The Association between Management Earnings Forecast Deviation, Earnings Management, and the Stock Prices: Evidence from the Emerging Markets

Salah Abdel-Hafeez Mostafa Ali

Lecturer in Accounting, Accounting Department, Faculty of Commerce, Assiut University, Egypt &

Assistant Professor in Accounting, College of Business Administration, University of Bahrain, Kingdom of Bahrain

samali@uob.edu.bh

Dr. Salah Abdel-Hafeez Ali

ABSTRACT

This study empirically investigates the association between management earnings forecasts Deviations (MEFDs) and both earnings management (DACC or EM) and the stock prices (SP/SPC) of listed companies on the Egyptian Exchange (EGX 100) as one of the emerging markets. To achieve the study's objectives, 351 firm-year observations were used during the period from 2016-2019. Four hypotheses were tested, and two models were employed for hypotheses testing. In the first model, EM was regressed with three independent variables named issue management earnings forecasts (ISUFOR), audit management earnings forecasts (AUDFOR), and MEFDs. In the second model stock price was regressed with MEFDs. Some appropriate control variables were added to both models. The findings of this research showed that about 49% of listed companies on the Egyptian stock market issue MEFs, while only about 29% of them audit such forecasts. Egyptian listed companies are still involving in EM practice at average of 12% of earnings upward and minimum of -36% (downward) and maximum of 79% (upward). The findings support all hypotheses, as both models are significant. EM is positively and significantly associated with ISUFOR and MEFDs, while it is negatively and significantly associated with AUDFOR. SP (SPC) is negatively and significantly associated with MEFDs. The findings of this study have wide implications for future research on the usefulness of forecasted accounting information in manipulating earnings and stocks valuation. This study reveals that accounting information may also be useful for stock market regulators and investors.

Keywords - Earnings management, management earnings forecasts, stock prices, Emerging Markets, Egypt.

Dr. Salah Abdel-Hafeez Ali

1. Introduction:

Most companies listed on the stock markets try to catch the attention of investors and maximize the value of their stocks. One way for companies to do so is disclosing management earnings forecasts (MEFs). MEFs defined as voluntary disclosures that provide information about expected earnings for a firm (Hirst et al., 2008). It is a technique used by managers to create market earnings expectations, predict litigation concerns, and affect their reputation to achieve accurate reporting and transparency. Some companies listed on the Egyptian stock market disclose their earnings forecasts, and management in some cases exaggerates their forecasts to attract investors.

Management in most cases struggles to meet or beat their forecasts to keep its creditability, which could result in using accrual system to carry out earnings management (EM). The managers tend to bias their forecasts which led to earnings manipulation (Beyer, 2009).

The accounting literature addresses numerous studies about the management motivations to practice accrual discretion. Beyer (2009) reported that managers practice EM to decrease the earnings surprise or forecast error, at the date of earnings announcement. Also, they bias their forecasts downward if the forecast error is positive (reported earnings exceed managers' forecasts).

This study follows the literature that consider the most imperative motivation for management to manipulate earnings is to meet or beat its earnings forecasts which has disclosed or could be driven from the analysts' forecasts.

This study expects that companies disclosed their forecasts are more motivated to manage earnings than companies they do not disclose. Also, it expects that the level of performing earnings management will depend on the difference between earnings forecasts and the expected actual earnings, which called management earnings forecasts deviations (MEFDs).

Forecasted companies try to make their forecasts more creditable and reliable, so they audit their forecasts by external auditor. This study expects that the companies which audited their forecasts are less likely to manage earnings.

Companies try to meet or beat MEFs by manipulating expected earnings to decrease MEFDs. So, this study expects that the stock prices of these companies will be affected depends on the level of conformity between the MEFs and actual earnings which are MEFDs.

Reviewing literature of the association between MEFDs, EM and stock prices shows that most studies were conducted in the developed countries. However, studying such association in the developing countries is a very rare, and most studies have concentrated on examining the level of voluntary disclosure in the annual reports or the motivations of earnings management in general (Beyer, 2009; Ebaid, 2012; Elsayed & Hoque, 2010; Hirst et al., 2008; Ismail & El-Shaib, 2012; Khlif et al., 2015; Makhaiel & Sherer, 2017; Samaha & Dahawy, 2010).

Emerging markets such as Egypt have different attributes from the developed markets such as the number and size of companies registered, the stock market regulations, level of voluntary and non-voluntary disclosure and the sophistication of investors and analysts, which justifies the need for this study.

This study contributes to the accounting literature, by giving more attention to association between MEFDs, EM and understanding the market reaction to such association. Also, it has mainly great implications for managers, auditors, investors, and regulators. Managers can benefit from this study by having more knowledge regarding MEFs and MEFDs, which could improve their decisions regarding whether to issue forecasts or not, the characteristics should be possessed in such forecasts, and the potential consequences could affect the other parties. Auditors also can benefit from this study by recognizing the managers' earnings forecasts,

give more attention for adding creditability to such forecasts. Moreover, expand their responsibilities to engage in auditing of MEFs. Investors will find this study useful because MEFs are a future information that more relevant to their investing decisions. Investors will learn about managers choices such as EM and the consequences that may follow. Finally, this study directs regulators to pay more attention for the usefulness of MEFs and to improve the quality, frequency, and effectiveness of MEFs, and may regulate such disclosure in the future.

The remainder of the paper proceeds as follows. In Section 2 the study will briefly review legal, regulatory, and cultural environment in Egypt. Section 3 presents literature review and hypotheses development. Section 4 formally introduces research design. Section 5 discuss the results. Section 6 concludes, and finally section 7 the references.

2. Legal, Regulatory and Cultural Environment in Egypt:

Even though MEFs are voluntary disclosures, the Egyptian context provides some laws, regulations, and standards that can influence the MEFs chrematistics. The most valuable laws and standards are shown as follows:

- Capital Market Law no. 95 of 1992 and its Executive Regulations which prohibiting companies to disclose or assisting to disclose any misleading or unaudited information. Also, it disallows companies to provide all types of media with any inaccurate information. Moreover, it prohibits the companies from disclosing any information actual or forecasted about the stock market in purpose of affecting the stock price (EFSA, 1992).

- The Law no. 10 of 2009, which established The General Authority of Financial Control for overseeing any information disclosed by companies to affect the stock price (EFSA, 2009).

- Egyptian Standards on Auditing (ESA No. 3400) regarding the auditing of future information. According to this standard the external auditor should audit the forecasted information and provide a report including his/her opinion about the creditability of such information (FRA, 2008).

- The updated version of Egyptian Accounting Standards (EASs) issued according to Decree No. 110 of 2015 by Minister of Investment to be applied from January 1, 2016 that includes 39 standards. The main objective of the updated version is to support the investment and capital market in Egypt and increase its competitiveness, improve the quality of financial statements, and achieve more disclosure and transparency. The EASs are compatible with international financial reporting standards (IFRSs) with very minor modifications in two points as legal requirements. The first point includes dividends distributions of employees and board of directors to be profit distribution rather than expenses, and the second related to the accounting treatment of lease where the lessor keeps in his books the leased asset and depreciates it. Also, issuing the new amendment No. 69 of 2019 amending some of the EASs by adding three accounting standards in accordance with IFRSs.

- The Egyptian Code of Corporate Governance encourages the board of directors to disclose the future information of companies for the coming year activities in the annual report.

- The Public Business Sector Law No. 203 of 1991 regarding privatization program which aimed to presents the market oriented economic and to create a new economic atmosphere that help the private sector to lead the economy. This business environment set levels of profits as target to be achieved which expected to create a set of incentives for earnings manipulation by the managers of companies to achieve their target (EMPBS, 1991).

- The Egyptian Corporate Governance Code, in its third release in August 2016, provide more attention to disclosure and transparency by comprising complete chapter. Disclosure and transparency should include information regarding the expectations for future performance.

- The behavior of investors and analysts is another environmental factor that affect MEFs (EIoD, 2016) .

Abouelwafa (1996) documents that both investors and analysts ask for forward-looking information, such as MEFs, and prefer the audited information. Cardinaels (2016) has concluded that the disclosure of MEFs affected the degree of honest reporting, so the investors value such forecasts. Ismail and El-Shaib (2012) argued that the managers motivations to issue earnings forecasts are to mitigate the effects of information asymmetry and attract investors.

- In Egypt as emerging market, financial analysts' forecasts are not generally considered as benchmarks, instead the level of earnings on the industrial norms or last year profits with some adjustments are privileges profits level (Baginski et al., 2016).

3. Literature Review and Hypotheses Development:

The association between MEFDs, EM and stock price has received extensive attention in the accounting literature in the developed countries. Dutta and Gigler (2002) developed a theoretical model that measures the association between EM and voluntary MEFs in an agency setting. Rogers and Stocken (2005) investigates the ability of market to evaluate the truthfulness of MEFs and the market response to such forecasts, and the extent to which managers bias their forecasts and their incentives to do so. Cormier and Martinez (2006) examined the managers' motivations to participate EM to achieve the forecasted earnings in the France context for (IPOs) companies. Gong et al. (2009) examined the association between current year accruals and management forecasts errors of following year. Another study examined the association between stock price after issuing

quarterly MEFs (Das et al., 2012). Beyer (2009) set a model for mangers' proclivity to bias their forecasts, practicing EM, and evaluate the reaction of capital market to MEFs and earnings release. Kraft et al. (2014) reassess the stock market response to MEFs while Foerster et al. (2014) investigated whether the MEFs influence the investors' assessment on the long term of corporate risk and corporate value. Zuo (2016) investigates the effect of price information on management forecasts.

Reviewing the accounting literature reveal that forecasting companies are trying to meet or beat their earnings forecasts which could result in engagement in EM. The level of EM depends on the level of MEFDs and whether the MEFs have been audited or not. The market will reward the companies with low level of EM and MEFDs, so their stock prices are expected to be higher than companies with high level of EM and MEFDs.

3.1 Forecasting and Non-forecasting Companies:

Because MEFs are voluntary disclosures, the manager of a company is always facing a question whether to issue a forecast or not. The issue of MEFs is usually affected by both the firm-specific characteristics and the context in which the firm is exist. MEFs have numerous impacts; they affect stock prices (Pownall et al., 1993), bid-ask spreads(Coller & Yohn, 1997), and analysts' forecasts (Baginski & Hassell, 1990).

The importance of MEFs for the company itself, managers, auditors, investors, and regulators encourage companies to issue such forecasts. In the Egyptian context about 80% of companies disclose the expected earnings next year in form of point or range. However, some other companies are still afraid to issue forecasted numbers instead disclose a general statement in the company annual report about the expected earnings (e.g., we expect increasing in the profit next year).

Prior studies have documented various incentives that could motivate managers to bias their MEFs. Matsumoto (2002); (Ota, 2011) concluded that the main reason for such bias is to inflate market earnings expectations, while (Frankel et al., 1995; Lang & Lundholm, 2000) backed it to facilitate security issuance, and (Aboody & Kasznik, 2000; Noe, 1999; Rogers & Stocken, 2005) related it to improve the trading profitability.

We have learned from accounting literature that exaggerating or biasing the MEFs leads to EM as earnings be likely to be managed toward expectations in general and toward MEFs in particular (Burgstahler & Dichev, 1997; Kasznik, 1999). Prior research provides evidence that practicing of EM is usually to avoid earnings decrease and loss (Beatty et al., 2002), and to avoid any negative surprise (Matsumoto, 2002).

This study assumes that the company's goal to meet or beat the MEFs will lead to practicing EM, and the company's issue MEFs are more motivated to manage earning than the companies they do not. This assumption raises the following hypothesis:

H1: There is a positive significant association between issuing of management earnings forecasts (ISUFOR) and earnings management (EM).

3.2 Auditing of Management Earnings Forecasts:

Even though MEFs are voluntary disclosure, managers aware that forecasts represent precise estimates of future earnings, so there is a need to add more creditability by auditing such forecasts. The need for auditing will make them accurate and useful. Baginski and Hassell (1997) reported that managers produce companies issue more precise MEFs with a greater following by analysts, while Bamber and Cheon (1998) stated that companies are less likely to issue MEFs the legal liability is high. Another study found that companies with more effective audit committee, have more accurate forecasts, and better market response (Karamanou & Vafeas, 2005). This result suggests that investors have bigger confidence in MEFs in companies with more effective audit committees.

The verifiability of MEFs is a fundamental issue that adds creditability to managerial choices. Baginski et al. (2016) focused on two reasons that increase the importance of forecasts verifiability; first, MEFs could be biased; second, verifiability of MEFs affects its credibility which in turn affects stock prices and ⁄ or the revising of analysts' forecasts, and any other information related to MEFs. On the other hand, (Lev & Penman, 1990; Rogers & Stocken, 2005) claim that MEFs are credible because investors can verify these forecasts by comparing them with the audited earnings. This argument ensures that the investors them self-give the creditability for MEFs by comparing these forecasts with the subsequent realized earnings (Baginski et al., 2004).

In the Egyptian context, the research regarding auditing of MEFs is very rare. Abouelwafa (1996) documented that about 16.5% of the Egyptian companies' audit MEFs. We expect some more companies now are involved in auditing of such forecasts, especially after issuing the Egyptian standards on auditing (FRA, 2008) regarding the auditing of future information. So, this study suggests that the companies which audited their forecasts are less likely to manage earnings than the companies that do not audit. This suggestion raises the following hypothesis:

H2: For forecasting companies, there is a negative significant association between auditing of management earnings forecasts (AUDFOR) and earnings management (EM).

3.3 Management Earnings Forecasts Deviations (MEFDs):

Gong et al. (2009) defined MEFDs (errors) as the difference between actual earnings and forecasted earnings. Two main reasons could create such deviations; first, intentionally when managers possess superior private information about their companies' business prospects and the processes of practicing EM. Second, unintentionally, when managers work in an uncertain environment, their knowledge about companies' business could be imperfect, which can lead to inaccurate assessments of the future

performance of companies(Huang, 2020). Although both forecasting and non-forecasting companies may have incentives to improve their financial picture before issuing the actual annual report, however the forecasting companies have more incentives to do so. Clarkson (2000) suggest that forecasting companies recognize that future earnings are valuation relevant, and companies provide such forecasts are giving investors a benchmark that help them to estimate future earnings. According to agency theory, managers have strong incentives to engage in EM. Degeorge et al. (1999) observe three aspects encourage managers to involve in EM; first, reporting positive earnings, to meet expectations, and to maintain a standing performance. Several implications could be happened if managers fail to reach the objectives sited according to agency theory implicit contract. First, the company market value could be affected in a negative way. Second, the company's ability for raising fund in the future could be impeded. Third, credibility of management dealings with stakeholders could be harmed. Thus, it is expected that MEFs leads to EM during forecasted period.

The prior research (Beyer, 2009; Cormier & Martinez, 2006; Dutta & Gigler, 2002; Gong et al., 2009), assume that earnings management undertaken in the current period may be used to report earnings that meet or slightly beat relevant earnings targets. Another study finds that managers manipulate earnings upward if reported earnings fall down of MEFs (Kasznik, 1999). Constant with the prior research this study suggests that the level of management earnings forecasts deviation will determine the level of earnings management. This suggestion raises the following hypothesis:

H3: For forecasting companies, there is a positive significant association between management earnings forecasts deviations (MEFDs) and earnings management (EM).

3.4 Management Earnings Forecasts Deviations (MEFDs) and Stock Price:

As investors are highly sensitive to any earnings surprise at the earnings announcement date, companies' managers work hard to reduce MEFDs by practicing EM. On the other way companies' managers care about any deviation in their forecasts, (Kasznik, 1999) reported that managers manipulate earnings upward or downward to meet or slightly beat forecasts. Pownall et al. (1993) found the average stock price at earnings announcement date is higher than average price at the forecast release date. This result suggests that investors give attention to both actual earnings and forecasted earnings, however, more attention is given to actual earnings because they are more precise signal of future cash flow.

Correction the information asymmetry problems could be a considerable reason for issuing MEFs, which will be affected stock price (Heflin et al., 2016). Other studies confirmed this result by reporting that MEFs have information content and affect the stock price. (Patell, 1976; Penman, 1980). Also, the prior forecast accuracy and frequency could affect the stock price. Hutton et al. (2003) investigate the impact of company's forecasting reputation on the investor's reaction to MEFs. The company forecasting reputation is measured by the accuracy and frequency of prior forecasts. They found that stock price reacts more rapidly to the good-news forecasts for company with good forecasting reputation. Moreover, they suggest that markets react in a different way to positive versus negative forecasts, as negative forecasts are fundamentally informative while negative forecasts are informative only verified (Hutton et al., 2003).

Three important factors seem to affect a company' stock price: first, MEFs, second, the actual reported earnings, and finally, MEFDs (errors). Companies with positive deviation will have a higher market valuation than companies with negative deviation. Manager biases their forecasts upward if MEFDs is negative and downward if MEFDs is positive.

Managers usually issue forecasts that is slightly to beat, as market value firms with positive deviation. MEFDs could have value relevance to investors. So, this study suggests that the MEFDs affects the stock price. This suggestion raises the following hypothesis:

H4: For forecasting companies, there is a negative significant association between management earnings forecasts deviations (MEFDs) and the stock price (SP/SPC).

4. Research Design:

4.1 Sample

The sample in this study includes the most active listed companies in "EGX 100 Index" covering the 2016-2019 financial reports. The number of companies included in the EGX 100 Index is different from year to year based on adding some new companies or eliminating others. To be included in the sample, companies must have the following criteria:

- Have sufficient data.

- Are not banking and insurance companies because of having specific industry characteristics and different regulations imposed by the Central Bank of Egypt.

- Whether or not it discloses MEFs.

- For disclosed companies, the forecasts must be in form of point or range forecasts not qualitative or opened-ended forecasts.

- Management earnings forecast will be disclosed, or it could be driven from the analysts forecast or the profits in the year t-1 for the year t.

The data needed were collected from "Egypt for Information Dissemination – EGID", which is the main provider of data about the Egyptian stock market as third party, the company web site, Egyptian stock market web site and other web-sits such as Mubashir.

Table (1) below provide the number of firm-year observations in each year with a total of 351 firm-year observations.

Table 1: Number of firm-year observations over the period of empirical investigation:

Numbers/Years	2016	2017	2018	2019	**Total**
- Number of companies in EGX 100	100	100	100	100	**400**
- Companies excluded	9	13	13	14	**49**
- Firm-year observations	91	87	87	86	**351**

4.2 The Research Models

This study investigates the association between MEFs, EM and its effects on the stock price. To measure EM, the study uses the Jones (1991) model which was modified by Dechow and Sweeney (1995). The absolute value of discretionary accruals was estimated using this modified model.

EM = Discretionary Accruals (DACC)

To measure the association between the independent variables ISUFOR, ADUFOR, MEFDs and the dependent variable DACC as measurement for earnings management, the following model was formulated:

$DACC_{i,t} = a0_{i,t} + a1\ ISUFOR_{i,t} + a2\ AUDFOR_{i,t} + a3\ MEFD_{i,t} + e_{i,t}$

Whereas:

$DACC_{i,\ t+1}$ is an estimation for discretionary accruals as proxy of EM for the company i in the year $_{t+1}$.

$ISUFOR_{i,t}$ is a dummy variable, 1 if a company issue MEF and 0 if a company does not issue.

$AUDFOR_{i,t}$ is a dummy variable, 1 if a company audits MEF and 0 if a company does not audit.

$MEFD_{i,t}$ is the management earnings forecasts deviations for the company i in the year t.

By adding both corporate governance variables and corporate characteristics performance as control variables to the model, it will be formulated as following:

$DACC_{i,t}$ = $a_{0\ i,t}$ + a_1 $ISUFOR_{i,t}$ + a_2 $AUDFOR_{i,t}$ + a_3 $MEFD_{i,t}$ + a_4 $BOSIZE_{i,t}$ + a_5 $BOSHAR_{i,t}$ + a_6 $BOINDE_{i,t}$ + a_7 $ROLDUA_{i,t}$ + a_8 $AUDCOM_{i,t}$ + a_9 $EXTAUD_{i,t}$ + a_{10} $FSIZE_{i,t}$ + a_{11} $FROA_{i,t}$ + a_{12} $FLEV_{i,t}$ + a_{13} $SMTB_{i,t}$ + a_{14} $FORLIS_{i,t}$ + a_{15} $NISSUE_{i,t}$ + $e_{i,t}$

To measure stock market behavior, stock price model could be used as follows:

$SP_{i,t}$ = $\beta o_{i,t}$ + $\beta 1\ BVPS_{i,t}$ + $\beta 2\ EPS_{i,t}$ + $\beta 3\ MEFD_{i,t+1}$ + $\beta 4\ DACC_{i,t}$ + $e_{i,t}$

Whereas:

$SP_{i,t}$ is the stock price per share for the company i in the year t.

$BVPS_{i,t}$ is the stock book value for the company i in the year t.

$EPS_{i,t}$ is the actual earnings per share for the company i in the year t.

$MEFD_{i,t}$ is the management earnings forecasts deviations for the company i in the year t.

$DACC_{i,t}$ is the discretionary accruals for the company i in the year t.

4.3 Variables

Several variables related to MEFs and EM are selected for the current investigation. In addition to CGM variables, dependent variables, several firm specific variables namely firm performance (FROA), firm size (FSIZE), firm leverage (FLEV), share market-to-book value (SMTB), foreign listing (FORLID) and issuance of new shares (NISSUE) were used in the regression models as control variables. Firm specific variables were used by several studies in this area of research (Abed et al., 2012; Epps & Ismail, 2009; Habbash, 2012; Saleh et al., 2005) to control for potential influences on the level of discretionary accruals. Hutchinson and Leung

(2007) referred that many firm specific variables are likely to affect managers' opportunity and incentive to manipulate earnings, including size, debt levels, volatility, and capital structure. Similarly, it was argued that EM is found to be related to firm specific factors such as size, performance, and leverage (Peasnell et al., 2005). Thus, following previous studies, the current study used the above six variables as control variables.

Table 1 below summarizes dependent variables, independent variables, and control variables in the two models and their related proxies.

Table 2: Definitions of independent and control variables used in the empirical analysis:

Variables	Predicted Sign	Definitions
First Model:		
Dependent Variables:		
DACC (EM)		
Independent variables:		
1- ISUFOR	+	(1) if the company issues forecasts and (0) otherwise.
2- AUDFOR	-	(1) if the company audits forecasts and (0) otherwise.
3- MEFD	+	Difference between forecasted earnings per share and actual announced earnings.
Control Variables:		
1- Board size (BOSIZE)	+ or -	Number of the board of directors.
2- Board shareholding (BOSHAR)	+ or -	% of shares owned by board members.
3- Board independence (BOINDE)	+ or -	% of external members to total board members.
4- Board leadership (ROLDUA)	+	(1) if the chairman is the same as the CEO and (0) otherwise.
5- Audit committee (AUDCOM)	+	(1) if audit committee is effective and (0) otherwise.
6- External auditor (EXTAUD)	+	(1) if the audit firm is one of the big four and (0) otherwise.
7- Firm performance (FROA)	+ or -	Firm net profit to total assets (ROA).
8- Firm size (FSIZE)	+ or -	Firm total assets.
9- Firm leverage (FLEV)	+ or -	Firm total liabilities/total assets.
10 - Share market-to-book value (SMTB)	+ or -	Share market/book value.
11- Foreign listing (FORLIS)	+ or -	(1) If the firm is listed outside the EGX and (0) otherwise.
12- Issue of new shares (NISSUE)	+ or −	(1) If the firm issued new shares in last year and (0) otherwise.
Second Model:		
Dependent Variables:		
SP/SPC (Stock Price or change)		
Independent variables:		
MEFDs	-	Difference between forecasted earnings per share and actual announced earnings.
DACC	-	Earnings management.
Control variables:		
1- BVPS	+	Book value per share
2- EPS	+	Earnings per share

Notes: 1- Information on variables was computed at the end of 2019 financial period (US$1 = EGP 15.99) or the average of four years from 2016 to 2019.; 2- Predicted signs of independent and control variable were based on their expected effects on DACC and SP/SPC.

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4.4 Hypotheses Testing:

To test the hypotheses related to the model one, earnings management (DACC) was regressed on three independent variables named ISUFOR, AUDFOR, MEFDs and twelve control variables. On model two, stock price / change on stock price was regressed on management earnings forecasts deviation (MEFDs) as independent variable and three independent variables named BVBS, AEPS, and DACC. This study tests four hypotheses as mentioned before in the literature.

5. FINDINGS

This section is devoted to presentation and discussion of the data needed for testing research hypotheses. It divided into three sub-sections namely "descriptive statistics", "univariate analysis" and "multivariate analysis".

5.1 Descriptive statistics

Tables 3 and 4 below present descriptive statistics for both nominal (categorized) variables and interval or ratio variables. As is shown in table 3, about 49% of listed companies in the Egyptian stock issue earnings forecasts, while only about 29% of these companies' audit or review these forecasts by external auditor. For the quality of external auditor, about 60% of companies hire one of the big four auditing firm, while the remaining 40% hire auditor not from the big four, which indicates that the quality of external auditing for most listed companies is high. On the other hand, and based on the available data, about 43% only of listed companies have active audit committee, which requires increasing its role as one of the corporate governance mechanisms.

Tables (3): Descriptive statistics for nominal (categorized) variables.

Characteristics	Category	Number	%
Issue Forecasts (ISUFOR)	Issue	42	48.84
	Not Issue	44	51.16
Total		86	100%
Audit Forecasts (ADUFOR)	Audit	12	28.57
	Not Audit	30	71.43
Total		42	100%
Quality of External Auditor (EXTAUD)	Big 4	52	60.47
	Not Big 4	34	39.53
Total		86	100%
Audit Committee (AUDCOM)	Effective	37	43.02
	Not Effective	49	56.98
Total		86	100%
Foreign Listing (FORLIS)	Listed	15	17.44
	Not Listed	٧١	82.56
Total		86	100%
Role Duality (ROLDUL)	Board Leadership is CEO	32	37.21
	Board Leadership is not CEO	54	62.98
		86	100%
Issue New Shares (NISSUE)	Issue	23	26.74
	Not Issue	65	73.26
Total		86	100%

Note: Information about ISUFOR, AUDFOR, EXTAUD, AUDCOM, FORLIS, ROLDUL, and NISSUE are based on 2019 financial reports.

Table 4 below shows the minimum, maximum, mean, and standard deviation of two dependent variables DACC and SP/CSP and eleven independent and control variables. The average of earnings management practice by Egyptian companies is about 12% while the maximum is 79% and the minimum is 36% of their earnings. These results indicated that the Egyptian companies are even involved in earnings management practice

which suggests that more governance is needed. The average of stock price, change in the stock price, forecasted earnings per share, actual earnings per share, and book value per share are $0.331, $0.051, $0.046, $0.043, and $0.158 respectively while the maximum are $6.856, $1.188, $0.724, $1.173, and $1.921 respectively and the minimum are $0.035, -$0.598, -$0.180, -$0.517 and -$1.109, respectively.

The average of management earnings forecasts deviations (MEFDs) is about -$0.034 per share while the maximum is $0.489, and the minimum is -$0.316. These results suggest that the Egyptian companies in general do not meet the forecasted earnings per share, and some companies met and beat these forecasts. Some more information regarding the average, maximum, minimum, and standard deviation of FSIZE, FROA, FLEV, SMTB, BOSIZE, BSHAR, and BOIDE are shown in table 4 below.

Tables (4): Descriptive statistics for interval (ratio) variables.

Variables	No.	*Minimum*	*Maximum*	*Mean*	*Std. Deviation*
DACC (%)	86	-0.36	0.79	0.1236	0.1664
SP ($)	42	0.035	6.856	0.331	0.763
SPC *($)*	42	-0.598	1.188	0.051	0.271
FEPS ($)	42	-0.180	0.724	0.046	0.101
AEPS ($)	42	-0.517	1.173	0.043	0.116
MEFD ($)	42	-0.316	0.489	-0.034	0.084
BVPS ($)	42	-1.109	1.921	0.158	0.348
FSIZE ($)	86	9,645,998	$3,460,100,000	299,438,659	85,146,557
FROA (%)	86	0.09	48.37	6.871	8.112
FLEV (%)	86	3.19	100.89	43.561	19.638
SMTB (%)	86	0.21	5.12	1.694	1.007
BOSIZE (N)	86	3.00	19.00	8.833	3.014
BOSHAR (%)	86	0.00	89.10	24.957	24.734
BOINDE (%)	86	0.00	89.70	48.3691	22.322

Note: Information for BOSIZE, BOSHAR, and BOINDE are based on the 2019 annual report.

5.2 Univariate analysis

This section of results presents the relationship between DACC and SP/SPC as dependent variables and several independent and control variables. Table 5 below shows Pearson correlation coefficients which reveals some significant correlations between all dependent variables, independent, and control variables. For instance, there is a positive significant correlation at P<0.01 between earnings management (DACC) as dependent variable and issue earnings forecasts (ISUFOR) as independent variable while there is a negative significant correlation at P<0.05 between DACC and audit the earnings forecasts (ADUFOR). Also, there is a positive significant correlation at P<0.05 between DACC and management earnings forecasts deviations (MEFDs).

Table (5): Person Correlation Matrix

	DACC	SP	SPC	ISUFOR	AUDFOR	FEPS	AEPS	MEFD	BVBS	BOSIZE	BOSHAR	BOINDE	FSIZE	FROA	FLEV	SMTB
DACC	1															
SP	0.176	1														
SPC	0.031	0.643**	1													
ISUFOR	0.658***	0.529**	0.447**	1												
AUDFOR	-0.557**	0.524**	0.434**	0.584**	1											
FEPS	0.319*	0.578**	0.527**	0.203**	0.137	1										
AEPS	0.157	0.527**	0.513**	0.115	-0.084	0.574**	1									
MEFD	0.247*	-.389**	-0.365**	0.264*	-0.277**	0.149	0.330*	1								
BVPS	0.052	0.646***	0.487**	0.094	0.269*	0.317**	0.249*	0.118	1							
BOSIZE	-0.323*	0.046	0.118	0.454**	0.481**	0.071	0.089	0.064	0.127	1						
BOSHAR	0.084	0.076	0.114	0.083	0.102	-0.047	0.061	0.074	-0.368**	-0.238*	1					
BOINDE	-0.265*	-0.167	-0.217	-0.192	0.246*	-0.279*	-0.149	-0.074	0.296*	0.324**	-0.116	1				
FSIZE	-0.316*	0.196	0.227	0.570**	0.417**	0.386**	0.165	0.149	0.114	0.158	0.184	0.123	1			
FROA	-0.067	0.322*	0.356**	-0.068	-0.063	0.047	0.041	0.039	0.238*	0.126	-0.124	0.183	-0.104	1		
FLEV	0.335*	-0.337*	0-.283*	-0.115	-0.074	0.046	0.063	0.102	-0.257*	-0.254*	0.169	0.088	0.161	-0.167	1	
SMTB	0.184	0.468**	0.309*	0.126	0.027	0.106	0.127	0.132	0.195	0.065	0-.141	0.029	-0.077	0.485**	0.247*	1

***. Correlation is significant at the 0.01 level (2-tailed).

**. Correlation is significant at the 0.05 level (2-tailed).

*. Correlation is significant at the 0.10 level (2-tailed).

These results suggest that companies which issue earnings forecasts are more motivated to practice EM, and the level of EM is less when the companies audit these earnings forecasts by external auditor. Moreover, they reveal that the higher level of MEFDs leads to the higher level of DACC.

On behalf of corporate governance mechanism variables, BOSIZE and BOINDE they have negative significant correlation at P<0.05 while BOSHAR has very weak correlation. The interpretation of these results can be anticipated to the bigger size and more independent board of director which provide more and better control over the management behaviour to limit the EM level. Moreover, two of company characteristics factors provide significant correlation with DACC. The FSIZE has negative correlation at P<0.10 and the FLEV has positive correlation at the same confidence level, while the other two factors FROA and SMTB provide very weak correlation. A company with big size could have more stability in accounting practice which limit opportunities to involve in practicing earnings management while the higher leverage could lead to more practice to improve financial results.

The stock price (SP)/stock price change (SPC) have positive significant correlation at P<0.05 with several factors such as ISUFOR, AUDFOR, FEPS, AEPS, and BVPS. These results indicate that investors recognize the value of issue earnings forecasts and appreciate the auditing of such forecasts and consider the announced earnings per share.

Some more considerable correlations can be revealed from the correlation matrix such as the positive and significant correlation at P<0.05 between the FSIZE and both FEPS AUDFOR. Also, the BOSIZE has positive and significant correlation at P<0.05 with FEPS and AUDFOR. These results suggest that the big size companies could issue earnings forecasts and audit them as they have abilities to do so. Likewise, big size of board of director enables companies to issue forecasts and audit them.

5.3 Multivariate Analysis (Regression Analysis and Hypotheses Testing)

Tables 6 and 7 below present the results of the two regression models used to identify which of the independent and control variables included in the regression models contribute to the prediction of the dependent variables.

Table 6 below presents the regression of the first model that employed to test the first three hypotheses. This model includes earnings management (DACC) as dependent variable and three independent variables named ISUFOR, AUDFOR, and MEFDs. Also, it includes twelve control variables related to the corporate governance and firm characteristics.

The results show the explanatory power of the model as measured by adjusted R^2. The value of adjusted R^2 in the model is 26.7% which ranked this model as powerful one comparing to the similar studies. For instance, Cormier and Martinez (2006) reported 13.6% adjusted R^2 in their model. Further the more, the model in general is significant at $p<0.01$ as F. Sig. valued 0.006 which indicates that the earnings management is explained by issuing earnings forecasts (ISUFOR), auditing forecasts (AUDFOR), the difference between the forecasted earnings and announced earnings (MEFDs), and some other control variables.

The explanatory power of each one of the independent and control variables is shown in table 6 in details. According to the multiple regression analysis shown in table 6 below, issue forecasts (ISUFOR) is positively and significantly associated with earnings management (DACC) at $p<0.01$ as the value of Seg. T is 0.005. This result indicates that managers manipulate earnings to reduce any expected earnings surprise, as in many cases they overstated or understated their forecasts to reach specific objectives, which means forecasted companies tend to manipulate earnings than the unforested companies.

Table (6): Results of multiple regression analysis for factors associated with DACC (EM).

Predictors	B	Beta	T	Sig. T	Effect
ISUFOR	0. 241	0.067	4.128	0.005	***
AUDFOR	-0.268	-0.084	-3.894	0.006	***
MEFD	0.248	0.371	3.264	0.012	**
BOSIZE	-0.206	0.313	1.975	0.037	**
BOSHAR	-4.098	-3.006	-1.939	.079	NS
BOINDE	-0.120	-0.206	-1.525	.033	**
ROLDUL	0.049	0.132	0.848	0.403	NS
AUDCOM	-0.104	-0.292	-2.496	0.0 45	**
EXTADU	-0.068	-0.187	-1.963	0.043	**
FSIZE	-3.975	-0.237	-0.856	0.073	*
FROA	1.527	1.353	0.029	0.973	NS
FLEV	-0.046	-0.158	-0.815	0.472	NS
SMTB	0.263	0.328	1.914	0.096	*
FORLIS	0.222	0.353	1.485	0.148	NS
NISSUE	0.023	0.060	0.400	0.692	NS
Constant	0.044				
R^2	0.596				
Adj. R^2	0.267				
F	5.358				
F Sig.	0.06***				

***p<0.01, **p<0.05, *p<0.10.

So, this result ensures that the company's goal to meet or beat the MEF will lead to practicing EM, and the company's issue MEFs are more motivated to manage earnings than the companies they do not. Hence, we reject the null hypothesis that "There is a negative significant association between issuing of management earnings forecasts (ISUFOR) and earnings management (EM)" and accept the alternative hypothesis, as:

"There is a positive significant association between issuing of management earnings forecasts (ISUFOR) and earnings management (EM)".

This result is consistent with the mainstream of literature on this regard, as many studies reported similar association between issue forecasts and practicing of EM (Beatty et al., 2002; Beyer, 2009; Cormier & Martinez, 2006; Ebaid, 2012; Matsumoto, 2002; Rogers & Stocken, 2005). So, this study confirmed the evidence provided by several prior studies in this area of research. For instance, Beyer, (2009) reported that companies that issue earnings forecasts are more motivated to be engaged in practicing EM to decrease the expected forecasts error. Moreover, Gong, et al. (2009) provided similar results as management of forecasting companies has many motivations to practice accrual activities such as decrease the expected legal costs. Lin, F., et al. (2020) showed that a CEO who is narcissist and expect high performance is more likely to practice EM to compensate his/her performance expectation.

Regarding the association between earnings management (DACC) as and auditing management earnings forecasts (AUDFOR), the multiple regression analysis in table 6 above presents negative and significant association at $p<0.01$ as the value of Seg. T is 0.006. This result indicates that the level of earnings management is higher at companies which do not audit these forecasts, as auditing such forecasts will add more creditability and more accuracy. This result ensures that auditing management earnings forecasts will reduce the level of earnings management, and the more auditing is the less earnings management practicing. Hence, Hence, we reject the null hypothesis that "For forecasting companies, there is a positive significant association between auditing of management earnings forecasts (AUDFOR) and earnings management (EM)" and accept the alternative hypothesis, as:

"There is a negative significant association between auditing of management earnings forecasts (AUDFOR) and earnings management (EM)".

This result is consistent with several studies in the literature on this regard. Karamanou and Vafeas (2005) reported that auditing the earnings forecasts as voluntary will improve the financial disclosure quality. Feng and Li (2014) find that management earnings forecasts are negatively associated with auditor's going concern opinion. Lau, D. (2020) presents evidence that auding management earnings forecasts by one of the big four audit firm as proxy of audit quality will decrease the forecasts bias, then decrease the level of EM. These findings confirm our result as auditing of management earnings forecasts directed management to issue reasonable earnings forecasts, which be reflected in reducing EM.

The association between earnings management (DACC) and management earnings forecasts deviation (MEFD) is illustrated in table 6 above. The result shows positive and significant association at p<0.05, as the value of Seg. T is 0.012. The results suggests that managers are more motivated to manipulate earnings upward when the forecasted earnings exceed the announced earnings. In some cases, when announced earnings exceed the forecasted earnings, mangers manipulate earnings downward to meet or slightly beat forecasted earnings. Hence, we reject the null hypothesis that "For forecasting companies, there is a negative significant association between management earnings forecasts deviations (MEFDs) and earnings management (EM)" and accept the alternative hypothesis, as:

"For forecasting companies, there is a positive significant association between management earnings forecasts deviations (MEFDs) and earnings management (EM)".

This result is consistent with literature who reported positive and significant association between MEFDs (forecast errors) and earnings management. (Beyer, 2009; Cormier & Martinez, 2006; Dutta & Gigler, 2002; Gong et al., 2009). Moreover, Gong et al. (2009) reported more association with total accrual. Our results are not consistent with Boubakri, F., (2020) who found insignificant association between management forecast errors and accruals. Our interpretation for this contradictory result,

as this study conducted at Tunisian context on small sample including and data starting from 2009, as management earnings forecasts was not stable.

Also, table 6 above presents significant association between earnings management and some control variables. For instance, four of corporate governance factors named BOSIZE, BOINDE, AUDCOM, and EXTAUD are negatively and significantly associated with earning management (DACC) at $p<0.05$. These results illustrate the role of corporate governance in limiting earnings management practice. Regarding the company characteristics factors, firm size (FSIZE) has negative significant association with DACC at $p<0.10$ and share market to book value (SMTB) has positive significant association at $p<0.10$, while the other factors do not provide any significant association.

Table 7 below presents the regression of the second model that employed to test the fourth hypothesis. This model includes stock price or change in stock price (SP/SPC) as dependent variable and management earnings forecasts deviation as an independent variable. Also, it includes three control variables related to the stock price named (BVPS, EPS, and DACC).

Table (7): Results of multiple regression analysis for factors associated with SP/SPC.

Predictors	B	Beta	T	Sig. T	Effect
MEFD	-4.281	-3.265	-0.624	0.014	**
BVPS	5.228	3.759	0.429	0.000	***
AEPS	6.783	5.856	1.248	0.000	***
DACC	-0.942	-0.895	-3.214	0.081	*
Constant			7.965		
R2			0.746		
Adj. R^2			0.693		
F			26.486		
F Sig.			0.000***		

***p<0.01, **p<0.05, *p<0.10.

The results show the explanatory power of the model as measured by adjusted R^2. The value of adjusted R^2 in the model is about 69% which ranked this model as very powerful one. Additionally, the model in general is significant at $p<0.01$ as F. Sig. valued 0.000 which indicates that the stock price or change in the stock price is explained by management earnings forecasts deviation as independent variable (MEFDs), and some other control variables named BVPS, EPS, and DACC.

Moreover, Table 7 above presents negative and significant association between the stock price or change in the stock price (SP/SPC) as dependent variable and management earnings forecasts deviation (MEFDs) as independent variable at $p<0.05$, as Sig. T valued 0.014. this result confirms that investors consider any deviation between the forecasted earnings and announced earnings and such deviation affects the stock price. Also, it reveals that market does not reward companies that do not meet or beat forecasted earnings. Hence, we reject the null hypothesis that "For forecasting companies, there is a positive significant association between management earnings forecasts deviations (MEFDs) and the stock price (SP/SPC)" and accept the alternative hypothesis, as:

"For forecasting companies, there is a negative significant association between management earnings forecasts deviations (MEFDs) and the stock price (SP/SPC)".

This result is consistent with Beyer (2009) assumption as firm's stock price is sensitive to errors in management earnings forecasts. Other studies reported similar results, by mentioning that stock price will be more stable when management earnings forecasts met or beaten (Kross et al., 2011; Merkley et al., 2013; Rezazadeh, 2020; Vahedi, 2020). Moreover, Suto, M. and Takehara, H. (2020) found that management earnings forecasts accuracy enhances the investor trust, and stock market stability which indirectly reflected in the reliability of stock prices. Another study reported that management manipulates earnings forecasts to affect the share price

by providing optimistic forecasts in case of its desire to increase stock price and providing pessimistic forecasts if the desire to reduce share price. This result suggests that the earnings forecasts deviation is the most factor that affects the stock prices (Xu, W., & Qi, D., 2020).

Table 7 above presents other positive and significant association between stock price (SP/SPC) as dependent variable and both book value per share (BVPS) and reported earnings per share (AEPS) as control variable at $p<0.01$. Also, stock price shows negative and significant association with earnings management as independent variable is this model.

6. CONCLUSIONS

This study empirically investigates the association between management earnings forecasts Deviations (MEFDs) and both earnings management (DACC or EM) and the stock prices (SP/SPC) of listed companies on the Egyptian Exchange (EGX 100) as one of the emerging markets. To achieve the study's objectives, 351 firm-year observations were used during the period from 2016-2019. Four hypotheses were tested; first, companies disclosed their forecasts are more motivated to manage earnings than companies they do not disclose. Second, the level of EM depends on whether companies audit MEFs or not. Third, the level of EM depends on management earnings forecasts deviations (MEFDs) which is the difference between MEFs and the expected actual earnings. Fourth, companies with low level of MEFDs are more likely to have higher stock price than companies with high level of MEFDs.

Two models are employed for hypotheses testing, in the first model, EM as dependent variable was regressed with three independent variables named, issue management earnings forecasts (ISUFOR), audit management earnings forecasts (AUDFOR), and MEFDs. In the second model stock price (SP/SPC) as, dependent variable was regressed with MEFDs as independent variable. Some appropriate control variables were added to both models.

The findings of this research showed that about 49% of listed companies in the Egyptian stock market issue MEFs, while only about 29% of them audit such forecasts. Egyptian listed companies are still involving in EM practice at average of 12% of earnings upward and minimum of -36% (downward) and maximum of 79% (upward). The findings support all hypotheses, as both models are significant. EM is positively and significantly associated with ISUFOR and MEFDs, while it is negatively and significantly associated with AUDFOR. (SP/SPC) is negatively and significantly associated with MEFDs.

There are several limitations of the current study. First, the study sample was relatively small, and it is recommended for this study to be re-conducted with a larger sample that could include all listed companies. Second, additional analysis in needed to differentiate between negative management earnings forecasts deviation (MEFDs $^{neg.}$) and positive management earnings forecasts deviation (MEFDs $^{pos.}$). finally, the study could be conducted in other emerging markets to be generalized in all emerging markets.

The findings of this study have wide implications for future research on the usefulness of forecasted accounting information in manipulating earnings and stocks valuation. This study reveals that accounting information may also be useful for stock market regulators and investors.

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العلاقة بين الانحراف في توقعات الإدارة بالربحية وإدارة الربحية وأسعار الأسهم: أدلة من الأسواق الناشئة

صلاح عبد الحفيظ مصطفى علي

جامعة أسيوط، مصر

جامعة البحرين، مملكة البحرين

ملخص البحث:

تبحث هذه الدراسة تطبيقيا العلاقة بين الانحراف في توقعات الإدارة بالربحية (MEFDs) وإدارة الربحية (DACC أو EM) وأسعار الأسهم أو التغيرات في هذه الأسعار (SP/SPC) للشركات المدرجة في البورصة المصرية (EGX 100) كأحد الأسواق الناشئة. ولتحقيق أهداف الدراسة، تم استخدام 351 مفردة بحثية خلال الفترة من ٢٠١٦-٢٠١٩. وقد تم اختبار أربعة فروض رئيسية واستخدم نموذجين لاختبار هذه الفروض. في النموذج الأول، تم ربط إدارة الربحية (EM) كمتغير تابع مع ثلاث متغيرات مستقلة تشمل: مدى قيام إدارة الشركة بإصدار توقعات بالربحية (ISUFOR)، مدى قيام الشركة بمراجعة هذه التوقعات (AUDFOR)، والانحراف في توقعات الإدارة بالربحية (MEFDs).

وفي النموذج الثاني، تم ربط سعر السهم (أو التغير في سعر السهم) كمتغير تابع مع الانحراف في توقعات الإدارة بالربحية (MEFDs) كمتغير مستقل. وقد تمت إضافة بعض المتغيرات الضابطة المناسبة لكلا النموذجين. وأظهرت نتائج هذا البحث أن حوالي ٤٩٪ من الشركات المصرية المدرجة في البورصة تصدر توقعات بالربحية (MEFs)، في حين أن حوالي ٢٩٪ فقط من الشركات التي تصدر التوقعات تقوم بمراجعة مثل هذه التوقعات. لا تزال الشركات المصرية المدرجة تمارس إدارة الربحية عن طريق تضخيم أرباحها بمتوسط ١٢٪ وبحد أدنى ٣٦٪ (بالنقص) وحد أقصى ٧٩٪ (بالزيادة). تدعم النتائج جميع الفروض البحثية، حيث إن كلا النموذجين معنويين. كما تبين وجود علاقة إيجابية ومعنوية بين إدارة الربحية (EM) وكل من، قيام إدارة الشركة بإصدار توقعات بالربحية (ISUFOR)، والانحراف في توقعات الإدارة بالربحية (MEFDs)، في حين ترتبط إدارة الربحية (EM) بشكل سلبي ومعنوي بمدى قيام الشركة بمراجعة هذه التوقعات (AUDFOR). علاوة على ما سبق يرتبط سعر السهم أو التغير في سعر السهم (SP/SPC) بشكل سلبي ومعنوي بالانحراف في توقعات الإدارة بالربحية (MEFDs). وتفتح نتائج هذه الدراسة آفاقا واسعة لأبحاث مستقبلية حول علاقة التنبؤات بالمعلومات المحاسبية في إدارة الربحية وتقييم الأسهم. تكشف هذه الدراسة أن المعلومات المحاسبية قد تكون مفيدة أيضًا لمنظمي سوق الأسهم والمستثمرين والأطراف الأخرى ذوي العلاقة بالقضايا المثارة في هذا البحث.

الكلمات المفتاحية: إدارة الربحية، توقعات الإدارة بالربحية، سعر السهم، الاسواق الناشئة، جمهورية مصر العربية.