumption. Thus, much anecdotal evidence suggests that managers try to maintain a pattern of increasing earnings (Burgstahler and Dichev, 1999).

Moreover, Zaluki et al. (2009) has mentioned that managers may engage in earnings management due to the information asymmetry between the issuer and outside investors pertaining to the value of IPOs. In general, earnings management is accomplished when income is shifted from future periods to the present or vice versa.

In general, the evidence from previous studies is consistent with firms managing earnings in order to window dress financial statements prior to *public security offerings*, to increase corporate managers' compensation and job security, to avoid violating lending contracts, to reduce regulatory costs, and/or to increase regulatory benefits.

In Egypt, however, the results by Kamel and Elbana (2009), indicate that the main incentives for managing earnings in Egypt are to enhance the chances of obtaining a bank loan; to sustain last year's profit performance; to report profits and to avoid reporting losses; and to achieve high-share valuation. The results also demonstrate that making inadequate provisions; capitalizing rather than expensing expenditures; and overestimating the inventory value are the most frequently used techniques in earnings manipulation.

Previous research studies have examined whether managers *overstate* earnings in periods prior to equity offers (e.g., initial public offerings). The findings indicate that firms report positive (income increasing) unexpected accruals prior to seasonal equity offers (Teoh, Welch, and Wong 1998 b), initial public offerings (Teoh, Welch, and Wong 1998 a), and stock financed acquisitions (Erickson and Wang 1998). There is also evidence regarding the reversal of unexpected accruals following initial public offerings (Teoh, Wang, and Rao 1998), and stock financed acquisitions (Erickson and Wang 1998).

Other studies of earnings management for capital market reasons have shown that earnings are managed to meet the expectations of the financial analysts or management (represented by public forecasts of earnings). Kasznik (1999) finds evidence that is consistent with firms in danger of falling short a management earnings forecast using unexpected accruals to manage earnings upwards (Healy and Wahlen, 1999).

The extant literature provides examples of several items used in various earnings management practices. Teoh, Wong, and Rao (1998) examine depreciation estimates and bad debt provisions surrounding initial public offerings. They find that, relative to a matched sample of non-IPO firms, sample firms are more likely to have income increasing depreciation policies and bad debt allowances in the initial public offering year and for several subsequent years.

Another unexpected accrual that could be used as a proxy for earnings management is the bank loan loss provisions. Studies of bank loan loss provisions include Beaver et al (1989), Moyer (1990), Liu and Ryan (1995), Liu et al (1997), and others. Overall these studies find compelling evidence of earnings management among banks, presumably (in part) for stock market purposes.

Finally, to emphasize a point made earlier, management's use of judgment in financial reporting has both costs and benefits. *The costs* are the potential misallocation of resources that arise from earnings management. *Benefits* include potential improvements in management's credible communication of private information to external stakeholders, leading to an improvement in resource allocation decisions. It is therefore critical for standard setters to understand when standards that permit managers to exercise judgment in reporting increase the value of accounting information to users and when the standards reduce it.

4. Methodology

The whole study takes the quantitative hypothesis testing approach and specifically uses the modified Jones model as the measurement device to detect whether earnings management exists. The model is linear regression analysis based.

5. Data Analysis

Analysis of earnings management often focuses on management's use of discretionary accruals. See, for example, Healy (1985), DeAngelo (1986), and Jones (1991). Other constructs that have been used to detect earnings management include accounting procedure changes (Healy (1985); Healy and Palepu

(1990); Sweeney (1994)), specific components of discretionary accruals (McNichols and Wilson (1988); DeAngelo et al. (1994)), and components of discretionary cash flows (Dechow and Sloan (1995)).

A number of different models have been suggested for detecting earnings management but the linear regression-based model presented by Jones (1991) is the most frequently used. The underlying assumption with the Jones model is that earnings are managed through accounting accruals (Hoglund, 2013). Existing models range from simple models in which discretionary accruals are measured as total accruals, to more sophisticated models that attempt to separate total accruals into discretionary and non-discretionary components. There is, however, very few systematic evidence bearing on the relative performance of these alternative models at detecting earnings management (Dechow et. al, 1995).

Some models were used to detect the existence of earnings management in different contexts, among the most famous are; Healy model, 1985; DeAngelo model, 1986; Jones model, 1991; Modified Jones model, 1995; Industry model, 1997; Burgstahler and Dichev, 1997; Tests of distribution of reported earnings, 1998; Kasznik, 1999; Kothari et al., 2005; Grouping genetic algorithm, Hoglund, 2013.

Amid the various discretionary accrual models, Dechow et al. (1995) report that the Jones and the modified-Jones models (i.e., the modification by Dechow et al., 1995) perform the best. The main difference between the two models is that the modified-Jones model attributes the entire change in receivables to earnings management.

Based on what was mentioned earlier, and bearing in mind the drawbacks of the various models, the researchers have chosen to follow the event studies methodology and to apply the modified-Jones model to measure the earnings management attributes in relation to this study, as it is thought to have the most general scope of action and application. The usual approach in event studies is to identify the timing of the main event, and then to examine the effect on the dependent variable, in this research study, it is the discretionary accruals.

A relationship of that type can be analyzed by identifying abnormal accruals behavior conditional on the occurrence of the event. Annual abnormal accruals, for a specified window surrounding the event – period, are calculated.

The main event and the sample analyzed in this paper are based on initial public offerings by firms listed on the Egyptian Stock Exchange. The following steps are followed in the design of the empirical analysis:

- Step 1: The selection of the study period
- Step 2: Sample selection
- Step 3: Selection of the estimation and the examination period
- Step 4: Defining the model used to detect the existence of earnings management
- Step 5: Application of the necessary statistical tests

6. Sample Data

The data used in this study are from a sample of firms that has carried out the initial public offering (IPO) process (*figure 1*), and that are listed on the Egyptian Stock Exchange. Due to several limitations, 38 firms were chosen to comprise the final sample of the study (*table 1*). The following criteria are used in the selection of the sample:

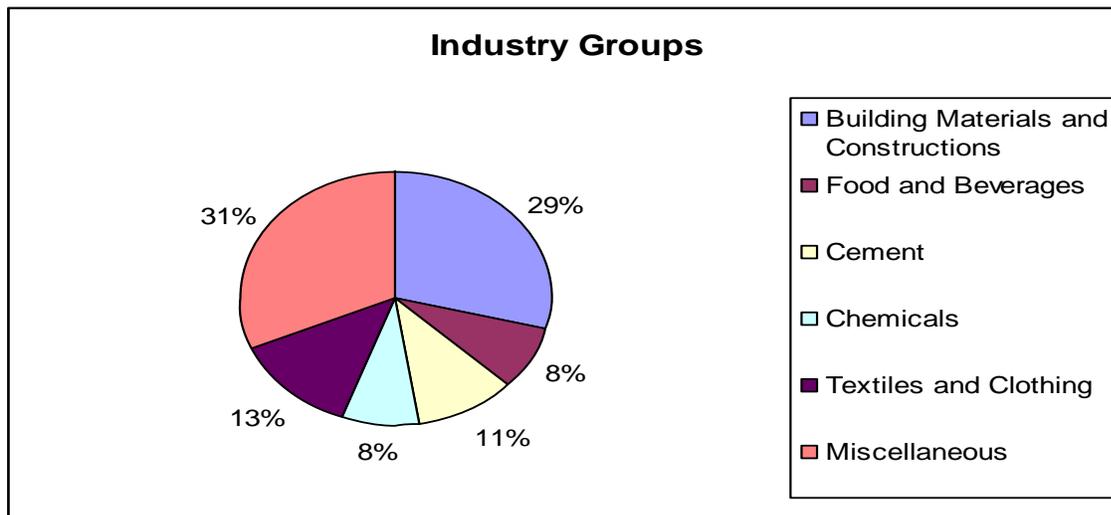
- The firm must be a member of Egyptian Stock Exchange
- The firm must have been continuously listed in the Egyptian Stock Exchange.
- The firm's stock was traded under normal conditions (i.e., the firm was not in bankruptcy, or subject to trading suspension, etc...)

- The sample is comprised of diverse industry groups (*figure 1*)
- Annual report announcements are available
- No stock split has occurred over the period of investigation
- The study period begins from 31/12/1994 to 31/12/2002 (*the selection of the study period was based mainly on the commencement of the Initial Public Offerings process (IPO) for the chosen sample firms. The researcher was confined to such period because the major stage of the economic reform program in Egypt started taking place during this period coupled by intensive initial public offerings to boost the economic reforms and the privatization process.*)

Table 1: Sample Description by the Industry Group

Industrial Group	No. of Firms	Percentage of Total Sample
Building Materials and Constructions	11	29%
Food and Beverages	3	8%
Cement Industry	4	11%
Chemicals	3	8%
Textiles and Clothing	5	13%
Miscellaneous	12	31%
Total	38	100%

Figure 1: Industry Groups



7. Measures of Earnings Management

Earnings management can be achieved by several means such as the *use of accruals, changes in accounting methods, and changes in capital structure* (e.g., debt – equity swaps). This paper focuses on total accruals as the source of earnings management. More specifically, discretionary accruals are used as a measure of managers' earnings manipulations during the Initial Public Offering process.

As the Modified-Jones Model will be applied, the discretionary portion of *total* accruals is used in this study to capture earnings management rather than the discretionary portion of a single accrual account (as applied in McNichols and Wilson, 1988) because total accruals should capture a larger portion of managers' manipulations.

Total accruals are calculated as the change in non-cash working capital before income taxes payable less total depreciation expense. The change in non-cash working capital is defined as the change in current assets other than cash and short term investments less current liabilities other than current maturities of long term liabilities and income taxes payable.

8. Research Hypothesis

The main hypothesis of this paper is about whether earnings management exists in the Egyptian Stock Exchange, prior to the initial public offering process, or not. The presence of positive abnormal accruals prior to the event date is considered to be an evidence of earnings management existence.

The main hypothesis can be restated as follows:

H₁: *Initial Public Offering firms in the Egyptian Stock Exchange use earnings management (prior to their public offerings) in order to affect their stock prices upwards.*

The statistically testable form of the hypothesis can be expressed as follows:

H₀: $V_t = \text{zero}$ No Earnings Management
 H₁: $V_t \neq \text{zero}$ Earnings Management Exists

Where, V_t , which is the standardized annual prediction error, is used as an estimate of the discretionary accruals at time t

8.1 Hypothesis Testing

8.1.1 Accruals Model

The descriptive statistics presented later can be interpreted as support for the earnings management hypothesis only if one assumes that the difference between current – and prior – year accruals is due solely to changes in discretionary accruals because non – discretionary accruals are assumed to be constant from period to period.

To relax this assumption, the following, Modified Jones, expectations model for total accruals to control for changes in the economic circumstances of the firm is used:

$$TA_{\tau}/A_{\tau-1} = \alpha_1 [1/A_{\tau-1}] + \alpha_2 [(\Delta REV_{\tau} - \Delta REC_{\tau})/A_{\tau-1}] + \alpha_3 [(PPE_{\tau})/A_{\tau-1}] + \varepsilon_{it} \quad (1)$$

TA_t = total accruals for year t for firm i ;

ΔREV = revenues in year τ less revenues in year $\tau-1$ scaled by total assets at $\tau-1$;

ΔREC = net receivables in year τ less net receivables in year $\tau-1$ scaled by total assets at $\tau-1$;

PPE_{τ} = gross property plant and equipment in year τ scaled by total assets at $\tau-1$;

$A_{\tau-1}$ = total assets at $\tau-1$; and

$\alpha_1, \alpha_2, \alpha_3$ = firm specific parameters

ε_{it} = error term in year t for firm i .

The composition of total accruals (TA_t) used in the previous equation is as follows:

$$TA_t = [\Delta \text{Current Assets} - \Delta \text{Cash}] - [\Delta \text{Current Liabilities}] - \text{Depreciation and Amortization expenses} \quad (2)$$

where the change (Δ) is computed between time t and time $t-1$.

In equation (1), gross property plant and equipment and change in revenues (less change in receivables) are included in the expectations model to control for changes in nondiscretionary accruals caused by changing conditions. Total accruals (TA) includes changes in working capital accounts, such as accounts

receivable, inventory and accounts payable, that depend to some extent on changes in revenues. Revenues are used to control for the economic environment of the firm because they are an objective measure of the firm's operations before managers' manipulations, but they are not completely exogenous (Reported earnings may be affected to some extent by managers' attempts to increase reported earnings, for example, premature revenue recognition).

That's why the change in the receivable level was deducted from the change in revenues, in order to mitigate the managers' effect on revenues). Gross property, plant, and equipment is included to control for the portion of total accruals related to nondiscretionary depreciation expense. Gross property, plant, and equipment is included in the expectation model rather than changes in this account because total depreciation expense (versus the change in depreciation expense) is included in the total accruals measure.

8.1.2 Empirical Testing

All variables in the accruals expectations model are scaled by lagged assets (total assets at year $t-1$, $[A_{t-1}]$), to reduce *heteroscedasticity*. As described in Kmenta (1986), a weighted least squares approach to estimating a regression equation with a heteroscedastic disturbance term (i.e., the un-scaled regression equation) can be obtained by dividing both sides of the regression equation by an estimate of the variance of the disturbance term (i.e., resulting in a scaled regression equation).

In this case, lagged assets (A_{t-1}) are assumed to be positively associated with the variance of the disturbance term. The need for scaling was assessed, by Jones, by correlating the squared residuals obtained from the unscaled expectations model (i.e., equation (1) without scaling) with squared lagged assets.

Other scaling factors have been used to reduce heteroscedasticity, for example, Lipe (1986) deflated earnings components by the Consumer Price Index, and Rayburn (1986) scaled earnings components by the market value of equity.

Ordinary least squares method is used to obtain estimates a_1 , a_2 , and a_3 , of α_1 , α_2 , and α_3 respectively. This model assumes the relation between non – discretionary accruals and explanatory variables is stationary. The prediction error is defined as:

$$u_{ip} = \Delta TA_{\tau} / A_{t-1} - (\alpha_1 [1/A_{\tau-1}] + \alpha_2 [(\Delta REV_{\tau} - \Delta REC_{\tau}) / A_{t-1}] + \alpha_3 [(PPE_{\tau}) / A_{t-1}]) \quad (3)$$

Where; p = year index for years included in the prediction period. The prediction error, u_{ip} , represents the level of discretionary accruals at time p .

The use of a long time series of observations improves estimation efficiency but also increases the likelihood of structural change occurring during the estimation period. The descriptive statistics presented here are based on the expectations model used by Jones (1991), which was partially based on the expectations model used by DeAngelo (1986). Jones used total accruals from a prior period ($t-k$) as a measure of the normal "total" accruals. Jones defines the *abnormal total accrual* (ΔTA) as the difference between current total accruals and normal total accruals, which in turn can be separated into discretionary and non – discretionary accruals:

$$\Delta TA_t = (TA_t - TA_{t-k}) = (DA_t - DA_{t-k}) - (NA_t - NA_{t-k}). \quad (4)$$

As Kaplan (1985) notes, changes in several working capital accounts and, thereby, accruals, depends upon the economic circumstances of the firm. For example, if nondiscretionary accruals are a function of revenues, then the negative change in accruals may simply be due to changes in nondiscretionary rather than discretionary accruals.

If revenues affect the level of nondiscretionary accruals, then an expectations model used to measure nondiscretionary accruals must take this relation into account. That is why the modified Jones model was chosen to be applied in this study to detect the presence of earnings management, as it covers the previous concerns.

Since the sum of a firm's income over all years must equal the sum of its cash flows, managers must at some point in time reverse any "excessive" earnings – increasing (decreasing) accruals made in the past. The results for year +1 will indicate whether changes in accruals are significantly different from zero or not. The results will also be concerned with the changes in revenues and cash flows.

However, the results may prove to be indifferent from zero or even still positive due to the fact that managers tend to reverse "excessive" earnings – increasing accruals over a period of more than one year or that they have other incentives that conflict with the reversal such as management compensations.

Predictions regarding the sign of the regression coefficients are consistent with the results reported in Jones (1991) for regression equations estimated for four individual components of total accruals: accounts receivable, inventory, accounts payable, and depreciation expense. The coefficient for property, plant, and equipment was significantly negative for the depreciation expense regression and insignificant for all others. The coefficient for the change in revenues was significantly positive for accounts receivable and inventory, significantly negative for accounts payable, and insignificant for depreciation expense.

Tests of the earnings management hypothesis is based on the estimate of discretionary accruals (the prediction error), u_{ip} , during years -2 through 0. One method of testing the overall significance of managers' discretionary accruals is to compute a standardized prediction error similar to that used by Patell (1976). For each prediction error, an estimated standard deviation, $\sigma(u_{ip})$, is calculated. If the prediction errors are normally distributed, then the following ratio of the prediction errors to their standard deviations has a t -distribution with $T_i - 3$ degrees of freedom:

$$V_{ip} = u_{ip} / \sigma(u_{ip}) \quad (5)$$

The V_{ip} s are referred to as "standardized prediction errors."

8.1.2.1 Testing the Whole Sample

The following discussion provides descriptive statistics for the multiple regressions estimated over all available observations. For the whole sample, the average residual first – order autocorrelation is 2.20. The Durbin – Watson two tailed test statistics indicates that the first order autocorrelation is significant at the .05 level, and thus indicates that there is, approximately, no autocorrelation.

8.1.2.2 Descriptive Statistics

Table 2 and table 3 present the descriptive statistics concerning the V_{ip} s (standardized prediction errors) of the whole sample and its related t-statistics. The V_{ip} s are based on prediction errors from the total accruals expectations models estimated (see equations (2), (3), and (4)) over periods using all available data through year -2. The t-statistics for years -2 and -1 are 0.136 (with a one-tailed significance level of 0.893) and -0.0529 (with a one-tailed significance level of 0.453), respectively.

Thus, years -2 and -1 (table 2) do not provide support for the earnings management hypothesis. On the other hand, year 0 has a t-statistic of -2.512 (with a one-tailed significance level of 0.027). Thus, year 0 (the main event year) provides support for the earnings management hypothesis.

The t-statistics for years +1, +2, and +3 (table 3) are -0.771 (with a one-tailed significance level of 0.446), -0.267 (with a one-tailed significance level of 0.791), and 0.766 (with a one-tailed significance level of 0.449), respectively. Based on this tests there does not appear to be a reversal of discretionary accruals in the years subsequent to the initial public offering.

Table 2 Annual standardized prediction error (V_{it}) * for years (-2 through 0) [Whole Sample]

Descriptive Measure\Year	-2	-1	0
Mean	0.116	-0.0529	-0.1381
Median	-0.0325	-0.0663	-0.1330
Standard Deviation	0.49758	0.40671	0.348
Variance	0.248	0.165	0.121
t-statistic	0.136	-0.759	-2.512
p-value	0.893	0.453	0.027
Confidence Interval (95%)	(-0.162, 0.185)	(-0.1948, 0.0890)	(-0.2597, -0.0166)

Table 3 Annual standardized prediction error (V_{it}) for years (+1 to +3) [Whole Sample]

Descriptive Measure\Year	+1	+2	+3
Mean	-0.0917	-0.0258	0.2856
Median	-0.1412	-0.0352	-0.0782
Standard Deviation	0.6934	0.5634	2.1687
Variance	0.481	0.317	4.703
t-statistic	-0.771	-0.267	0.766
p-value	0.446	0.791	0.449
Confidence Interval (95%)	(-0.336, 0.1503)	(-0.2224, 0.1707)	(-0.4717, 0.1417)

9. Limitations

A number of possible *caveats* might be worthy keeping in mind. The empirical tests might not support the earnings management hypothesis for several reasons. *First*, managers may believe the authorities adjust for their discretionary accounting choices reducing their incentives to use accounting choices to manage earnings. *Second*, financial performance of the firms under study may be so good that managers do not need to use accounting choices to manage earnings.

Third, managers may rely on cost allocations rather than accruals to manage earnings for the product line investigated by the authorities. Cost allocations can be used by managers to shift revenues and expenses within companies suspected to be carrying earnings management. *Finally*, the power of the tests may not be sufficient enough to detect managers' income – increasing accounting choices. The sample selection procedures and empirical tests described in previous sections were designed to mitigate as many of these limitations as possible.

Also, it is worth mentioning that the empirical results, concerning the food and beverages sector, have provided support for the existence of earnings management hypothesis in that sector. This could be due to several factors; the firms' management were under pressure to report increases in earnings prior to the privatization process of their firms, especially it was near certain that the management of such firms will be replaced after the initial public offering; also, this sector is considered to be more inelastic than other sectors and with more saturated markets than the other sectors thus it is more difficult to achieve unexpected profits before the IPO to affect the prices upwards; moreover, a possibility of managing the earnings could have presented itself to the management and was adopted thereof; finally, a mix of the previous factors could have occurred.

10. Summary and Conclusions

The main emphasis of this research paper is placed on the initial public offerings firms operating in the Egyptian Stock Exchange to detect whether they manage earnings prior to their public offers or not. The main question tackled in this paper is; do earnings management practices exist in the Egyptian stock exchange prior to initial public offering?

Concerning the whole sample under study, representing the Egyptian Stock Market, evidence was found that supports the hypothesis that firms undergoing Initial Public Offering process use earnings management to affect their stock prices upwards.

Tests of earnings management hypotheses were based on firm specific expectations models used to estimate "normal" total accruals. These models allow for changes in nondiscretionary accruals that are caused by changes in economic condition.

11. Future Research (*Suggestions for further investigation and research.*)

With considerable evidence presented that indeed earnings management practice broadly exists in the Egyptian stock market particularly prior to the initial public offering event, it would be enlightening to study next the motivations which drive this practice specifically in Egypt as well as the methods used to achieve this goal.

References

- Beaver, W., C. Egar, S. Ryan, and H. Wolfson. (1989). Financial reporting, supplemental disclosures, and bank share prices. *Journal of Accounting Research* 27, 157-178.
- Bergstresser, D., and Philippon, T. (2006). CEO Incentives and earnings management. *Journal of Financial Economics* 80, 511-529.
- Burgstahler, D., and Eames, M. (2006). *Management of Earnings and Analysts' Forecasts to Achieve Zero and Small Positive Earnings Surprises*. *Journal Business Finance & Accounting* pp. 633–652.
- Burgstahler, D., and I. Dichev. (1997). Earnings management to avoid earnings decreases and losses. *Journal of Accounting and Economics* 24, 99-126.
- Cheng, Q., and T. Warfield. (2005). Equity incentives and earnings management. *The Accounting Review* 80, 441-476.
- Cohen, D., and P. Zarowin. (2010). Accrual – based and real earnings management around seasoned equity offerings. *Journal of Accounting and Economics* 50, 2–19.
- DeAngelo, L. (1986). Accounting numbers as market valuation substitutes: A study of management buyouts of public stockholders. *The Accounting Review* 61, 400-420.
- DeAngelo, H., DeAngelo, L., Skinner, D., (1994). Accounting choices of troubled companies. *Journal of Accounting and Economics* 17, 113–143.
- Dechow, P., R. Sloan, and A. Sweeney. (1995). Detecting earnings management. *The Accounting Review* 70, 193-226.
- Erickson, M., and S. Wang. (1999). Earnings management by acquiring firms in stock for stock mergers. *Journal of Accounting and Economics* (April), 149-176.
- Foster, G., Olsen, C., and T. Shelvin. (1986). Earnings releases, anomalies, and the behaviour of security returns. *The Accounting Review* 4, 574 – 603.
- Gao, P., Shrieves, R., (2002). Earnings management and executive compensation: A case of overdose of option and underdose of salary? Unpublished working paper. University of Tennessee, Knoxville.
- Healy, P. M. (1985). The effect of bonus schemes on accounting decisions. *Journal of Accounting and Economics* 7, 85-107.
- Healy, P. M., and J. M. Wahlen. (1999). A review of the earnings management literature and its implications for standard setting. *Accounting Horizons* 13, 365-383.
- Healy, P. M. and K.G. Palepu (1993). The effect of firm's financial disclosure policies on stock prices. *Accounting Horizons* 7, 1-11.
- Hoglund, H. (2013). Estimating discretionary accruals using grouping genetic algorithm. *Expert Systems with Applications* 40: 2366 - 2372.
- Jones, J. (1991). Earnings management during import relief investigations, *Journal of Accounting Research* 29, 193-228.
- Kamel, H., and S. Elbanna. (2009). Assessing the perceptions of the quality of reported earnings in Egypt. *Managerial Auditing Journal*, Vol. 52.
- Kaszniak, R. (1999). On the association between voluntary disclosure and earnings management. *Journal of Accounting Research* 37, 57-83.
- Kothari, S., A. Leone, and C. Wasley. (2005). Performance matched discretionary accrual measures. *Journal of Accounting and Economics* 39, 163-197.

- Liu, C., and S. G. Ryan. (1995). The effect of bank loan portfolio composition on the market reaction to and anticipation of loan loss provisions. *Journal of Accounting Research* 33, 77-94.
- McNichols, M. and G. Wilson. (1988). Evidence of earnings management from the provision of bad debts. *Journal of Accounting Research* 26, 1-21.
- Moyer, S. (1990). Capital adequacy ratio regulations and accounting choices in commercial banks. *Journal of Accounting and Economics* 13, 123-154.
- Patell, J. (1976). Corporate forecasts of earnings per share and stock price behavior: empirical tests. *Journal of Accounting Research* 14, 246-255.
- Subramanyam, K. R. (1996). The pricing of discretionary accruals. *Journal of Accounting and Economics* 22, 249-281.
- Sweeney, A. (1994). Debt covenant violations and managers' accounting responses. *Journal of Accounting and Economics* 17, 281-308.
- Teoh, S., I. Welch, and T. J. Wong. (1998 a). Earnings management and the post issue performance of seasoned equity offerings. *Journal of Financial Economics* 50, 63-99.
- Teoh, S., I. Welch, and T. J. Wong. (1998 b). Earnings management and the long term market performance of initial public offerings. *Journal of Finance* 53, 1935-1974.
- Teoh, S., I. Welch, and T. J. Wong. (1998). Earnings Management and the Long-Run Market Performance of Initial Public Offerings. *Journal of Finance* 6, 1935-1974
- Zaluki, N., K. Campell, and A. Goodacre (2009). Earnings management in Malaysian IPOs: the East Asian crisis, ownership control and post-IPO performance. Working paper, (www.papers.ssrn/abstract=963085).