

# Ownership structure and Earnings Management: evidence from Egypt

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## Keywords

Agency theory, Discretionary Accruals, Earnings Management, Managerial ownership.

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## Abstract

*The purpose of this paper is to investigate the relationships between ownership structure and Earnings Management (EM) of Egyptian companies. Discretionary accruals using the modified Jones model is evaluated to calculate the extent of EM. A sample of 50 companies listed on the Egyptian stock market for twelve years is used in the study. Three ownership indicators for concentration are included in the current research: block holder ownership, managerial ownership, and public ownership. A set of control variables are used in the current study: return on assets, firm size, firm age, debt ratio and market to book value. The statistical results indicated that there is a positive relationship between the Block holder ownership and the degree of earning management. However, no relationship was found between the Managerial Ownership and the Public Ownership on level of Earning Management.*

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## 1. Introduction

In academic literature, the corporate governance mechanism has gained remarkable attention. This is attributed to two main reasons. As a main reason the move toward globalization, the introduction of new technologies, the social and cultural environment encourages good corporate governance and promote financial information transparency. Second, the corporate financial scandals in many companies have led to losing confidence in the financial information provided (Zgarni, 2016).

The reliability and accuracy of the financial information provided is required in the business environment in order to be able to make decisions and perform analysis. Earnings are considered the main source of information and would alter any decision (Elham; Salehi; and Vali Pour, 2016). This raised the need to set rules to guide and control the performance by enhancing the quality of the financial reporting and to ensure the transparency of the financial information (Zgarni, 2016). Despite this, accrual basis of accounting encourages managers to engage in earnings management. This is easily detected from the discontinuity in the distribution of earnings. Previous studies have elaborated the ways and methods managers undertake to manage their earnings (El-Sayed, 2012).

Several definitions exist for EM. One the definitions is "purposeful intervention in the external financial reporting process with the intent of obtaining private gain" Schipper (1989, p. 92). Another definition is that "EM occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports 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, p. 368). (Saleem, 2016 b). However, EM could also be defined as the process of taking purposeful steps within the limits of Generally Accepted Accounting Principles to bring about a desired level of reported income (Tanewski and Bartholomeusz, 2006; Parveen, Malik, Mahmood, and Ali, 2016).

In order to avoid Earnings Management, corporations must have enough control mechanisms to provide information in the best, reliable way. This could be done by reducing the agency costs- that arises from the conflict of interests between the owner and managers- to its minimum through a good corporate governance system (Kouaib and Jarboui, 2014; Elham et al., 2016). Most of the recent rules and regulations focus on how to improve the quality of corporate governance (Zgarni, 2016).

In the 1990s, the Egyptian economy was liberalized and became a free market economy. The stock market was reopened in 1992 and a privatization program was started. Most transactions in the Egyptian capital market are made based on accounting data from the companies' financial statements especially, earnings. So, earnings play a great role in determining the market price (Hassan et al., 2009; Ragab and Omran, 2006) In October 2005, Egypt reformed a set of Guidelines and Standards to regulate Corporate Governance. But as the application was not mandatory, this gave the chance to managers to engage in EM in order to meet or exceed earnings target to maintain a good image and hence increase the market value of stocks (El-Sayed, 2012)

## 2.Literature review and hypotheses development

Most of the corporate governance studies were explained by theories such as the resources dependence theory, stakeholder's theory and agency theory. For the aim of this research, agency theory is used to explain the influence of the degree of ownership concentration on EM (Zgarni, 2016). The Agency theory refers to the relationships established between the owners of a company and its directors, relationships are explained through the concept that managers are working on behalf of owners and for their benefits. Although the development of agency theory is found only in the 70s, the idea of separating the control government has been highlighted since the 30s by Berle and Means (1932) (Shleifer and Vishny, 1997). The separation between the ownership and management is the main source of conflict, which by turn leads to the costs related to these conflicts. This issue was first highlighted by Berle & Means (1932), Adam Smith (1776) and followed by Ross (1973) (Jensen and Meckling, 1976). Agency theory leads to the need for complying the interests of managers with those of shareholders for the objective of maximizing the company's value. Furthermore, from the literature, it was found that agency theory would be explained by two things. The first explanation is that it is very simple and divide the company into two parties; managers and shareholders. Moreover, the theory assumes that managers and employees favor their own benefits over that of the owners (Daily, Dalton, and Canella, 2003). Although the agency theory states that the managers and employees are self-interest oriented, it is used deeply in the literature to promote the separation between the ownership and the management and control (Bhimani, 2008). Consequently, this gives a motive to managers to manage their earnings in order to achieve targets, which by turn will have an effect on their bonuses. This is the reason behind the weakness of their financial reporting and statements (Davidson et al., 2005; Habbash, 2010).

EM is a main issue of current accounting research. EM takes place when managers misuse financial reporting in their business environment. It also happens when managers tend to change certain income and expense data to misguide users about the current financial performance of the company (Parveen et al., 2016). Ownership structure is considered a tool of corporate governance that can be used to reduce agency costs that arise from agency problems (Jensen and Meckling, 1976). Two points of views explain this issue. The first one assumes that when managers of the firm own a significant portion of the company's shares, this will lead to balancing their benefits with that of the owners. This will by turn

reduce the costs related to agency problems. The second one assumes that if outside shareholders own a significant portion of the company's stocks, this will provide good control over managers and will force them to act in favor of owners' interest (Al-Fayoumi, Abuzayed, and Alexander, 2010)

This section discusses three types of ownership, Managerial Ownership, Institutional Ownership and block-holders. A discussion of the relevant prior studies on the effectiveness of these ownership structures on mitigating EM is presented

### 2.1 Managerial ownership

According to the Agency theory managers do perform business in a way that would increase their benefits no matter how this is reflected on stockholders especially if they do not own a remarkable portion of the companies' shares (Saleem, 2016). Some studies were performed to measure the extent of EM when managers own a good portion of the firm shares, which they manage. According to some of the studies performed, some researchers argued that the higher the managerial ownership percentage, the higher will be the power of managers, leading to a tendency to manage their own wealth rather than the stockholders (Jung and Kwon, 2002; Gul, Fung, and Jaggi, 2003; Peasnell, Pope, and Young, 2005). According to these researchers, when management is separated from ownership, managers do not feel the pressure from financial markets to alter the firms' earnings and pay less attention to the short-term financial reports (Jensen, 1986; Klassen, 1997) thus, the higher the managerial ownership percentage, the higher the tendency to manipulate earnings, since this would lead managers to make decisions that reflect personal benefits and not firm welfare (Sanchez- Ballesta and Garsa-Meca, 2007). In this context some researchers state that as the managerial ownership increases, the market becomes less effective as managers tend to take own value maximizing decisions. This is because of the higher their ownership percentage the higher will be their voting rights and hence ensure their place as managers high. So according to this statement, as managerial ownership increases, EM may increase (Parveen *et al.*, 2016).

On the other hand, managerial ownership was perceived as a method to limit the extent of EM (Jung and Kwon, 2002; Klein, 2002; Sanchez-Ballesta and Garcia-Meca, 2007; Teshima and Shuto, 2008; Jensen and Meckling, 1976). This incentive was explained by the idea that managerial ownership can be viewed as a tool to direct the behavior of managers toward the welfare of shareholders and, therefore, cause the discretionary accruals as a measure of EM to be negatively related insider ownership (Siregar and Utama, 2008). Some researchers argued that managerial ownership can be used to minimizing the agency problems (Parveen *et al.*, 2016). Other researches did not find any significant relationship between the two variables under the study (Habbash, 2010; Gabrielsen, Gramlich, and Plenborg, 2002). Thus, the concept that managerial ownership could be used as a tool to control managerial opportunism interest leads to the proposal that a negative relationship exists between the percentage of managerial ownership and discretionary accruals. This study addressed this through testing the following hypothesis:

H1. Insider managerial ownership is negatively associated with earnings management.

### 2.2I Institutional ownership

Institutional ownership defined as "share held by financial institutions whether banks or other financial firms and non-financial corporation (Latif and Abdullah, 2015). According to the Agency theory institutional investor play a great role in monitoring managers and reduce their engagement in EM and can be used as good mechanism of governance according to their level of participation which would lead to reducing agency cost (Chung, Firth, and Kim, 2002; Shleifer and Vishny, 1997; Hsu and Koh, 2005; Siregar and Utama, 2008).

Institutional ownership may force managers to meet short term high earnings which would make a pressure on them and by turn will lead to engagement in EM (Agnes Cheng and Reitenga, 2009; Charitou,

Lambertides, and Trigeorgis, 2007). This is called the passive hand hypothesis. (Al-Fayoumi et al., 2010) A study was performed on the Tunisian banks over the period 1998-2007. The results indicated a negative relationship between institutional directors and discretionary provisions (Boulila, and Mbarki, 2014). On the other hand, a study was performed on 120 nonfinancial firms listed on the Karachi Stock Exchange from 2003 to 2012 along with another Study investigated Iranian firms discovered the positive association between income EM and institutional shareholders (Roodposhti and Chashmi, 2011; Latif and Abdullah, 2015).

Another argument about institutional investors is that they will have a positive influence on the managers and reduce their EM practice. According to active monitoring hypothesis institutional investors who have large portion of shares and have a high level of understanding would form a pressure on managers not to engage in EM (Velury and Jenkins, 2006; Siregar and Utama 2008; Mitra, 2002). So according to this, the higher the institutional ownership the lower will be the exercise of EM (Dechow, Hutton, Kim, and Sloan, 2012; Chung et al., 2002; Al Fayoumi et al., 2010).

An empirical study found that if the of institutional ownership percentage is low; investors will care more about shorter earnings putting a pressure over managers to engage in earnings management. But if the percentage is high, they will care more about the long-term value of the firm which cause a better monitor for the companies (Boulila, and Mbarki, 2014) However, other studies did not find a significant relationship between institutional ownership and EM (Peasnell et al., 2005; Gonzalez and Garcia-Meca, 2014). This study addressed this issue through testing the following hypothesis:

H2. Institutional ownership is negatively associated with earnings management.

### 2.3 External block holders

Small shareholders are not involved in the company's activity and do not have control over managers (Zhong, Gribbin, and Zheng, 2007). But those who have a large ownership percentage play an active role in the control and monitor of firm's activities (Gabrielsen et al., 2002; Shleifer and Vishny, 1997; Yeo et al., 2002). According to this, prior studies found a positive relation between the high percentage of ownership and the degree of control exercised over managers resulting in reducing EM activities (Klein, 2002; Yeo et al, 2002). On the other hand, larger shareholders would benefit from their power and cause agency problems by putting pressure over managers forcing them to engage in earnings (Jensen and Meckling, 1976; Shleifer and Vishny, 1997; Habbash, 2010; Zhong et al., 2007). However, some authors did not find any significant relationship between external blockholder ownership and EM (Peasnell et al., 2005) The effect of external block-shareholders on EM is similar to that of institutional ownership (Yeo et al., 2002). Two opinions exist. First, the higher the percentage of outside block- holders the higher the pressure imposed on the firm's management the higher the tendency of managers to engage in earnings management. (Velury and Jenkin, 2006; Zhong et al., 2007). Second vision states that the higher outside block-holders, the higher their ability to monitor managers' actions which by turn might reduce EM (Al Fayoumi et al., 2010).

This research favors the efficient monitoring hypothesis and assumes a negative relationship between external block holder ownership and earnings management, thus the following hypothesis was proposed:

H3. External block holder ownership (5 per cent or more) is negatively associated with earnings management.

Therefore, this research attempts to answer the following question: "Does the ownership structure influence EM(EM) practice in emerging countries such as Egypt?"

### 3. Research Methodology

#### 3.1 Data and sample selection

The study uses ownership and financial data of the companies listed on the Egyptian stock market for twelve years (2004: 2015). The current research used discretionary accruals as a measurement of EM (dependent variable). The study depends mainly on primary data of 50 firms. The samples were identified according to the firm rank in the market, the top 50 firms were chosen for the current study. The data comes from the annual reports of these companies ranging from 2004 to 2015.

#### 3.2 Model and variables definition

As mentioned above, the main objective is to present empirical evidence of the relationship between ownership structure and EM. The present study used the cross-sectional version of the modified Jones model. Under this model, the level of discretionary accruals for a particular company was calculated as the difference between the company's total accruals and its non-discretionary accruals (NDAC), as estimated with equation (1): Non-discretionary accruals (NDA) calculated as follows (Cohen and Zarowin, 2008; Shah, Zafar, and Durrani, 2009):

$$NDA_{it} = \alpha_1 \left( \frac{1}{A_{it-1}} \right) + \alpha_2 \left( \frac{\Delta REV_{it} - \Delta REC_{it}}{A_{it-1}} \right) + \alpha_3 \left( \frac{PPE_{it}}{A_{it-1}} \right) \quad (1)$$

In this model, the parameters are estimated using cross-sectional discretionary accruals (Klein, 2002; Xie *et al.*, 2003; Abdul Rahman and Ali, 2006) for each firm using at least 10 firm-year observations by applying the following model (equation 2) in the estimation period:

$$TAC_{it} / A_{it-1} = \gamma_0 (1 / A_{it-1}) + \gamma_1 ((\Delta REC_{it} - \Delta REC_{it}) / A_{it-1}) + \gamma_2 (PPE_{it} / A_{it-1}) + \varepsilon_{it} \quad (2)$$

Where:  $\Delta REV_{it}$  is measured by deducting net sales in year t-1 from net sales in year t,  $\Delta REC_{it}$  is measured by deducting net receivable in year t-1 from net receivables in year t,  $PPE_{it}$  is measured by the total balance of the properties, plants and equipment's at the end of year t,  $A_{it-1}$  is represented by the value of total assets at the end of year t-1  $\alpha_1, \alpha_2, \alpha_3$  estimated parameters.  $\varepsilon$  represents the residuals.

The current study used discretionary accruals (DA) as a measure for EM as follows (Shah *et al.*, 2009; Amar, 2014; Tspouridou and Spathis, 2014):

$$DA_{it} = TA_{it} / A_{it-1} - NDA_{it} \quad (3)$$

Where:  $DA_{it}$  the discretionary component of accruals in year t,  $TA_{it}$  total accrual in year t,  $NDA_{it}$  Is non-discretionary accruals in year t.

Three ownership structure variables are used in the study as a measure for ownership concentration. First, Block holder ownership was measured by the percentage of shares held by large external shareholders (greater than 5%). Secondly, managerial ownership was measured by the percentage of shares held by board members. Finally, public ownership was measured by the percentage of shares held by institutional investors (Wei, Xie, and Zhang, 2005; Taufil-Mohd, Md-Rus, and Musallam, 2013; Zhang and Kyaw, 2017).

A set of control variables that preceding researchers have used in studying the relation between EM and ownership variables are used in the current study the used control variables are return on assets, firm size, firm age, debt ratio and market to book value. The previous research found that firms with lower profitability have higher EM activity (Chen, Elder, and Hsieh, 2007). While other research found that firms with higher profitability have less EM activity (Bedard Chtourou, and Courteau, 2004; Klein,

2002). In the current study, profitability is calculated using Return on assets. Firm size is an important control variable as proposed by previous researches. But its effect on the relationship between managerial ownership and EM was not sufficiently studied (Parveen et al., 2016). In many studies, it was argued that the larger the firm is the higher its tendency toward managing earnings (Chen *et al.*, 2007; Dimitropoulos and Asteriou, 2010). While some studies found that a negative effect of firm size on discretionary accruals (Gerayli, Yanasari, and Ma'atoofi, 2011; Peasnell et al., 2000), other studies found that a positive relationship between the two variables (Alves, 2013; Chen et al., 2007) in this study firm size will be used as a control factor and will be determined as the natural logarithm of total assets at the end of period. LEV is measured by the ratio of total debt divided by total assets; LEV represents financial leverage (Zgarni, 2016). Previous studies found that managers of high-leverage firm engage more in EM (Bedard *et al.*, 2004; Peasnell *et al.*, 2005; Alves, 2013; Gerayli et al., 2011). Others found a negative relationship between variables under study (Park and Shin, 2004; Peasnell et al., 2000). Concerning the firm age Gul *et al.* (2009) found a negative correlation, while Wang (2014) found a positive relationship, in the current study firm age is determined as number of years since inception to the date of observation. Previous studies showed that companies with more growth opportunities have a higher intention to engage in EM. (Chung and Kallapur, 2003; Gerayli et al., 2011; Jelinek, 2007) in this research firm growth is calculated using market-to-book ratio.

The following regression equation is used to examine the proposed hypotheses between ownership structure and earnings management:

$$DAC = \alpha + \beta_1 MANO + \beta_2 PUBO + \beta_3 BLHO + \beta_4 ROA + \beta_5 FSize + \beta_6 FAge + \beta_7 LEV + \beta_8 MV_{BV} + \varepsilon_i$$

The variables are as defined below:

Variables	Definition
Dependent variables	
Discretionary accruals DAC	Absolute value of discretionary accruals deliberated through the modified Jones model
Independent variables	
Managerial ownership ( <b>MANO</b> )	Percentage of shares held by board members
Public ownership ( <b>PUBO</b> )	Percentage of shares held by institutional investors
Block holder ( <b>BLHO</b> )	Percentage of shares held by large external shareholders (greater than 5%).
Control variables	
Firm size (FSize)	Natural logarithm of total assets
Firm age (FAge)	Number of years since inception to the date of observation
Return on assets (ROA)	Net income divided by total assets
Debt ratio (LEV)	Ratio of debt to assets
The market-to-book ( <b>MV<sub>BV</sub></b> )	The ratio of market value of equity to book value

#### 4. Results/ Findings

In this section, the descriptive analysis of the research variables is first presented. Then, the hypotheses are tested accordingly.

#### 4.1 Descriptive Analysis

Table 1 shows the descriptive analysis for the research variables, including their minimum, maximum, mean, variance and standard deviation of the variables under study.

Table 1: Descriptive Analysis of the Research Variables

	Number	Range	Minimum	Maximum	Mean	Std. Deviation	Variance
EM (DAC)	599	1.81	-.78994	1.0200	.00	.13914	.019
Managerial Ownership (MANO)	600	.64	.0000	0.6459	.06	.12240	.015
Public ownership (PUBO)	600	.49	.0000	0.4965	.02	.06237	.004
Block holder more than 5% (BLHO)	600	1.00	.0000	1.0033	.51	.28578	.082

Table 2 shows the correlation matrix for the relationship between different aspects of Ownership structure and DAC.

Table 2: Correlation Matrix between independent Variables and DAC

Variable	DAC	MANO	PUBO	BLHO
DAC	1.000000			
MANO	0.045716	1.000000		
PUBO	0.019509	-0.020721	1.000000	
BLHO	0.087747	-0.003966	0.213113	1.000000

For the Correlation between managerial ownership and DAC, it was found that the correlation coefficient is 0.045716, which indicates a weak relationship between both variables. Concerning the correlation between Public Ownership and DAC. It was found that the correlation coefficient is 0.019509, which indicates a weak relationship between both variables. For the Block holder and DAC, it was found that the correlation coefficient is 0.087747, which indicates a weak relationship between both variables.

#### 4.2 Testing the Relationship between Managerial Ownership and DAC

Table 3 shows the regression model for the effect of Managerial Ownership on DAC using OLS method. It was found that there is an insignificant effect of Managerial Ownership on DAC, as the corresponding P-value is greater than 0.05 (P-value = 0.1740).

Table 2: Regression Model of Managerial Ownership Effect on DAC using OLS

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MANO	0.033703	0.024763	1.361011	0.1740
C	-0.554639	0.043744	-12.67922	0.0000
R-squared	0.028979	Mean dependent var		-0.593617
Adjusted R-squared	0.009128	S.D. dependent var		0.813675
S.E. of regression	0.809953	Akaike info criterion		2.437747
Sum squared resid	385.0857	Schwarz criterion		2.533013
Log likelihood	-718.3240	Hannan-Quinn criter.		2.474832
F-statistic	1.459854	Durbin-Watson stat		1.651559
Prob(F-statistic)	0.134872			

The following equation expresses the relationship:

$$EM = -0.554639 + 0.033703 \text{ MANO}$$

Table 4 shows the regression model for the effect of Managerial Ownership on DAC using GLS method. It was found that there is an insignificant effect of Managerial Ownership on DAC, as the corresponding P-value is greater than 0.05 (P-value = 0.2582). It could be claimed that the result obtained is the same as the one obtained using OLS method.

Table 3: Regression Model of Managerial Ownership on DAC using GLS

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MANO	0.027887	0.024644	1.131625	0.2582
C	-0.561365	0.044069	-12.73823	0.0000
R-squared	0.002120	Mean dependent var		-0.583959
Adjusted R-squared	0.000451	S.D. dependent var		0.813335
S.E. of regression	0.813151	Sum squared resid		395.4063
F-statistic	1.270521	Durbin-Watson stat		1.645989
Prob(F-statistic)	0.260121			

The following equation expresses the relationship:

$$EM = -0.561365 + 0.027887 \text{ MANO}$$

Therefore, the first hypothesis that there is a significant relationship between Managerial Ownership and EM had not been supported. The results were not as expected from the previous studies. According to (Sanchez- Ballesta and Garsa-Meca, 2007; Yeo et al., 2002) there is a positive relationship between Managerial Ownership and EM. On the other hand, (Klein, 2002; Sanchez-Ballesta and Garcia-Meca, 2007; Teshima and Shuto, 2008) argued that there is a negative relationship between Managerial Ownership and EM. But the results of this study match what was argued by (Habbash, 2010; Gabrielsen *et al.*, 2002) that there is an insignificant relationship between the two variables.

#### 4.3 Testing the Relationship between Public Ownership and DAC

Table 5 shows the regression model for the effect of Public Ownership on DAC using OLS method. It was found that there is an insignificant effect of Public Ownership on DAC, as the corresponding P-value is greater than 0.05 (P-value = 0.5804).

Table 5: Regression Model of Public Ownership on DAC using OLS

Variable	Coefficient	Std. Error	t-Statistic	Prob.
PUBO	0.035353	0.063913	0.553147	0.5804
C	-0.585462	0.036244	-16.15355	0.0000
R-squared	0.026422	Mean dependent var		-0.593617
Adjusted R-squared	0.006519	S.D. dependent var		0.813675
S.E. of regression	0.811018	Akaike info criterion		2.440376
Sum squared resid	386.0996	Schwarz criterion		2.535643
Log likelihood	-719.1128	Hannan-Quinn criter.		2.477462
F-statistic	1.327561	Durbin-Watson stat		1.650641
Prob(F-statistic)	0.198122			

The following equation expresses the relationship:

$$EM = -0.585462 + 0.035353 \text{ PUBO}$$

Table 6 shows the regression model for the effect of Public Ownership on DAC using GLS method. It was found that there is an insignificant effect of Public Ownership on DAC, as the corresponding P-value is greater than 0.05 (P-value = 0.6138). It could be claimed that the result obtained is the same as the one obtained using OLS method.

Table 6: Regression Model of public Ownership on DAC using GLS

Variable	Coefficient	Std. Error	t-Statistic	Prob.
PUBO	0.031973	0.063315	0.504985	0.6138
C	-0.586242	0.043696	-13.41637	0.0000
R-squared	0.000427	Mean dependent var		-0.477246
Adjusted R-squared	-0.001245	S.D. dependent var		0.809938
S.E. of regression	0.810442	Sum squared resid		392.7759
F-statistic	0.255373	Durbin-Watson stat		1.646590
Prob(F-statistic)	0.613503			

The following equation expresses the relationship:

$$EM = -0.586242 + 0.031973 \text{ PUBO}$$

Therefore, the second hypothesis that there is a significant relationship between Public Ownership and EM had not been supported. This result complies with the findings of (Peasnell *et al.*, 2005; Gonzalez and Garcia-Meca, 2014) but contradicts with Agnes (Charitou *et al.*, 2007) as they argued that the greater the public ownership the higher the influence on managers to satisfy shareholders by increasing earnings. According to (Velury and Jenkins, 2006; Siregar and Utama, 2008; Mitra, 2002; Chen and Rezaee, 2012), there is a negative relationship between the variables under study. This is referred to the influence of the stockholders as monitors of firms' activities, including the monitoring of EMs they have more courage and are able to play an active role in directing managerial activities and also improve the financial reporting practice.

#### 4.4 Testing the Relationship between Block Holder More than 5% and DAC

Table 7 shows the regression model for the effect of Block holder on DAC using OLS method. It was found that there is a significant positive effect of Block holder on DAC, as the corresponding P-value is less than 0.05 and the coefficient is 0.1565. Also, the R square is 0.033, which means that Block holder more than 5% explains 3.3% of the variation in DAC.

Table 7: Regression Model of Block holder on DAC using OLS

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BLHO	0.156578	0.073967	2.116844	0.0347
C	-0.537319	0.042377	-12.67951	0.0000
R-squared	0.033294	Mean dependent var		-0.593617
Adjusted R-squared	0.013532	S.D. dependent var		0.813675
S.E. of regression	0.808151	Akaike info criterion		2.433292
Sum squared resid	383.3743	Schwarz criterion		2.528559
Log likelihood	-716.9877	Hannan-Quinn criter.		2.470378
F-statistic	1.684739	Durbin-Watson stat		1.666959
Prob(F-statistic)	0.066239			

The following equation expresses the relationship:

$$EM = -0.537319 + 0.156578 \text{ BLHO}$$

Table 8 shows the regression model for the effect of Block holder on DAC using GLS method. It was found that there is a significant positive effect of Block holder on DAC, as the corresponding P-value is less than 0.05 and the coefficient is 0.1586. Also, the R square is 0.007, which means that Block holder explain 0.7% of the variation in DAC.

Table 4: Regression Model of Block holder on DAC using GLS

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BLHO	0.158600	0.073873	2.146923	0.0322
C	-0.536592	0.048467	-11.07121	0.0000
R-squared	0.007658	Mean dependent var		-0.483088
Adjusted R-squared	0.005998	S.D. dependent var		0.810106
S.E. of regression	0.807673	Sum squared resid		390.0969
F-statistic	4.614731	Durbin-Watson stat		1.662800
Prob(F-statistic)	0.032099			

The following equation expresses the relationship:

$$EM = -0.536592 + 0.158600 \text{ BLHO}$$

Therefore, the third hypothesis that there is a significant relationship between Block Holders more than 5% and EM had been supported. This agrees with the findings of (Habbash, 2010; Zhong *et al.*, 2007; Roodposhti and Chashmi, 2011). This is referred to the idea that large shareholders play an important role in firms by exercising control to generate special advantages and getting involved in the company's management which make pressure over managers resulting in their involvement in earnings management.

Table 9 shows the multiple regression model for the effect of all the research variables (Managerial Ownership, Public Ownership and Block Holders more than 5%) on DAC using OLS method. It was found that there is a significant positive effect of Block holders more than 5% on DAC, as the corresponding P-value is less than 0.05 and the coefficient is 0.1544. On the other hand, it was found that there is an insignificant effect of Managerial Ownership and public Ownership, as the corresponding p-values are greater than 0.05. Also, the R square is 0.036, which means that the model explains 3.6% of the variation in DAC.

Table 9: Regression Model for the Research Variables on DAC using OLS

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MANO	0.033770	0.024714	1.366440	0.1723
PUBO	0.008605	0.065175	0.132026	0.8950
BLHO	0.154492	0.075687	2.041211	0.0417
C	-0.497029	0.052040	-9.550924	0.0000
R-squared	0.036390	Mean dependent var		-0.593617
Adjusted R-squared	0.013329	S.D. dependent var		0.813675
S.E. of regression	0.808234	Akaike info criterion		2.436752
Sum squared resid	382.1466	Schwarz criterion		2.546675
Log likelihood	-716.0256	Hannan-Quinn criter.		2.479543
F-statistic	1.577998	Durbin-Watson stat		1.672293
Prob(F-statistic)	0.080561			

The following equation expresses the relationship:

$$EM = -0.497029 + 0.031973 \text{ MANO} + 0.008605 \text{ PUBO} + 0.154492 \text{ BLHO}$$

Table 10 shows the multiple regression model for the effect of all the research variables (Managerial Ownership, Public Ownership and Block Holders more than 5%) on DAC using GLS method. It was found that there is a significant positive effect of Block holder on DAC, as the corresponding P-value is less than 0.05 and the coefficient is 0.1587. On the other hand, there is an insignificant effect of Managerial Ownership and Public Ownership, as the corresponding P-values are greater than 0.05. Also,

the R square is 0.009, which means that the model explains 0.9% of the variation in DAC. It could be claimed that the result obtained is the same as the one obtained using OLS method.

Table 10: Regression Model for the Research Variables on DAC using GLS

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MANO	0.028535	0.024605	1.159727	0.2466
PUBO	0.003396	0.064361	0.052768	0.9579
BLHO	0.158766	0.075581	2.100609	0.0361
C	-0.502748	0.053185	-9.452799	0.0000
R-squared	0.009909	Mean dependent var		-0.561664
Adjusted R-squared	0.004926	S.D. dependent var		0.812570
S.E. of regression	0.810566	Sum squared resid		391.5822
F-statistic	1.988387	Durbin-Watson stat		1.665926
Prob(F-statistic)	0.114542			

The following equation expresses the relationship:

$$EM = -0.502748 + 0.028535 \text{ MANO} + 0.003396 \text{ PUBO} + 0.158766 \text{ BLHO}$$

Table 11 shows the regression model fitted for the effect of research variables with control variables on DAC. It illustrates that there is a significant positive effect of Debt Ratio on DAC as the regression coefficient is 0.257 and P-value is 0.030. This result complies with the findings of (DeFond and Jiambalvo, 1994; Alves, 2013; Gerayli et al., 2011). This could be attributed to the idea that High leverage firms has tendency toward to the violation of debt covenants and would make income-increasing accounting choices to loosen their debt constraints. Also, it is argued that firms that suffer from financial distress may engage in EM to look in a better situation for the creditor.

while, there is a significant negative effect of size on DAC as the regression coefficient is -0.193 and P-value is 0.000. this agrees with the findings of (Gul *et al.* 2009; Gerayli et al., 2011; Peasnell et al., 2000). This could be explained by the fact that larger companies may engage less in EM because they are exposed to pressure from financial analysts and investors. Moreover, the R square is 0.053 which means 5.3% of the variation of the DAC can be explained by the independent variables together with control variables. Also, there is a significant positive effect of Age on DAC as the regression coefficient is .155 and P-value is .152. The finding agrees with Wang (2014) but contradicts with Gul *et al.* (2009) who documented a negative relationship. Moreover, there is a significant positive effect of ROA on DAC as the regression coefficient is .193 and P-value is .618. Concerning MV\_BV a significant negative effect on DAC was found, as the regression coefficient is -.010 and P-value is .204. This result is against the findings of (Chung and Kallapur, 2003; Gerayli et al., 2011; Jelinek, 2007). Previous studies revealed that growth companies have a larger motive to employ in EM (Chung and Kallapur, 2003; Gerayli et al., 2011; Jelinek, 2007). Their study revealed that growth companies have a larger motive to employ in EM.

Table 11: Regression Model for the Research Variables and Control Variables on DAC

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	R-Square
	B	Std. Error	Beta			
(Constant)	.290	.317		.916	.360	0.053
MANO	.024	.025	.040	.982	.327	
PUBO	-.004	.064	-.003	-.062	.950	
BLHO	.121	.076	.067	1.591	.112	
ROA	.193	.387	.026	.499	.618	
Size	-.193	.047	-.173	-4.132	.000	
Age	.155	.108	.060	1.433	.152	
Debt Ratio	.257	.119	.107	2.169	.030	
MV_BV	-.010	.008	-.054	-1.273	.204	
a. Dependent Variable: DAC						

The following equation expresses the relationship:

$$EM = 0.290 + 0.024 \text{ MANO} - 0.004 \text{ PUBO} + 0.121 \text{ BLHO} + 0.193 \text{ ROA} - 0.193 \text{ Size} + 0.155 \text{ Age}$$

## 5. Conclusion, limitations and direction for future researches

To summarize, results of previous studies indicates that there would be no relation, a positive relation or a negative relation between the Ownership Structure and EM. This study found that the percentage of Managerial ownership and the percentage of public ownership have no significant relation with the degree to which companies exercise earnings management. on the other hand, the percentage of block holders has a positive effect on the level of earnings management. The reasons behind the results of this study would be the global financial crisis that happened in 2008 and the 2011 Egyptian revolution that created a tendency of the listed firms in the Egyptian stock market to manage their earnings despite the ownership structure. So, the EM practice is exercised no matter what the composition of the ownership is.

The researchers in this study believe that the ownership structure cannot be used solely to measure the degree of EM in case of an Emerging economy like Egypt. Other factors should be taken into consideration like the political situation of the country, the degree of economic development, and the cultural issues related to this country.

However, there are some limitations in this study. The study uses only the companies listed in the stock market. Such EM study should require a relatively larger sample size taking into consideration the thinness of the Egyptian capital market. Therefore, the findings of the study should be interpreted with caution.

Future research is needed to examine the management's incentives and mechanisms that managers use to manage earnings to meet or beat earnings thresholds. Also, further research is needed to examine whether the market rewards firms meeting or beating earnings thresholds.

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