

Corporate governance, accounting information quality, and cost of equity capital an Indonesia' evidence

Krismiaji¹, Atmadi Raharja²

Accounting Academy of YKPN, Yogyakarta, Indonesia

E-mail: ¹ krismiaji@aaaykpn.ac.id; ² atmadi_atmadi@yahoo.com

ARTIKEL INFO

Article history:
Available online

Keywords:
corporate governance, accounting
quality, cost of equity capital

DOI:
<https://doi.org/10.20885/jaai.vol2.2.iss1.art1>

ABSTRACT

The purpose of this paper is to discuss empirical research examining the impact of corporate governance practice (CG) and accounting information quality (AIQ) on the cost of equity capital (COEC) in the context of agency problem and information asymmetry. This research uses a sample of 414 firms in the period between 2010 and 2013. The total observations consist of 1.656 firm-years. COEC, as a dependent variable is measured by price-earnings-growth (PEG) model. AIQ, as an independent variable is measured by absolute discretionary accrual as an inverse measure of accounting quality. CG is proxy by managerial ownership (MAN), measured by the percentage of management's equity shares, and institutional ownership (INS) which is measured by the percentage of an institution's owned equity shares. The data used in this study is obtained from Indonesian Capital Market Directory, Indonesian Stock Exchange database, and from company annual reports. This research finds evidence of a negative association of AIQ and COEC. Since AIQ uses an inverse measure of accounting quality, this means that accounting quality increases COEC. Thus this result does not support the hypothesis. With respect to CG, both MAN and INS negatively affect COEC. This means that CG decreases COEC and support the hypothesis.

ABSTRAK

Paper ini mendiskusikan hasil riset empiris yang menginvestigasi pengaruh *corporate governance* (CG) dan kualitas informasi akuntansi (AIQ) terhadap *cost of equity capital* (COEC) dalam konteks masalah keagenan dan asimetri informasi. Riset ini menggunakan sampel sebanyak 414 perusahaan untuk periode antara tahun 2010 sampai 2013, sehingga jumlah observasi sebanyak 1.656 sampel. COEC, sebagai variabel dependen diukur dengan model *price-earnings-growth* (PEG). AIQ, sebagai variabel independen diukur dengan akrual diskresi absolut sebagai ukuran balikan kualitas informasi akuntansi. CG diproksi dengan kepemilikan manajerial (MAN) yang diukur dengan persentase saham yang dimiliki oleh manajemen, dan kepemilikan institusional (INS) yang diukur dengan persentase saham yang dimiliki oleh institusi. Data yang digunakan berasal dari Indonesian Capital Market Directory (ICMD), database Bursa Efek Indonesia, dan laporan tahunan perusahaan. Riset ini menemukan bahwa AIQ dan COEC berhubungan secara negative. Karena AIQ menggunakan ukuran balikan kualitas informasi akuntansi, hasil ini mengandung arti bahwa kualitas informasi akuntansi meningkatkan COEC sehingga hasil ini tidak mendukung hipotesis. Variable CG yang terdiri atas MAN dan INS berpengaruh negative terhadap COEC. Hal ini berarti CG menurunkan COEC sehingga mendukung hipotesis penelitian.

Introduction

This paper discusses empirical research examining the impact of corporate governance practice and accounting quality on the cost of equity capital in the context of agency problem and information asymmetry. Corporate governance has been the most crucial issue in emerging financial markets since the 1997 Asian financial crisis (Byun, Kwak, & Hang, 2008). Several accounting scandals in developed markets have also increased public interest in the issue of corporate governance. The lower transparency or firm opacity to outside investors has been a subject of serious concern. This has raised the awareness of the importance of sound corporate governance systems as a way to protect outside shareholder rights.

Bushman and Smith (2003) stated that some researchers (Dechow, Sloan, & Sweeney, 1996; DeFond & Subramanyam, 1998; Francis, Philbrick, & Schipper, 1994) had already addressed the role of financial accounting information with reference to the operation of various corporate governance practices, such as board of directors, shareholder litigation, debt covenants, and audit function. Financial accounting information is an important source of firm-specific information which shareholders use when monitoring managers and concentrated owners. Therefore, high quality of financial reporting practice can alleviate agency problems, enhances the economic performance of firms, which in turn reduce external financing costs.

The role of corporate governance in creating value for shareholders has become the subject of intense interest in corporate finance research. The importance of mechanisms that align the interests of managers and shareholders and insider expropriation has been widely acknowledged (Pham, Suchard, & Zein, 2012). However, despite this general acceptance of the role of corporate governance, empirical research has remained inconclusive, especially those regard to the extent to which individual monitoring mechanisms enhance firm performance and shareholder value (Adams, Hermalin, & Weisbach, 2010; Brown & Caylor, 2006; Shleifer & Vishny, 1986).

Previous studies focus on the fact that a strong governance environment can limit divergence of cash flows and thus increase a firm's valuation. This can reduce a firm's cost of capital and thus implicitly increase firm value. Pham et al. (2012) argue that a strong corporate governance environment is able to decrease firm's cost of capital and hence implicitly increase firm value. A firm's cost of capital reflects investors' required return based on the firm's systematic risk (Pham et al., 2012). Previous studies find that firm's with weak governance perform particularly poorly during market downturns and thus should be subject to a higher cost of capital. If external monitoring of insiders is inadequate, managers may undertake excessive borrowings to finance unproductive projects which increase a firm's exposure to market-wide risk and ultimately increase the cost of capital. In addition, the cost of capital for poorly governed firms can also increase because a lack of corporate transparency leads to higher issuing and transaction costs (Pham et al., 2012).

The improved corporate disclosure practice can help decrease the transaction costs and liquidity risk between the firm and investors or among investors (Bushman & Smith, 2001; Diamond & Verrecchia, 1991; Leuz & Verrecchia, 2000; Verrecchia, 2001). Therefore, good quality of financial reports can reduce the cost of equity capital and enhance the firm performance. Theoretical research has made an important progress in explaining how a firm-specific information risk is priced and cannot be diversified (Easley & O'hara, 2004; Leuz & Verrecchia, 2005; O'Hara, 2003). Based on the theoretical research, several accounting studies have been conducted to investigate whether financial reporting quality, when weakened by poor corporate governance practices, increases firms' exposure to information risk and, thus increases the cost of equity capital (Aboody, Hughes, & Liu, 2005; Chen, Shevlin, & Tong, 2007; Francis et al., 2004, 2005). These studies the design of contracts to motivate a rational agent to act on behalf of a principal when the agent's interests would otherwise conflict with those of the principal (Scott, 2015). Monitoring practice, to ensure that actions performed by the agent are in line with the principal's interests, is hard to be realized because of the complexity of agent's activities. This situation is called information asymmetry (Scott, 2015). Information asymmetry is a condition where some parties to business transactions may have a relevant information advantage over others. Agency problem arises when there is information asymmetry both in term of activities and information owns by an agent. The first problem is called hidden action and the second problem is called hidden information. Hidden action leads to moral hazard whereas hidden information leads to adverse selection (Arifin, 2009). Moral hazard is a type of information asymmetry whereby one or more parties to the business transaction, or potential transaction, can observe their action in fulfillment of the transaction but not the other parties. Adverse selection is a type of information asymmetry whereby one or more parties to the business transaction, or potential transaction, have an information advantage over other parties (Scott, 2015).

Information asymmetry creates a moral hazard problem when managers have incentives to follow their own interests at shareholder expense. Self-interested managerial behavior can take several forms including shirking, consumption of perquisites, overcompensation, and empire building, all of which increase agency risk. Information asymmetry also creates an adverse selection problem when investors cannot detect the true economic value of the firm that is partially a function of the indistinguishable quality of management. Imperfect information on management quality and a firm's economic value results in greater agency risk being imposed on the shareholder. Corporate governance encompasses a broad spectrum of mechanisms intended to mitigate moral hazard and adverse selection problems, that is, agency risk, by increasing the monitoring of managements' actions and limiting managers' opportunistic behavior (Skaife et al., 2004). Prior research conceives that quality financial information reduces firm risk and, consequently, the cost of equity by increasing market liquidity, thereby reducing transactions costs or increasing the demand for a firm's securities (Diamond & Verrecchia, 1991).

Previous research indicates that a decrease in information asymmetry should reduce the cost of equity capital through reduced transaction costs and estimation risk. Study on the relation between accounting information and information risk are surveyed by (Callahan, Yohn, & Lee, 1997). They summarize research on the relation

between earnings announcements and information asymmetry. The initial theoretical model of information asymmetry primarily focuses on public disclosure reducing information asymmetry in the stock market. The next model shows that information asymmetry may be closely related to trading prior to earnings announcements. Following these models, three broad categories of empirical research have been introduced: accounting disclosure, accounting information quality, and managers' behavior. Overall, empirical research related to information asymmetry concludes that improving the information environment through corporate disclosure can reduce transaction costs and hence, the cost of capital.

Easley and O'hara (2004) emphasize the important role of accounting information accuracy in asset pricing. They develop a model that shows how differences in public and private information affect the cost of equity capital. Leuz and Verrecchia (2005) develop a model to analyze the link between information quality and the cash flows of firms. This model captures the fundamental relation between the improvement of the efficiency of firms' investment decisions and an increase in expected cash flow.

Recent empirical studies on financial reporting quality use the direct estimation of the cost of equity capital instead of the bid-ask spread, which is the limited information of the cost of equity capital (Skaife et al., 2004). Francis et al. (2004 and 2005) examine the relation between earnings quality or accrual quality and the cost of capital. They find a negative relation between the accounting-based and market-based earnings attributes and the cost of capital. In addition, by decomposing the accrual quality into inherent factors and discretionary factors, they also find that the cost of equity capital depends on the accrual quality. Moreover, Aboody, Hughes, and Liu (2005) examine the argument that earning quality affects the cost of capital in two stages. They find that the pricing of the earnings quality and the degree of the pricing are pronounced in firms with higher exposure to the earnings quality factor. Hribar and Jenkins (2004) examine the effect of accounting restatement on the cost of equity capital. They find that because accounting restatements can cause revisions in overall earnings quality, accounting restatements also result in lower expected future earnings and a higher cost of equity capital for firms.

Several studies directly address the issue that corporate governance risk which arises from a weak governance system can affect firms' cost of equity capital (Ashbaugh-Skaife, Collins, & LaFond, 2006; Chen et al., 2003; Cheng et al., 2006). Ashbaugh-Skaife, Collins, and LaFond (2006) investigate the impact of governance attributes, such as financial information quality, ownership structure, shareholder rights, and board structure, on firms' cost of equity capital. Their results show that both financial information quality and board structure are negatively related to the implied cost of equity capital estimates, whereas concentrated ownership in the form of a number of block holders is positively related to the implied cost of equity capital.

Literature Review

Financial Reporting Quality and the Cost of Equity Capital

Financial statements which do not provide sufficient financial information and disclosures are assumed to be the risky and unqualified financial statements. Consequently, investors require a high return and therefore firms should expense the high cost of capital. (Lambert, Leuz, & Verrecchia, 2007) demonstrate that the quality of accounting information can influence the cost of capital, both directly and indirectly. The direct effect occurs because higher quality disclosures affect the firm's assessed covariance with other firms' cash flows, which is non-diversifiable. The indirect effect occurs because higher quality disclosures affect a firm's real decisions, which likely changes the firm's ratio of the expected future cash flows to the covariance of these cash flows with the sum of all the cash flows in the market. Lambert, Leuz, and Verrecchia (2007) show that this effect can go in either direction, but it also derives conditions under which an increase in information quality leads to an unambiguous decline in the cost of capital. Overall, they find that the increase of accounting information quality decreases the cost of capital.

Botosan (1997) examines the association between the cost of equity capital and levels of the annual report and timely disclosure, and investor relations activities. She finds that the greater disclosure is associated with a lower of the cost of equity. Yet, for firms with a high analyst following, she finds no evidence of an association between their measure of disclosure level and cost of equity capital perhaps because the disclosure measure is limited to the annual report and may not provide a powerful proxy for overall disclosure level when analyst play a significant role in the communication process. Moreover, Botosan and Plumlee (2002) find that the cost of equity capital decreases in the annual report disclosure level but *increases* in the level of timely disclosures. The latter result is contrary to theory but is consistent with managers' claims that greater timely disclosures may increase the cost of equity capital, possibly through increased stock price volatility.

Chen et al. (2003) examine the effects of disclosure and other corporate governance mechanisms on the cost of equity capital in Asia's emerging markets with newly released surveys from Credit Lyonnais Securities Asia (CLSA). They find that both disclosure and non-disclosure corporate governance mechanisms have a significantly negative effect on the cost of equity capital. In addition, the effect of non-disclosure governance mechanisms is

more profound than that of disclosure on the cost of equity capital. Ashbaugh-Skaife, Collins, and LaFond (2006) examine governance attributes along four dimensions: (1) financial information quality, (2) ownership structure, (3) shareholder rights, and (4) board structure. They find that firms reporting larger abnormal accruals and less transparent earnings have a higher cost of equity, whereas firms with more independent audit committees have a lower cost of equity. Li et al. (2009) find that lower quality of earnings is associated with an increased cost of equity capital. Armstrong et al. (2009) find that relationship between information quality and cost of capital is negative. Francis et al. (2005) investigate the relations among voluntary disclosure, earnings quality, and cost of capital. They find that firms with good earnings quality have more expansive voluntary disclosures than firms with poor earnings quality. They also find that more voluntary disclosure is associated with a lower cost of capital.

Kopecká (2016) finds that segment disclosure quality has a negative linear effect on a firm's cost of capital. Gao (2010) find that cost of capital could increase with disclosure quality when new investment is sufficiently elastic. Xu and Tang (2015) find that firms domiciled in the more conservative financial reporting systems countries have a significantly lower cost of debt and cost of equity capital. Hong, Ma, and Zhang (2018) find that earnings quality is negatively related to the A-B share price differential and that the negative effect is more pronounced for firms with large information disparities between the markets. Finally, Apergis et al. (2011) find an increase in expected cash flows, coming from improvements in the quality of accounting information, leads to a reduction in the firm's cost of capital. On the basis of the above description, the hypothesis can be stated in an alternative form as follows:

H₁: Accounting quality negatively affects the cost of equity capital.

Managerial Ownership and Cost of Equity Capital

Jensen and Meckling (1976) stated that managerial ownership is one of the solutions to reduce agency problems by synchronizing manager's interest and shareholders' interest. Core, Hail, and Verdi (2015) find that managerial ownership decreases the cost of capital. Huang, Wang, and Zhang (2009) find that managerial ownership aligns managers' interests with those of shareholders, leading to a lesser degree of agency problems and lower cost of equity capital. Furthermore, the evidence suggests that managerial ownership could substitute for shareholder rights in affecting the cost of equity capital, making strong shareholder rights less important in a high managerial ownership setting. Shah and Butt (2009) find a negative relationship between managerial ownership and the cost of equity. The convergence-of-interest hypothesis posits managerial ownership promotes goals congruence and lowers agency cost because insiders are not only managers but also owners of the firm. Owner-managers avoid value destruction activities in order to protect their mainly undiversified shareholdings. Pham, Suchard, and Zein (2012) find that the insiders' tendency to protect firms' investment reduced the perceived risk of a firm, thereby prompting investors to accept a reduction in the risk premium leading to a lower cost of capital. On the basis of the above description, the hypothesis can be stated in an alternative form as follows:

H₂: Managerial ownership negatively affects the cost of equity capital.

Institutional Ownership and Cost of Equity Capital

Jensen and Meckling (1976) stated that institutional arrangements would yield net benefits from the reduction of the agency costs. Tehranian et al. (2006) demonstrate that Institutional ownership of shares reduces the use of discretionary accruals in earnings management. Furthermore, the monitoring action by institutional investors may motivate managers to more focus on firm's performance. This, in turn, decreases opportunistic behavior of managers. Easley and O'hara (2004) show that differences in the composition of information between public and private information affect the cost of capital, with investors demanding a higher return to hold stocks with greater private information. This higher return arises because informed investors are better able to shift their portfolio to incorporate new information, and uninformed investors are thus disadvantaged. In equilibrium, the quantity and quality of information affect asset prices. Therefore, theoretically the higher the private information, the higher cost of capital. Ashbaugh-Skaife, Collins, and LaFond (2006) find that firms with a greater proportion of their shares held by activist institutions receive a lower cost of equity. Attig, Guedhami, and Mishra (2008) find evidence that the implied cost of equity decreases with the presence, number, and voting size of large shareholders beyond the controlling owner. They also find that the identity of the second largest shareholder is important in determining the risk of corporate expropriation in family-controlled firms. Their findings imply that majority shareholders play an important role in overcoming information asymmetry between majority and minority shareholders, which in turn decreases cost of equity capital. In the case of investing in financially constrained firms, the increase in ownership by some institutional investors can be attributed to the investors' expectation about the investee's long-term growth potential. In other words, for long-term institutional investors to increase the stake of ownership in a financially constrained firm is similar to certifying the investee to meet their higher standards for which they are known.

Stinson and Ricketts (2016) find that significant increases in institutional ownership for high-risk firms led to larger reductions in the implied cost of equity capital. On the basis of the above description, the hypothesis can be stated in an alternative form as follows:

H₃: Institutional ownership negatively affects cost of equity capital.

Research Method

This study examines the relationship between accounting information quality, corporate governance, and cost of equity capital. The samples used in this research are firms listed on the Indonesian Stock Exchange (IDX) in the year of 2010 to 2013. The sample was selected using the purposive sampling technique. The first requirement is that it is a public company listed at the IDX from 2010 to 2013. The second requirement is that those firms should have complete data needed for the research. The third criterion is that these firms report EPS for the year of t+1 as well as EPS for the year of t. The last criterion is that the firms have publicly available information. The data came from three sources, (1) Indonesian Capital Market Directory (ICMD), Indonesian Stock Exchange website: www.idx.co.id, and (3) company's website. The unit analysis used in this research is firm-year.

The dependent variable cost of capital (COEC) is the required return rate by investors for their investments in equity capital where COEC is calculated by PEG model as proposed by Easton (2004).

$$COEC_{PEG} = \sqrt{\frac{EPS_2 - EP_1}{P_0}} \tag{1}$$

Where:

EPS₂ = Expected accounting earnings per share for period t = 2.

EPS₁ = Expected accounting earnings per share for period t = 1.

P₀ = Current year share price.

The PEG-ratio is a special case of model of Ohlson and Juettner-Nauroth (2005). Two important assumptions underlying the Easton formula are: (1) There is no change in abnormal earnings beyond the forecast horizon, and (2) There are no dividend payments prior to the earnings forecasts. Forecasts of earnings and forecasts of short-run earnings growth are readily available as a practical matter. Several institutions provide forecasts of earnings for the current year, for the next year, and for the short-run future. For COEC calculation, forecasts of earnings two years ahead as a proxy for EPS2 and forecast of earnings one year ahead as a proxy for EPS1. This research uses three independent variables, which consist of accounting information quality (AIQ), managerial ownership (MAN), and institutional ownership (INS).

Accounting information quality is a result of firm's financial reporting system which routinely measures and disclosures quantitative information about audited and published financial position and firm's performance (Bushman & Smith, 2003). Accounting quality is proxied by accounting earnings (Krismiaji, Aryani, & Suhardjanto, 2016). This variable is measured by discretionary accrual and estimated by *Modified Jones Model* (Dechow et al., 1996) in the following equation:

$$TAC_{i,j,t} = \beta_{1jt} \left[\frac{1}{TA_{i,j,t-1}} \right] + \beta_{2jt} \frac{(\Delta Rev_{i,j,t} - \Delta AR_{i,j,t})}{TA_{i,j,t-1}} + \beta_{3jt} \frac{PPE_{i,j,t}}{TA_{i,j,t-1}} + \varepsilon_{ijt} \tag{2}$$

where TAC_{ijt} is the total accruals for firm i, industry j for year t scaled by total assets for year t-1; TA_{ijt-1} is the total assets for year t-1; ΔREV_{ijt} are revenues for firm i, for year t less revenues for firm i for year t-1 industry j scaled by total assets for year t-1; ΔREC_{ijt} are receivables for firm i for year t less receivables for firm i for year t-1, industry j scaled by total assets for year t-1; and PPE_{ijt} gross property plant and equipment for firm i for year t industry j scaled by total assets for year t-1. ε_{ijt} is the error term. Discretionary accruals (DA) for year t are estimated as the absolute values of residuals from the cross-sectional ordinary least-square (OLS) estimates of Equation (2). The value of absolute discretionary accruals (ABSDA) is a proxy for accounting information quality. ABSDA is an inverse measure of accounting information quality, therefore the lower ABSDA, the higher the quality of accounting information.

Managerial ownership is a cumulative percentage of management's equity shares. The indicator used to measure managerial ownership is a number of shares owned divided by all outstanding's share. Referring to Ang and Ding (2006), we define institutional ownership is a cumulative percentage of financial institutional and other business institution's equity shares. The indicator used to measure institutional ownership is a number of shares owned divided by all outstanding's share.

Three control variables are used in this research. They are Size, the proxy of firm's size; Lev, the ratio of total liabilities and total assets, and ROE, the ratio of net profit and total equities. Size is a control variable which is

used to control the variations of firm's size. Firm size is a well-established determinant of firm's value and has an effect on many aspects of a firm's operation. This variable is measured by log total assets. This measure reflects firm's size. Hail and Leuz (2006); Christensen, de la Rosa, and Feltham (2010); Daske (2006); Kim and Shi (2012); Li (2010) suggest that firm's size decrease cost of capital since investors in large firms require low return which in turn decrease cost of capital. LEV or leverage is a control variable which is used to control the variations of firm's capital structure. This variable is measured by dividing total liabilities by total assets. The low leverage indicates that a company has a small number of liabilities and low cost of debt (Kim & Shi, 2012; Li, 2010) and the higher the leverage, the higher return required by investors. ROE (return on equity) is a control variable which is used to control firm's profit variability. This variable is measured by dividing net income by firm's total equity. The higher ROE, the lower the cost of capital Castillo-Merino, Menéndez-Plans, and Orgaz-Guerrero (2014).

Model Specification

The main statistical method to test the hypotheses is the GLS regression. The GLS regression model is estimated as follows:

$$\text{COEC}_{it} = \alpha + \beta_1 \text{AIQ}_{it} + \beta_2 \text{MAN}_{it} + \beta_3 \text{INS}_{it} + \beta_4 \text{SIZE}_{it} + \beta_5 \text{LEV}_{it} + \beta_6 \text{ROE}_{it} + \varepsilon_{it} \quad (3)$$

Where:

COEC_{it} = Cost of equity capital of firm i in the year t,

AIQ_{it} = Accounting information quality which is proxied by absolute discretionary accrual (ABSDA) of firm i in the year t,

MAN_{it} = Managerial ownership of firm i in the year t,

IN_{it} = Institutional ownership of firm i in the year t

SIZE_{it} = Log total asset is the proxy of firm size of firm i in the year t,

LEV_{it} = Leverage ratio of firm i in the year t,

ROE_{it} = Profitability of firm i in the year t, and

ε_{it} = error term.

Results and Discussion

On the basis of the sampling process described, this study used 414 firms in the period between 2010 and 2013 as the data sample. The total observations consist of 1.656 firm-years. Table 1 shows the descriptive statistics for the sample data. From Table 1, it can be seen that the mean of the COEC shows a value of 0.28 with a standard deviation of 0.52. This means that in average, the sample firms have to pay their funding cost in the rate of 25%. AIQ which is a measure of accounting information quality has a mean of 0.92 with a standard deviation of 8.54. Institutional ownership has a mean of 0.64 with a standard deviation of 0.26 whereas managerial ownership has a mean of 0.02 with a standard deviation of 0.07.

Table 1. Descriptive Statistic

	Mean	Median	Maximum	Minimum	Std. Dev.
COEC	0.28	0.18	11.47	0.00	0.52
AIQ	0.92	0.12	217.99	0.00	8.54
INS	0.64	0.69	1.13	0.00	0.26
MAN	0.02	0.00	0.61	0.00	0.07
LEV	0.55	0.50	11.84	0.00	0.53
ROE	36.62	9.56	43013.58	-612.40	1060.60
SIZE	6.26	6.25	8.87	3.49	0.85

To test the hypotheses, this study uses multiple regression models. The procedure uses generalized least square (GLS) estimation method. The classic assumptions of regression model were tested before the regression statistics analysis was conducted. The assessment shows that the residuals were normally distributed and there were no problems with multicollinearity, heteroscedasticity, and autocorrelation in the data. The correlation among variables is presented in Table 2.

Table 2. Pearson Correlation

	COEC	AIQ	INS	MAN	LEV	ROE
AIQ	-.018					
INS	.029	-.023				
MAN	-.018	-.022	-.224			
LEV	.040	-.022	-.034	-.005		
ROE	-.012	-.003	.001	-.008	-.005	
Size	-.097	.104	-.193	-.099	-.050	.015

**, * show that correlation is significant at the 0.01 level and 0.05 level respectively (2-tailed).

The table shows that the correlation between independent variables less than 0.70. This indicates that there is no multicollinearity among independent variables. The correlation coefficient between AIQ and COEC is negative. It is an initial indication that AIQ negatively affects COEC. The correlation coefficient between institutional and COEC is positive, whereas the correlation between managerial ownership variables and COEC is negative. This will be further investigated in regression analysis.

The regression analysis results to test the hypotheses are presented in Table 3. Using the equation model (3), we split our analysis into two sub-models as follows:

$$COEC_{it} = \alpha + \beta_1 AIQ_{it} + \beta_2 MAN + \beta_3 INS + \beta_4 SIZE + \beta_5 LEV + \beta_6 ROE_{it} + \epsilon_{it} \tag{3a}$$

$$COEC_{it} = \alpha + \beta_1 AIQ_{it} + \beta_2 MAN*AIQ + \beta_3 INS*AIQ + \beta_4 SIZE + \beta_5 LEV + \beta_6 ROE_{it} + \epsilon_{it} \tag{3b}$$

Table 3. Regression Analysis

Variable	Model 3a		Model 3b	
	Coefficient	t-Statistic	Coefficient	t-Statistic
Intercept	0.647	145.800	0.653***	113.242
AIQ	-0.001***	21.569	-0.001***	-2.730
INS	-0.022***	-5.861	-0.025***	-7.279
AIQ*INS			0.003**	1.991
MAN	-0.034**	-1.780	-0.047***	-3.087
AIQ*MAN			-0.177***	-27.557
LEV	0.036***	10.723	0.038***	27.330
ROE	-0.003***	-8.627	-0.003***	-8.413
SIZE	-0.063***	168.543	-0.064***	-67.884
Adj. R	0.407		0.328	
F-statistic	190.812***		101.873***	

***, **, * show that coefficient is significant at 0.01, 0.05, and 0.1 respectively

The main objective of splitting the model into two models is to ensure the consistency of the analysis results. To test whether there is an association between COEC and AIQ (H_1), the variable investigated is AIQ. The Column Model 3a in Table 3 shows the regression result. The result shows a negative (-0.001) and significant coefficient in the level $\alpha=0.01$. This result indicates that the accounting information quality associated negatively with COEC. Therefore, when AIQ decrease, COEC increase. Since AIQ is an inverse measure of accounting quality, it means that the decrease in AIQ equal to the increase in accounting quality. It can be concluded that H_1 which states that accounting quality negatively affects the cost of equity capital is not supported by empirical data.

Lambert, Leuz, and Verrecchia (2007) demonstrate that the quality of accounting information can influence the cost of capital, both directly and indirectly. The direct effect occurs because higher quality disclosures affect the firm's assessed covariance with other firms' cash flows, which is non-diversifiable. The indirect effect occurs because higher quality disclosures affect a firm's real decisions, which likely changes the firm's ratio of the expected future cash flows to the covariance of these cash flows with the sum of all the cash flows in the market. Lambert, Leuz, and Verrecchia (2007) show that this effect can go in either direction, but it also derives conditions under which an increase in information quality leads to an unambiguous decline in the cost of capital. Overall, they find that the increase of accounting information quality decreases the cost of capital.

This result is not consistent to previous research done by Botosan (1997) who finds that the greater disclosure is associated with a lower of cost of equity, Botosan and Plumlee (2002) who find that the cost of equity capital decreases in the annual report disclosure level but *increases* in the level of timely disclosures, Chen, Chen, and Wei (2003) who find that both disclosure and non-disclosure corporate governance mechanisms have a significantly negative effect on the cost of equity capital, Ashbaugh-Skaife, Collins, and LaFond (2006) who find that firms reporting larger abnormal accruals and less transparent earnings have a higher cost of equity, whereas firms with more independent audit committees have a lower cost of equity, and Apergis et al. (2011) who find an increase in expected cash flows, coming from improvements in the quality of accounting information, leads to a reduction in the firm's cost of capital. We suspect that the information quality measure used in this research may become one of the causes the different result, compared to the previous study.

The Column Model 3a in Table 3 also shows a negative (-0.034) and significant coefficient in the level $\alpha=0.01$ for MAN. This indicates that the managerial ownership negatively affects the cost of equity capital. Therefore, hypothesis 2 which stated that managerial ownership negatively affects the cost of equity capital is supported by the empirical data. Moreover, when this result is confirmed with the result in column 3b in Table 3 in which the correlation coefficient of interaction variable of AIQ*MAN is negative (-0.177) and significant. This result is consistent with Jensen and Meckling (1976) who stated that managerial ownership is one of the solutions to reduce agency problems by synchronizing manager's interest and shareholders' interest. Moreover, this result is also consistent with the previous studies performed by Shah and Butt (2009); Core, Hail, and Verdi (2015) who find that managerial ownership decreases cost of capital, Huang, Wang, and Zhang (2009) who find that managerial ownership aligns managers' interests with those of shareholders, leading to a lesser degree of agency problems and lower cost of equity capital.

The Column Model 3a in Table 3 also shows a negative (-0.022) and significant coefficient in the level $\alpha=0.01$ for INS. This indicates that the institutional ownership negatively affects the cost of equity capital. Therefore, hypothesis 3 which stated that institutional ownership negatively affects the cost of equity capital is supported by the empirical data. But, when this result is confirmed with the result in column 3b in Table 3 in which the correlation coefficient of interaction variable of AIQ is positive (0.003) and significant. This probably indicates that institution owners are not strong enough to overcome the agency problems especially when it interacts with accounting quality which is measured by AIQ.

Yet, individually this result is consistent to Jensen and Meckling (1976) who stated that institutional arrangements would yield net benefits from the reduction of the agency costs. Furthermore, this result is also consistent with Tehranian et al. (2006) who find that institutional ownership of shares reduces the use of discretionary accruals in earnings management, Easley and O'hara (2004) who show that differences in the composition of information between public and private information affect the cost of capital, and thus the higher the private information, the higher cost of capital, Ashbaugh-Skaife, Collins, and LaFond (2006) who find that firms with a greater proportion of their shares held by activist institutions receive a lower cost of equity, and Attig, Guedhami, and Mishra (2008) who find evidence that the implied cost of equity decreases with the presence, number, and voting size of large shareholders beyond the controlling owner.

Conclusion

This paper investigates whether corporate governance, accounting information quality affect the cost of equity capital. The result indicates that accounting information does not decrease the cost of equity capital, and therefore it does not support H₁ which state that accounting quality negatively associated with the cost of equity capital. The results also indicate that managerial ownership and institutional ownership do decrease the cost of equity capital. The results support H₂ and H₃ which state that managerial ownership and institutional negatively associated with the cost of equity capital.

The result has an implication, in which this confirm agency theory which predicts that monitoring and controlling activities by owners enhance the firm's efficiency. This research proves that managerial ownership and institutional ownership decrease firm's cost of equity capital which means that firm's efficiency enhance.

This research has several limitations. First, we use one accounting quality measures, which differ from that of previous research. This may lead to the inconsistency compare to that of previous research. Therefore, future research may be performed by using more than one quality measures. Second, we use data in the period of 2010 – 2013. This is the period where Indonesian companies are in the transition to adopt the new and high-quality accounting standard. Therefore, there is an opportunity for future research by involving data in the period after 2012, the starting period of full adoption of the new accounting standards.

References

- Aboody, D., Hughes, J., & Liu, J. (2005). Earnings quality, insider trading, and cost of capital. *Journal of Accounting Research*, 43(5), 651–673. <https://doi.org/10.1111/j.1475-679X.2005.00185.x>
- Adams, R. B., Hermalin, B. E., & Weisbach, M. S. (2010). The role of boards of directors in corporate governance: a conceptual framework and survey. *Journal of Economic Literature*, 48, 58–107. <https://doi.org/10.2307/40651578>
- Ang, J. S., & Ding, D. K. (2006). Government ownership and the performance of government-linked companies: the case of Singapore. *Journal of Multinational Financial Management*, 16(1), 64–88. <https://doi.org/10.1016/j.mulfin.2005.04.010>
- Apergis, N., Artikis, G., Eleftheriou, S., & Sorros, J. (2011). Accounting information and cost of capital: a theoretical approach. *Modern Economy*, 2(4), 589–596. <https://doi.org/10.4236/me.2011.24066>
- Arifin, Z. (2009). *Teori Keuangan & Pasar Modal*. Yogyakarta: Ekonisia.
- Armstrong, C., Banerjee, S., Corona, C., Almazan, A., Core, J., Garlappi, L., & Todorov, V. (2009). *Information quality, systematic risk and the cost of capital*. Retrieved from [http://www.centerforpbefr.rutgers.edu/20thFEA/AccountingPapers/Session2/Armstrong, Banerjee, and Corona.pdf](http://www.centerforpbefr.rutgers.edu/20thFEA/AccountingPapers/Session2/Armstrong,%20Banerjee,%20and%20Corona.pdf)
- Ashbaugh-Skaife, H., Collins, D. W., & LaFond, R. (2006). The effects of corporate governance on firms' credit ratings. *Journal of Accounting and Economics*, 42(1–2), 203–243. <https://doi.org/10.1016/J.JACCECO.2006.02.003>
- Attig, N., Guedhami, O., & Mishra, D. R. (2008). Multiple large shareholders, control contests, and implied cost of equity. In *Finance International Meeting AFFI - EUROFIDAI*. Paris. <https://doi.org/10.2139/ssrn.1282129>
- Barnea, A., Haugen, R. A., & Senbet, L. W. (1985). *Agency problems and financial contracting*. Prentice-Hall.
- Botosan, C. A. (1997). Disclosure level and the cost of equity capital. *The Accounting Review*, 72(3), 323–349. <https://doi.org/10.2307/248475>
- Botosan, C. A., & Plumlee, M. A. (2002). A Re-Examination of disclosure level and the expected cost of equity capital. *Journal of Accounting Research*, 40(1), 21–40. <https://doi.org/10.2307/3542428>
- Brown, L. D., & Caylor, M. L. (2006). Corporate governance and firm valuation. *Journal of Accounting and Public Policy*, 25(4), 409–434. <https://doi.org/10.1016/J.JACCPUBPOL.2006.05.005>
- Bushman, R. M., & Smith, A. J. (2001). Financial accounting information and corporate governance. *Journal of Accounting and Economics*, 32(1–3), 237–333. [https://doi.org/10.1016/S0165-4101\(01\)00027-1](https://doi.org/10.1016/S0165-4101(01)00027-1)
- Bushman, R. M., & Smith, A. J. (2003). Transparency, financial accounting information, and corporate governance. *Economic Policy Review*, 9(1). Retrieved from <https://www.newyorkfed.org/medialibrary/media/research/epr/03v09n1/0304bush.pdf>
- Byun, Kwak, & Hang. (2008). The implied cost of equity capital and corporate governance practices. *Asia-Pacific Journal of Financial Studies*, 37(1), 139–184. Retrieved from https://www.researchgate.net/publication/280140181_The_Implied_Cost_of_Equity_Capital_and_Corporate_Governance_Practices
- Callahan, C., Yohn, T. L., & Lee, C. M. C. (1997). Accounting information and bid-ask spread. *Accounting Horizons*, 11(4). Retrieved from https://www.researchgate.net/publication/279545703_Accounting_Information_and_Bid-Ask_Spread
- Castillo-Merino, D., Menéndez-Plans, C., & Orgaz-Guerrero, N. (2014). Mandatory IFRS adoption and the cost of equity capital. Evidence from Spanish Firms. *Intangible Capital*, 10(3), 562–583. <https://doi.org/10.3926/ic.491>
- Chen, K. C. W., Chen, Z., & Wei, K. C. J. J. (2003). Disclosure, corporate governance, and the cost of equity capital: evidence from Asia's emerging markets. *Hongkong University of Science and Technology*. <https://doi.org/10.2139/ssrn.422000>

- Chen, S., Shevlin, T., & Tong, Y. H. (2007). Does the pricing of financial reporting quality change around dividend changes? *Journal of Accounting Research*, 45(1), 1–40. <https://doi.org/10.1111/j.1475-679X.2007.00225.x>
- Cheng, C. S. A., Collins, D., & Huang, H. H. (2006). Shareholder rights, financial disclosure and the cost of equity capital. *Review of Quantitative Finance and Accounting*, 27(2), 175–204. <https://doi.org/10.1007/s11156-006-8795-2>
- Christensen, P. O., de la Rosa, L. E., & Feltham, G. A. (2010). Information and the cost of capital: an ex ante perspective. *The Accounting Review*, 85(3), 817–848. <https://doi.org/10.2308/accr.2010.85.3.817>
- Core, J. E., Hail, L., & Verdi, R. S. (2015). Mandatory disclosure quality, inside ownership, and cost of capital. *European Accounting Review*, 24(1), 1–29. <https://doi.org/10.1080/09638180.2014.985691>
- Daske, H. (2006). Economic benefits of adopting IFRS or US-GAAP - Have the expected cost of equity capital really decreased? *Journal of Business Finance & Accounting*, 33(3–4), 329–373. <https://doi.org/10.1111/j.1468-5957.2006.00611.x>
- Dechow, P. M., Sloan, R. G., & Sweeney, A. P. (1996). Causes and consequences of earnings manipulation: an analysis of firms subject to enforcement actions by the SEC. *Contemporary Accounting Research*, 13(1), 1–36. <https://doi.org/10.1111/j.1911-3846.1996.tb00489.x>
- DeFond, M. L., & Subramanyam, K. R. (1998). Auditor changes and discretionary accruals. *Journal of Accounting and Economics*, 25(1), 35–67. [https://doi.org/10.1016/S0165-4101\(98\)00018-4](https://doi.org/10.1016/S0165-4101(98)00018-4)
- Diamond, D. W., & Verrecchia, R. E. (1991). Disclosure, liquidity, and the cost of capital. *The Journal of Finance*, 46(4), 1325. <https://doi.org/10.2307/2328861>
- Easley, D., & O'hara, M. (2004). Information and the cost of capital; information and the cost of capital. *The Journal of Finance*, LIX(4). <https://doi.org/10.1111/j.1540-6261.2004.00672.x>
- Easton, P. D. (2004). PE ratios, PEG ratios, and estimating the implied expected rate of return on equity capital. *The Accounting Review*, 79(1), 73–95.
- Francis, J., LaFond, R., Olsson, P. M., & Schipper, K. (2004). Costs of equity and earnings attributes. *The Accounting Review*, 79(4), 967–1010. <https://doi.org/10.2308/accr.2004.79.4.967>
- Francis, J., LaFond, R., Olsson, P., & Schipper, K. (2005). The market pricing of accruals quality. *Journal of Accounting and Economics*, 39(2), 295–327. <https://doi.org/10.1016/J.JACCECO.2004.06.003>
- Francis, J., Philbrick, D., & Schipper, K. (1994). Shareholder litigation and corporate disclosures. *Journal of Accounting Research*, 32(2), 137. <https://doi.org/10.2307/2491279>
- Gao, P. (2010). Disclosure quality, cost of capital, and investor welfare. *The Accounting Review*, 85(1), 1–29. <https://doi.org/10.2308/accr.2010.85.1.1>
- Hail, L., & Leuz, C. (2006). International differences in the cost of equity capital: do legal institutions and securities regulation matter? *Journal of Accounting Research*, 44(3), 485–531. <https://doi.org/10.1111/j.1475-679X.2006.00209.x>
- Hong, P. K., Ma, T., & Zhang, G. (2018). Accruals quality and cost of capital: evidence from chinese stock market. *Journal of International Accounting Research*, jiar-52216. <https://doi.org/10.2308/jiar-52216>
- Hribar, P., & Jenkins, N. T. (2004). The effect of accounting restatements on earnings revisions and the estimated cost of capital. *Review of Accounting Studies*, 9(2/3), 337–356. <https://doi.org/10.1023/B:RAST.0000028194.11371.42>
- Huang, H., Wang, Q., & Zhang, X. (2009). The effect of CEO ownership and shareholder rights on cost of equity capital. *Corporate Governance: The International Journal of Business in Society*, 9(3), 255–270. <https://doi.org/10.1108/14720700910964325>
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305–360. Retrieved from <http://ssrn.com/abstract=94043http://hupress.harvard.edu/catalog/JENTHF.html>
- Kim, J.-B., & Shi, H. (2012). IFRS reporting, firm-specific information flows, and institutional environments:

- international evidence. *Review of Accounting Studies*, 17(3). Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2184709
- Kopecká, N. (2016). The IFRS 8 segment reporting disclosure: evidence on the czech listed companies. *European Financial and Accounting Journal*, 11(2), 5–20. <https://doi.org/10.18267/j.efaj.154>
- Krismiaji, Aryani, Y. A., & Suhardjanto, D. (2016). International financial reporting standards, board governance, and accounting quality. *Asian Review of Accounting*, 24(4), 474–497. <https://doi.org/10.1108/ARA-06-2014-0064>
- Lambert, R., Leuz, C., & Verrecchia, R. E. (2007). Accounting information, disclosure, and the cost of capital. *Journal of Accounting Research*, 45, 385–420. <https://doi.org/10.2307/4622036>
- Leuz, C., & Verrecchia, R. E. (2000). The economic consequences of increased disclosure. *Journal of Accounting Research*, 38, 91. <https://doi.org/10.2307/2672910>
- Leuz, C., & Verrecchia, R. E. (2005). *Firms' capital allocation choices, information quality, and the cost of capital*. University of Pennsylvania. <https://doi.org/10.2139/ssrn.495363>
- Li, S. (2010). Does mandatory adoption of international financial reporting standards in the European union reduce the cost of equity capital? *The Accounting Review*, 85(2), 607–636. <https://doi.org/10.2307/20744143>
- Li, Y., Stokes, D. J., Taylor, S. L., & Wong, L. (2009). Audit quality, accounting attributes and the cost of equity capital. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.1481823>
- O'Hara, M. (2003). Presidential address: liquidity and price discovery. *The Journal of Finance*, 58(4), 1335–1354. <https://doi.org/10.1111/1540-6261.00569>
- Ohlson, J. A., & Juettner-Nauroth, B. E. (2005). Expected EPS and EPS growth as determinantsof value. *Review of Accounting Studies*, 10(2–3), 349–365. <https://doi.org/10.1007/s11142-005-1535-3>
- Pham, P. K., Suchard, J.-A., & Zein, J. (2012). Corporate governance and the cost of capital: evidence from Australian companies. *Journal of Applied Corporate Finance*, 24(3), 84–93. <https://doi.org/10.1111/j.1745-6622.2012.00392.x>
- Scott, W. R. (2015). *Financial accounting theory* (4th ed.). Canada: Person Education.
- Shah, S. Z. A., & Butt, S. A. (2009). The impact of corporate governance on the cost of equity: empirical evidence from pakistani listed companies. *Lahore Journal of Economics*, 14(1), 139–171. Retrieved from <https://ideas.repec.org/a/lje/journal/v14y2009i1p139-171.html>
- Shleifer, A., & Vishny, R. W. (1986). Large shareholders and corporate control. *Journal of Political Economy*, 94(3), 461–488. <https://doi.org/10.2307/1833044>
- Skaife, H. A., Collins, D. W., & LaFond, R. (2004). *Corporate governance and the cost of equity capital*. University of Iowa. <https://doi.org/10.2139/ssrn.639681>
- Stinson, S. R., & Ricketts, R. C. (2016). Shifts in ownership composition and changes in the implied cost of equity capital for dividend and non-dividend stocks following JGTRRA03. *The Journal of the American Taxation Association*, 38(1), 103–124. <https://doi.org/10.2308/atax-51302>
- Tehrani, H., Cornett, M. M., Marcus, A. J., & Saunders, A. (2006). Earnings management, corporate governance, and true financial performance. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.886142>
- Verrecchia, R. E. (2001). Essays on disclosure. *Journal of Accounting and Economics*, 32(1–3), 97–180. [https://doi.org/10.1016/S0165-4101\(01\)00025-8](https://doi.org/10.1016/S0165-4101(01)00025-8)
- Xu, L., & Tang, A. P. (2015). Internal control material weakness, analysts accuracy and bias, and brokerage reputation. In *Handbook of Financial Econometrics and Statistics* (pp. 1719–1751). https://doi.org/10.1007/978-1-4614-7750-1_63