

# The Direct Relationship between Earnings Management and Cost of Capital in Jordan's Companies

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**Abstract:** *The direct relationship between earnings management and cost of capital in Jordan's firms has a very vital role to play in earnings management and sources of financing in Asian. In spite of its importance, there is a serious dearth of literature on earnings management and cost of capital especially in Asian, particularly in Jordan. Therefore, the objective of this study is to investigate the effect of earnings management on cost of capital in Amman stock exchange. However, the method that influences the expectations of investors are the firms that need to be credible, transparent, and more informative about their activities, because when the firms' stocks have more liquid, the ability to attract investors will increase and it will obtain the necessary funds for their various activities. The study employed panel data analysis to an initial sample of 191 listed companies in the Amman Stock Exchange (ASE) covering 10-years period between 2010-2019. However, we sampled 99 nonfinancial listed companies on the Jordan Stock Exchange. Therefore, the findings from the panel data regression analysis revealed that, the real earnings management and accrual earnings management were significantly positively related to firms performance, which suggests that the shorter the periods the higher the performance of the companies. In the same vein, the control variables such as Firm's Size and return on assets were positively significant. However, Leverage is insignificant to the cost of capital. Finally, the study provides managerial implications and the direction for future research*

**Keywords:** Earnings Management; Cost of Capital and Panel Analysis;

## 1. Introduction

Capital financing has major sources of debt and equity (Rayan, 2008). This combination should increase the company's value by reducing the cost of capital, because if it is greater than the expected return, it will affect the establishment in the form of a decrease in its economic unit (Patro and Kanagaraj, 2016). The improving liquidity and reducing capital costs are among the most important factors related to company shares (Easley and O'hara, 2004). Therefore, cost of capital is an important criterion for capital budgets and performance measurement. Many modern companies also seek to attract capital based on an acceptable rate of capital markets. This cost is important for making any investment decisions given that at any investment opportunity the expected return should not be less than the cost of capital needed to finance it, as it is used to evaluate new and existing investment projects (Fernandes, 2014). In addition, it determines the value of the company as it relates to future cash flows as viewed by external investors (Baule, 2019).

It has to be noted here that returns and risks are important factors, so a balance must be reached among them by choosing capital that raises the value of the company and reduces the cost of capital (Saputra et. al., 2015). Access to an ideal capital is one of the most difficult things managers may face when expanding their company business. This requires either the issuance of shares or through external debt or both (Tsoy and Heshmati, 2017). In addition, better performance is essential for managers when using their debt and equity strategies (Ameen and Shahzadi, 2017). The cost of capital is divided into a part relating to equity of those who have invested their shares in the company, and another part related to lenders who have invested in the same investment (Damodaran, 2016).

In emerging markets where the high information risk index is usually high due to a lack of information resulting from low confidence in financial reports, equity cost rights are an important indicator used to assess the efficiency of the company and its ability to invest money in (Fernando et. al., 2010). The effect of the cost of equity is less when it comes to dividends than the cost of debt, because dividends are determined by shareholders provided that the company determines the amount that to be paid, while the returns on debt are fixed under a contract with creditors (Nikoomaram et. al., 2016).

Equity is issued in the form of ordinary and preferred shares. One of the most important advantages of financing equity is that the company is not obligated to pay the interest and the basic payments, its risk is less, and it increases the cash flow of the company. This contributes to the growth of its commercial business and the commitment of investors in the long term, and thus the company is not obligated to process the immediate payment of their return on investment. In contrast, there are several disadvantages, including

the high cost of equity and that, the shareholder has the right to vote and this affects the decision-making in the company (Sharma and Chadha, 2016). COE is a key issue in the decision-making processes within companies, as it is a key component of the total cost of capital (Cotner and Fletcher, 2000).

This means that an increase in the cost of equity will lead to the possibility of investment rejection that may affect the company's future growth (Embong et. al., 2012). Many researchers addressed the concept of cost of equity capital in their studies. Cost of equity capital is the minimum rate of return equity investors require for providing capital to the firm (Botosan, 2006). It is the rate of return that investors demand for their investment in the company, which represents the alternative opportunity cost that could have been obtained from alternative investments that had the same level of risk (Daske et. al., 2006).

Refers to also to the expected return on ordinary shares in the stock market, which represents the compensation required by shareholders in order to finance the company's investments in light of the associated risks, indicating that the cost of equity reflects the cost of the alternative opportunity to invest in the company's securities versus other investments that have the same level of risk (Witmer and Zorn, 2007). COE is the rate of return that investors require on an equity investment in a firm (Pratt and Grabowski, 2008). It is the minimum rate of return a firm must offer to compensate stockholders for their bearing some risk (Swee Sim and Kim Leng, 2009).

Cost of equity capital is the rate of investment that investors use to discount future expected cash flows to arrive at the current stock price (Rakow, 2010). It was defined also as the return which the firm pays to investors to compensate for the risk they undertake by investing their capital in the company (Eid, 2015). Defined also as the cost incurred by the company to meet the level of return on investment expected by the investor for an investment that has the same risk (Putra et. al., 2016).

## **2.0 LITERATURE REVIEW**

The companies can engage with the investors when face several risks, the most important of which are those related to investment decisions that are affected by any misleading or inaccurate information that may adversely affect their future projects (Bahattacharya, 2003). The presence of correct information may enable lenders and investors to assess the company's risks and forecast its future revenues and cash flows (Karjalainen, 2011) and the lack of it may cause them a kind of concern considering the data on which they depend. The most important of these data are profits, it is a strong and influential measure for investment purposes (Tabassum et. al., 2014). Any insufficient information of these profits will be reflected in the interest rates (Carmo et. al, 2016).

However, to overcome these problems, managers seek to obtain more profits to distribute to shareholders, either to preserve them or to attract potential shareholders by manipulating accounting procedures (Suffian and Sanusi, 2015). The most financial analysts rely on in their financial analyses is profits. Without quality, profits may lose their importance. Any manipulation of profits will lead to a loss of transparency and consequently a decline in investment in financial markets. Therefore, it is important to predict and evaluate the company's current and future performance. Hence, there is an urgent need for profit quality as an important element on which stakeholders depend to make rational decisions (Dechow et. al., 1996).

The focusing on the size of profit more than focusing on its quality is considered irrational, due to relying on the profit number itself and ignoring other factors that may lead to a decrease in the quality of profits such as earnings management and increased proportion of benefits in it (Block, 1999). The quality of profits as having predictive capacity for the future status of companies (Chan et. al., 2006). The profit quality is described as the ability of profits to indicate future cash flows through current declared profits (Srinidhi et. al., 2011). The companies that lack financial statements with appropriate timing, high transparency and a high degree of disclosure that clarifies what they are now and what they will become in the future will lead to misleading the investor, thus, lack of confidence in financial information in the capital markets (Demerjian, 2013).

The quality of profits can be measured by relevance, discretion and time series as measures based on the market, the quality of accruals, and predictability as measures based on accounting principles (Francis et. al., 2003). On the other hand, the profit quality is an important measure of a company if it has the ability to accurately reflect current and future operating performance as a good and useful indicator for assessing company value (Dechow and Schrand, 2004). There are three measures of profits quality, namely accruals quality, earnings variability, and the absolute value of abnormal accruals (Francis et. al., 2008). profits quality measures classified into three types: measures based on the market, measures based on revenue characteristics, and measures based on accruals (Dechow et. al., 2010).

The measure of profit quality varies according to the objectives of users of financial statements, such as accruals, suitability, timing, and profitability forecast (Li, 2011). Earnings management is also a measure of profit quality as well (Kamarudin and Ismail (2014). The quality of profits can be weak if managers use the flexibility of accounting rules when preparing financial reports, and it can be of high quality in the company not providing its accounting figures, especially if its growth index is high which is considered a good indicator for future flows (Carmo et. al., 2016).

### **2.1 Components of Earnings Management**

Some companies take a number of accounting measures when issuing their financial statements, to improve their image among users of these financial statements (investors, banks, creditors, customers, legislators, and academics), and the beneficiaries of these statements in general to make their decisions such as: offering shares, borrowing, planning for tax, and taking advantage of the flexibility that exists in some accounting standards, and the effects of these measures can be observed simply in the reports of these companies, as opposed to what these reports should contain correct information, in order to achieve the purpose for which you were prepared.

However, the issuance of financial statements by some companies may be delayed for the use of alternative accounting policies and methods, which are used to achieve certain personal benefits such as (increasing bonuses or maintaining their positions (Al-Jubouri and al-Khalidi, 2012). There are two methods in which management can handle profits.

First, accruals-based earning management which through it the managers choose strategies and assessing accruals (Jones, 1991). Second, real earning management, according to this method, the managers try to change the nature of economic activities, such as research and development expenses (Roychowdhury, 2006). Managers can manipulate earnings either by reducing research and development expenditures (R&D), or reducing sales, general, and administrative expenses (SG&A), or manipulating the timing of asset sale to report earnings, or excessive production to reduce the cost of goods sold (COGS) (Gunny, 2005). The second type of earnings management, which is the management of accruals, and showed that management exercises it through both discretionary accruals (DAC) and non-discretionary accruals (NDAC) (Shuto, 2007).

### **2.1.1 Real Earnings Management**

Through real earnings management, managers seek to use opportunities that increase their remuneration by increasing earnings and improving stock prices (Bergstresser and Philippon, 2006). This type of method modifies the real activities by changing their timing and size, such as sales, production, and investment (Sohn, 2016). Therefore, this type of earnings management is difficult for investors and stakeholders to understand because of its significant impact on current cash flows.

Real earnings management affect cash flows, and managing accruals through the manipulation of accounting policies (Lo, 2008). Using real activities or managing accruals can be positive (increase profits) or negative (decrease profits) (Miko and Kamardin, 2014).

These methods allow managers to manipulate the results of financial reports in order to achieve specific goals (Cupertino et. al., 2015). Real earnings management has been defined as changing the reported earnings by manipulating the timing of investment or financing decisions (Schipper, 1989).

It is defined also as “departures from normal operational practices, motivated by managers’ desire to mislead at least some stakeholders into believing certain financial reporting goals have been met in the normal course of operations (Roychowdhury, 2006). REM is the manipulation of business activities to meet an earnings threshold (Leggett et. al., 2009). The issue of managing real earnings through considering it as the achievement of managers’ profit goals through managing normal operating activities (Gunny, 2010).

It is a distortion of real activities by manipulating the timing and size of investment, financing, and sales in addition to production with the goal of achieving certain profits throughout the accounting period (Kim and Sohn, 2013). Also, the concept refers to a change in the company’s operating activities through which the company generates short-term profits that have a direct impact on the cash flows and the company’s economic value in the long run (Braam et. al., 2015).

Moreover, real earnings management is an opportunistic behavior in which accounting profits are changed as a way to mislead stakeholders by manipulating the timing and size of real business activities (Zhang, 2015). REM is a deviant administrative procedure that alerts earnings to a specific goal, and is carried out through operational activities related to reducing the cost of goods sold through overproduction, through reduction of research and development expenses, or through the reduction of administrative, general and sales expenses (Huang and Sun, 2017).

Finally, real earnings management is a method that relies on influencing current and future cash flows by manipulating profit figures (Abad et. al., 2018). real earnings management is exaggerating profits outside the scope of normal investment operations (Huang et. al., 2019).

### **2.1.2 Accrual Earnings Management**

Many users rely on earnings as a summary measure of the company’s financial performance resulting on an accrual basis. So many managers seek to overcome any problems related to these profits, especially those related to cash flows, even in the short term through what is known as accruals (Dechow, 1994). These accruals are chosen by managers to enhance their corporate earnings information as they are linked to current stock prices and future earnings (Subramanyam, 1996). Although accounting rules have been issued for preventing this type of fraud, managers are looking for any gaps in order to practice earnings management.

Accrual earnings management is an attempt to influence the company’s true economic performance by masking or hiding some information from its users, it is an attempt not to show the true economic position of the company (Dechow and Skinner, 2000). By

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which the flexibility of acceptable public accounting principles is used (Bauwhede and Willekens, 2003). Managers practice this type of earnings management at the end of the financial year. In other words, accrual earnings management is to use different techniques and methods in a legal way and within accounting standards to change the users' expression of the company's financial position, such as current accrual carries over for the next period (Kim and Sohn, 2013). The transfer of information in the correct manner to users outside the company is one of the most important roles of financial reporting so that it is relied upon to make the right decisions. They stated that when there are any violations in its financial statements, the company avoids providing any information and uses this type of earnings management as a temporary and short-term solution, in line with analysts' and investors' expectations (Safari *et. al.*, 2013). This method can be managed opportunistically by managers to process financial reports. Consequently, it is manipulating the declared figures by timing the declaration of expenses and revenues (Abbad *et. al.* (2016).

The reported profits are affected by accounting policies. Such policies might be approved by generally accepted accounting principles, such as the revenue recognition policy, which specifies expected future cash flows and this is called non-discretionary accruals; or these policies are under the control of the manager and this is called discretionary accruals (Christensen *et. al.*, 2013). Discretionary accruals can be manipulated by managers. They may be used as indicators to disclose management's manipulations of earnings, while discretionary accruals are governed by regulations and some factors outside the company's control (Vakilifard and Mortazavi, 2016).

Accrual earnings management (AEM) is different from real earnings management (REM). Accrual earnings management is exercised by the directors in the event that the company does not achieve its goals from the profits, as it is practiced at the end of the fiscal year, and the cash flow is not affected by it directly, as it is based on the accounting standards and the accruals of past years. Among its disadvantages is that it is easy to discover by the users of the financial statements, which reflects negatively on the financial position of the company such as the decrease in its share prices and thus bankruptcy. It is worth mentioning that several previous studies addressed AEM. Non-financial companies are involved in earnings management and the reason for this is related to several factors, including: leverage, accounts payable, cash flows from operating operations and current liabilities (Basha, 2006).

### 3.0 METHODOLOGY

The study focuses on the nonfinancial companies in Jordan and has been administered for the collection of data. The nonfinancial firms as well as other industrial sector accounts has contributed 85 percent of the total GDP. The research assesses the performance of non-financial firms listed in the Amman Stock Exchange during the period between 2010 and 2019.

The non-financial firms in Jordan are important to the economy since the industrial and service firms were used as a measure of economic growth and a major source of employment in Jordan (Marashdeh, 2014). The data were obtained from Securities Depository Center (SDC), Jordan Securities Commission (JSC), and Amman Stock Exchange (ASE). However, there are two sectors that exist in Jordan stock market: (i) the financial and (ii) non-financial firm's sector.

This research excludes financial firms and insurance sectors due the disclosure system and the standards of financial reporting for those institutions vary from other sectors. Earlier studies also excluded these sectors from their sample (Kim *et.al.*,2018; Orazalin and Akhmetzhanov , 2019; Alhadab, 2018). This research opted for the non-probabilistic sampling method to collect data from the Amman Stock Exchange. All industrial companies in Jordan registered in the Amman stock exchange was included in this study.

In the same vain, there are overall 191 companies that were registered in Amman Stock Exchange, we were able to derived 99 sample from the total population of 191 that is used in the study. All the data were collected from the company's annual report which is available on the websites of controlling and regulatory bodies, such as, ASE, SDC and JSC. Furthermore, after the collection of sufficient data that matched the minimum sample size requirements, the researchers summarized and analyzed the data using quantitative approach by utilizing using STATA to examine the hypotheses.

### 3.1 Research Model

The current study developed the following models to determine the impact of exploratory variables on cost of capital. The equation (1) was designed to examine the direct impact of earning management on the cost of capital. Model 1 tests two hypotheses;  $H_{1a}$ ,  $H_{1b}$ . Model 2 tests  $H_{2a}$ ,  $H_{2b}$ .  $H_{1a}$ ,  $H_{1b}$ , were formulated to examine the direct relationship between earning management and cost of capital as the follow equation

#### Model (1a):

$$COE_{it} = \beta_0 + \beta_1 REM_{it} + \beta_2 AEM_{it} + \beta_5 Size_{it} + \beta_6 Lev_{it} + \beta_7 ROA_{it} + u_{it}$$

Where;

$COE$  = The cost of equity

$i$  = a company and  $t$  = year

$\beta_0$ = intercept measures the expected value of the risk-free rate if the regression equals to zero

$\beta_1$  = the coefficient of the independent variable

$REM$  = Real Earnings Management

$AEM$ = Accrual Earnings Management

Size = company size

Lev =Leverage

ROA =Return on Assets

u = the error term

**Model (1b):**

$$COD_{it} = \beta_0 + \beta_1 REM_{it} + \beta_2 AEM_{it} + \beta_3 Size_{it} + \beta_4 Lev_{it} + \beta_5 ROA_{it} + u_{it}$$

Where;

COD = The cost of debt

i = a company and t = year

$\beta_0$  = intercept measures the expected value of the risk-free rate if the regression equals to zero

$\beta_1$  = the coefficient of the independent variable

REM = Real Earnings Management

AEM= Accrual Earnings Management

Size = company size

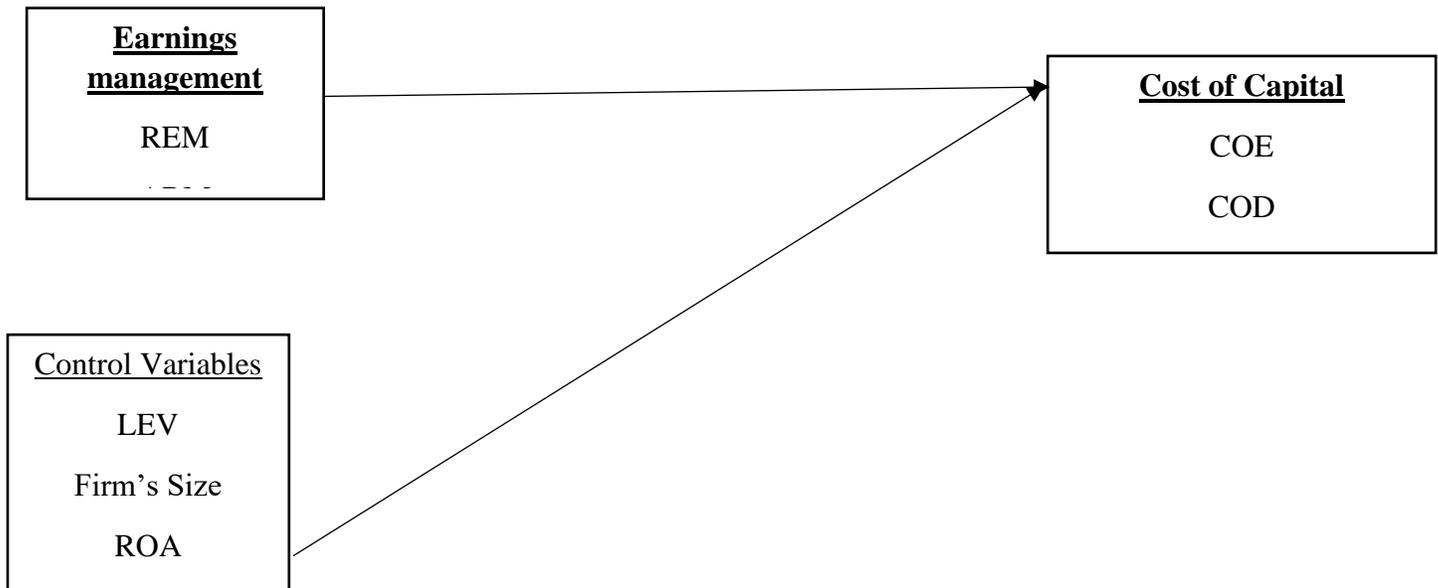
Lev =Leverage

ROA =Return on Assets

u = the error term

**3. 2 Research Framework**

The research framework focuses on the relationship between earnings management and cost of capital and firms in Jordan listed companies. The framework is designed based on the review of related literatures and research questions. Cost of capital which is measured by cost equity and cost of debt, is the dependent variables, while Earnings management are the independent variables which is measured by Real earnings management and Accrual earnings management. It has also been control by Leverage, firm’s size and return on assets.



**4. Data Analysis and Results**

**Table 1: Descriptive statistics**

Variable	Obs.	Mean	Std. Dev.	Min	Max
Cost of Equity	990	314.81	414.61	418	5185
Cost of Debt	990	689.48	325.94	118	1731
Real Earning Management	990	891.15	381.48	210	1582
Accrual Earning Management	990	417.21	212.93	112	798
Leverage	990	590.27	517.43	287	842
Firm's Size	990	375.42	301.21	215	694
Return on Assets	990	718.74	421.17	151	1619

From the analysis above the descriptive table shows the means value of cost of equity as a proxy of cost of capital for the dependent variable has a mean value of 314.81. While the SD was 414.61. It also shows that 417 of the companies have an accrual earning management. Moreover, when evaluate the mean value for real earnings management it has a value of 891 which has the higher than the accrual earnings management, the analysis becomes much more attractive, as it enables the firms to determine whether the company can positively or negatively increase their profit or loss. However, the table above also shows that no company have experienced loss during the period of operation in Jordan. This is because, all the variables in the means values do not show any negative figure in the analysis. Therefore, the firms were able to effectively and efficiently use their debt and equity for the sustenance and survival of the companies over a period of time. The findings indicates a greater prevalence of non-time and historical data, which is consistent with previous research findings (Seta & Setyaningrum, 2018; Habtoor, et al., 2019; Oliveira, et al., 2011; Adamu, 2013; Rajab & Handley-Schachler, 2009).

**Table 2: Correlation Matrix**

Variables	COE	COD	REM	AEM	VDQ	LEV	F. SIZE	ROA
Cost of Equity	1.000							
Cost of Debt	0.52	1.000						
Real Earning Management	0.27	-0.11	1.000					
Accrual Earning Management	0.11	0.15	-0.13	1.000				
Leverage	0.35	0.25	-0.01	0.25	-0.06	1.000		
Firm's Size	0.13	0.01	0.14	0.41	0.14	-0.24	1.000	
Return on Assets	0.41	0.22	0.51	0.32	0.21	0.41	-0.15	1.000

The correlation analysis is used as a techniques or tools to determine the level of relationship between each variable that was tested. The correlation of  $\pm 1$  is indicates perfect positive or negative relationship. It started from 0 which shows no relationship between the two variables. From the Table above, the cost of equity has a positive relationship with REM, AEM, LEV, Firm's Size and ROA. Besides that, there is a negative relationship between Cost of debt with value of -0.26 with REM, AEM, LEV, Firm's Size and ROA.

However, numerous studies hypothesized that relationships between covariates exceeding the 80% threshold could be the source of multicollinearity. The issue of multicollinearity does not emerged in this study. Similarly, the calculation of Variance Inflation Factor (VIF) was conducted to assess the findings' robustness. According to some researchers, the VIF threshold is eight, while others said it is at ten.

Despite this, the data indicates that all the explanatory variables are smaller than the VIF level established by researchers. Therefore, based on the above table, we can state categorically that the model is not affected by the multicollinearity issue. Furthermore, to determine whether the error term is homoscedastic or not, we used the Breusch-Pagan test to justify our analysis in the study.

**Table 3: Regression Result**

Variables	Coefficient	Standard Error	t-value	p-value
Cost of Equity	421.418	371.831	.245	0.001
Cost of Debt	348.421	114.33	4.78	0.016
Real Earning Management	352.186	144.10	7.22	0.021
Accrual Earning Management	416.172	67.515	4.81	0.012
Leverage	13.1942	11.034	0.45	0.097
Firm's Size	117.271	71.814	1.52	0.002
Return on Assets	315.144	261.166	4.19	0.013
Constant	613.742	471.475	2.81	0.006

At the 1% level, the F-statistic for the regression model is statistically significant (0.000). The F-test and R-square values are 0.58.27 and 0.63.14 respectively. The number shown by R-squire indicates that the model's explanatory variables explained approximately 63 percent of the earning management quality disclosed by firms. The cost of equity and cost of debt were statistically significant at the 1% level of significance. Real earning management and Accrual earning management were also significant. This indicates that the REM and AEM has significant relationship with the cost of capital. As such, this relationship could improve the performance of the company and attract confidence from the investors and shareholders of the firm. However, the controls variables were not statistically significant such as Leverage while ROA is also significant as well as firm's size. This shows that, the higher the firms size the more the company would generate more revenues to the shareholders of the company.

Furthermore, we conducted the Hausman specification test on the fixed effect and random effect models to see which model fits the data the best. Following the analysis, the chi-square statistic indicates an absolute value of 8.293, while the p-value is 0.141. The

presence of a higher p-value above the 5% level of significance indicates that the random effect model is more appropriate than the fixed effect model.

Besides, we did the Breusch and Pagan Lagrangian Multiplier test for random effects to see which model better fits our data between the random effect and Ordinary Least Square. After doing the analysis, the chi-square value of 311.54 was discovered, and the p-value (0.0000) was found to be statistically significant at 1%. The lower p-value of less than 1% unambiguously suggests that OLS is not the ideal model for the study. As a result, when compared to the competing models, random effect is the best acceptable model for the investigation of this study.

### Conclusion

Majority of the companies' problems focus on how to obtain external financing, and this depends mainly on the information issued by the managers. This means the more reliable and of high value information was made for them, the more consistency in the information the more the viability of the firm. This is thus reflected on the cost of capital and vice versa. With the hesitation of some managers to publish more information that goes beyond mandatory disclosure and conceal other negative information whose impact is reflected on the stakeholders' decisions, the need arises for the existence of the so-called voluntary disclosure, the most important of which are: reducing the cost of capital, improving investment decisions, reducing inconsistent information, preventing concealment of adverse information, increasing share prices, and increasing communication with shareholders (Kowalewska, 2015).

Additionally, it is also important means to increase the level of trust and confidence within the management level especially having access to the best options if possible. Giving that earnings management is entirely in the hands of managers, in contrast to mandatory disclosure imposed by laws and regulations. Earnings management is not without defects, as it requires double effort in the process of preparing data, resulting in huge amounts of disclosed information that could confuse the beneficiaries of the firm.

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