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The Effect of Voluntary Disclosure and Earnings Quality on Cost of Equity

Ardiansyah
Faculty of Economics, Universitas Indonesia, ardie_sum41@yahoo.com
Sylvia Veronica Siregar
Faculty of Economics, Universitas Indonesia, sylvia.veronica@ui.ac.id

Abstract

The objective of this research is to examine the level and effect of voluntary disclosure and the earnings quality on cost of equity capital of listed manufacturing company in Indonesian Stock Exchange in 2008. This study uses secondary data from the annual reports of 75 manufacturing firms listed in Indonesia Stock Exchange (IDX) in 2008. We use multiple regressions to test hypotheses. We find that the average of voluntary disclosure is only 29.7%, which indicates that firms' disclosure in the annual report is still low. The result also shows that the level of voluntary disclosure, in contrary to expectation, has positive and significant effect on cost of equity capital. We find some evidences that earnings quality can reduce cost of equity capital.

Abstrak

Tujuan penelitian ini adalah untuk menganalisis pengaruh tingkat pengungkapan sukarela dan kualitas laba terhadap cost of equity capital pada perusahaan manufaktur yang terdaftar di Bursa Efek Indonesia tahun 2008. Penelitian ini dilakukan pada 75 perusahaan yang menjadi sampel penelitian. Hipotesis penelitian diuji menggunakan regresi linier berganda. Hasil penilaian atas indeks pengungkapan sukarela menunjukkan rata-rata indeks pengungkapan sukarela hanya 29.7% sehingga dapat disimpulkan bahwa tingkat pengungkapan sukarela dalam laporan tahunan perusahaan masih rendah. Hasil penelitian menunjukkan bahwa tingkat pengungkapan sukarela, berbeda dengan dugaan, mempunyai pengaruh positif signifikan terhadap biaya modal ekuitas. Ditemukan juga bukti bahwa kualitas laba dapat menurunkan biaya modal ekuitas.

Keywords: Voluntary disclosure, earnings quality, cost of equity capital

JEL Classification: G32, G34

1. Research Background

Information on financial statements and annual reports are the important sources of information for the parties outside the company in the decision making process. The extent to which information can be obtained by shareholders depends on the extent of firms' transparency and disclosure. In 2006, Bapepam-LK had issued guidance about information that must be disclosed on annual reports. The information disclosed in annual reports should follow this mandatory disclosure and may also include additional voluntary disclosure.

Nuryaman (2009) suggests that disclosure of information will provide a stimulus for economic growth as the effect of capital market efficiency. Several studies also conclude that voluntary disclosure is useful to reduce the information gap in the capital market so that investors believe the shares in the capital market transactions are traded at reasonable price. This investors' confidence will then be followed by an increase in stock liquidity (Jiambalvo, 1996) and decrease in cost of equity capital (Botosan, 1997). Cost of

equity capital is associated with investment risk in the company's stock. Low level of disclosure usually causes a high risk premium information and higher disclosure which will cause a lower risk premium. Previous studies have examined the relationship between voluntary disclosure on the cost of equity capital, including Botosan (1997), Khomsiyah and Susanti (2003), Juniarti and Yunita (2003), Maysar (2008), and Francis et al (2008) who find negative relationship between level of disclosure and the cost of equity capital.

Earnings are important for users of financial statements, especially those who use financial statements for the purpose of contract and investment decision making. In the perspective of investment decision making, earnings are the important information for investors to comprehend the quality of earnings to reduce the risk of information. On the other hand, management has the discretion regarding accounting policies in the preparation of financial statements, which can be used to achieve certain objectives. This discretion can be used as earnings management tool. According to Scott (2012), earnings management is the choice by a manager of accounting choice, or actions affecting earnings, so as to achieve some specific reported earnings objective.

The existence of opportunistic earnings management practices indicates a low quality of earnings. Dechow et al. (1996) finds firms sanctioned by the SEC (Securities Exchange Commission) due to alleged earnings manipulation has higher cost of capital. Utami (2005) also finds that higher levels of earnings management (measured by discretionary accruals) are also related to higher cost of equity capital. There are several cases of opportunistic earnings management in Indonesia; for example, misstated financial statements of PT Kimia Farma Tbk. and PT Indofarma Tbk.

Management usually uses accruals to manage earnings, hence several studies use accruals quality to measure earnings quality. Francis et al. (2005) find that lower accruals quality is associated with higher cost of equity capital. Furthermore, Francis et al. (2008) use four proxies to measure the quality of earnings: accruals quality, earnings variability, absolute abnormal accruals, and the common factor of all those three earnings quality proxies. They conclude that higher earnings quality reduces the cost of equity capital.

This study is intended to extend Francis et al (2008) to Indonesian etting. Based on literature review, there are no studies in Indonesia that include both voluntary disclosure and earnings quality and examine the effect on cost of equity, and also use several measures of earnings quality simultaneously. We use several proxies to measure earnings quality in order to generalize our results and reduce measurement error (Chen et al., 2011).

According to Strobl (2008), the extent of earnings manipulation is related to the state of the economy. This relationship is determined by the firm's earnings profile. He suggests that firms whose earnings are more strongly correlated with the market during periods of economic expansion have a stronger incentive to overstate earnings during periods of recession, and vice versa. The reason behind this is that a low correlation with the market makes it more difficult for investors to gather information about the firm's earnings from other sources (such as accounting statements released by other firms). It means that the firm's reported earnings have a greater effect on its stock price. A favorable earnings number leads to a significantly higher price. Thus, the managers benefit most from overstating firm's performance. On the other hand, if the firm's earnings have high correlation with the market, investors gain little additional information from the firm's report and the manager has therefore little incentive to manipulate firm's performance. There is also empirical evidence from the 1997 Asian financial crisis and non crisis period that provides some evidences that managers engaged in more earnings management during the crisis period (Saleh and Ahmed, 2005; Ahmed et al., 2008). There is still limited study examining level of voluntary disclosure as well as the effect of voluntary disclosure and earnings quality on cost of equity during 2008 global financial crisis.

We choose only one industry, following Botosan (1997) argument to limit the sample to one year and one industry to maximize statistical power. Botosan (1997) argues that different industries display different patterns of disclosure. Using different disclosure measures for firms in different industries necessitates a within industry analysis, which results in smaller intra-industry samples. Hence, this study chooses to select firms in one industry for which the same disclosure measure is expected to be appropriate.

2. Research Methods

The sample of this manufacturing firms study are listed in Indonesia Stock Exchange in year 2008. This study limits the analysis to one year because according to Botosan (1997) firms' disclosure policies appear to remain relatively constant over time. Hence, this study chooses to increase sample size by adding cross-section observations instead of increasing observations over time. Year 2008 is chosen because there was global financial crisis during that year. The motivation for this is based on the observation that most of the extant literature on the effect of voluntary disclosure and earnings quality on cost of equity are in non crisis period.

We develop following research models to test above hypotheses[1]:

$$COE_t = \alpha_0 + \alpha_1 DISCL_t + \alpha_2 ACCRQ_t + \alpha_3 EARNV + \alpha_4 ABNAC_t + \alpha_6 SIZE_t + \alpha_7 BM_t + \varepsilon_t \quad (1)$$

$$COE_t = \alpha_0 + \alpha_1 DISCL_t + \alpha_5 FACTOR_t + \alpha_6 SIZE_t + \alpha_7 BM_t + \varepsilon_t \quad (2)$$

Cost of Equity Capital (COE)

Cost of equity capital is measured using CAPM (Capital Asset Pricing Model). Botosan (1997) and several other studies suggest EBO residual income model (Edward Bell Ohlson) is better to estimate the cost of capital. We do not use this method due to unavailable data regarding earnings forecast. CAPM is calculated using the formula below:

$$COE = Rft + \beta\ RP \quad (3)$$

COE : cost of equity capital
Rf : risk free rate (average interest rate of SBI from January to December 2008)
Rp: risk premium, obtained from www.damodaran.com (accessed on February 6, 2010)
β : beta is obtained using market model by regressing firms stock returns with market return (using weekly return from January to December 2008)

Voluntary Disclosure (DISCL)

Checklist to calculate voluntary disclosures in annual reports is developed based on Widyastuti (2010), Nuryaman (2009), Francis et al. (2008), Botosan (1997), Meek et al. (1995), Chow and Wong- Boren (1987), Buzby (1975), Singhvi and Desai (1971). This checklist is then compared to the list of mandatory disclosures based on Decree of the Chairman of the Capital Market Supervisory Agency and Financial Institution Number: KEP-134/BL/2006 December 7, 2006. These mandatory disclosures are excluded from the checklist.

Disclosed items are scored 1, and 0 if not disclosed. DISCL is calculated as follows:

$$DISCL = \frac{\sum Q}{\sum S} x100\% \quad (4)$$

DISCL : voluntary disclosure

[1] We use 2 research models which separate FACTOR from other variables of earnings quality, because of multicollinearity between those variables.

Q: total of disclosed items
S: total of items in checklist

Earnings Quality

Following Francis et al(2008), we use four earnings quality proxies: accrual quality (ACCRQ), earnings variability (EARNV), absolute abnormal accruals (ABNACCR), and common factor from those three proxies (FACTOR).

The first measurement of Accruals Quality (ACCRQ) is calculated with the formula as follows:

$$TAC_{j,t} = a_0 + a_1\, CFO_{j,t-1} + a_2\, CFO_{j,t} + a_3\, CFO_{j,t+1} + a_4\, \Delta REV_{j,t} + a_5\, PPE_{j,t} + v_{j,t} \quad (5)$$

TAC : Total current accrual
CFO : Cash flows from operating activities
ΔREV : Changes in revenue
PPE : Gross property, plant, and equipment

All variables are deflated by average total assets in year t. Accruals quality is measured by standard deviation of residual values ($v_{j,t}$) for 5 years (2004-2008).

The second measurement earnings variability (EARNVAR) is measured by standard deviation of net income before extraordinary items are divided by total assets for 5 years (2004-2008). Higher earnings variability indicates lower earnings quality.

The third measurement is absolute value of abnormal accruals (ABNAC) calculated using modified Jones (1991) model:

$$\frac{TAj,t}{Assetjt-1} = \kappa 1 \frac{1}{Assetjt-1} + \kappa 2 \frac{\Delta Revj,t}{Assetjt-1} + \kappa 3 \frac{PPEjt}{Assetjt-1} + \varepsilon\, j,t \quad (6)$$

We use average value of absolute abnormal accruals for 5 years (2004 to 2008).

The last measure of earnings quality is Common Factor [Earning Quality] (FACTOR) based on above earnings quality proxies. Higher value of the common factor (earnings quality) indicates lower quality of earnings.

2.1. Sample Selection and Data Collection

Samples for this study are selected based on the following criteria: 1) firms in manufacturing industry, 2) never delisted during 2003-2009, 3) actively traded, 4) have 2008 annual report, and 5) all data needed for this research are available. Based on the sample selection criteria, the results of sample selection process are presented in Table 1.

Table 1. Sample Selection Process

Criteria	Total
Firms listed in Indonesia Stock Exchange in 2008	399
Non-manufacturing firms	(260)
Total manufacturing firms	139
Annual report not available	(27)
Delisted	(1)
Inactive trading	(22)
Incomplete data	(14)
Total sample	75

This study uses secondary data of annual report, annual financial statements, daily stock price, market index, and SBI rate, collected from PRPM (Pusat Referensi Pasar Modal) Bursa Efek Indonesia, Fact Book, companies' website, www.yahoo.com/finance, and www.bi.go.id.

3. Result and Discussion

Table 2 presents descriptive statistics for variables used in this study. Average cost of equity capital is 0.197. The average level of voluntary disclosure is still low (only 29,7%). Proxy for earnings quality in this study uses the Accrual Quality, Earnings Variability, Absolute Abnormal Accrual, and Common Factors of the three earnings quality proxies. There is considerable variation in earnings quality (based on standard deviation), especially on common factor measures. This indicates that the level of earnings quality in our samples is quite vary. Table 3 presents descriptive statistics of each voluntary disclosure category.

Table 2. Descriptive Statistics

Variable	Maximum	Minimum	Mean	Median	Std. Deviation
COE	0.230	0.184	0.197	0.194	0.011
DISCL	0.573	0.053	0.297	0.280	0.120
ACCRQ	0.289	0.011	0.081	0.060	0.072
EARNV	0.472	0.002	0.075	0.040	0.109
ABNAC	0.490	0.059	0.195	0.159	0.102
FACTOR	2.899	-1.027	-0.018	-0.363	0.937
SIZE (Rp million)	59,514	9	3,203.93	320	9,694.43
BM	5.748	-2.770	1.427	1.186	1.477

Note: COE: cost of equity capital, DISCL: voluntary disclosure, ACCRQ: accruals quality, EARNV: earnings variability, ABNAC: absolute abnormal accrual, FACTOR: common factor [earnings quality], SIZE: market capitalization, BM: book-to-market.

Based on Table 3, we can see that there is a minimum score of 0 of non-financial highlight, management's discussion and analysis of financial performance, employee information, research and development activities, as well as value-added reporting. These findings suggest that there is a tendency not to disclose firm's information related to those items. Firms may have consideration not to disclose certain types of information because they think the benefit from disclosure is not greater than cost incurred. In addition, management may want to keep confidential information from its competitors, if it was disclosed, it could weakened firm's position in business competition. On the other hand, category of general information has the highest score compared to other categories. Below is the analysis of each category of voluntary disclosures:

3.1. General Information

With the average score of 45%, this category is the first, i.e. has the highest score. In this category, the disclosure item of the description of actions taken in this year to achieve company's goals has the highest score (96%) compared to any other items. This item can be used by the company to show their stakeholders that firms have done many things to achieve companies' goals. In this category, item of disclosure/description of the objective and strategy related to social aspects of corporate strategy has the lowest score than other disclosures. Firms are still paying little attention on social aspects of corporate strategy. This also indicates that firms' social awareness is still very low.

Table 3. Descriptive Statistics of Voluntary Disclosure Categories

Voluntary Disclosure Categories	Maximum	Minimum	Range	Mean
General Information	0,96	0,09	0,87	0,45
Non Financial Highlights	0,79	0,00	0,79	0,16
Management's Discussion and Analysis of Financial Performance	0,40	0,00	0,40	0,22
Information About Business Projections and Prospects	0,65	0,03	0,63	0,26
Employee Information	0,59	0,00	0,59	0,19
Corporate Governance Information	0,63	0,01	0,61	0,27
Research and Development Activities	0,28	0,00	0,28	0,12
Capital Market Data	0,91	0,01	0,89	0,43
Value-added reporting	0,36	0,00	0,36	0,22

3.2. Non Financial Highlights

The average score of non-financial disclosure is only 16%. This shows the companies' awareness to disclose information about non-financial summary is still low. Explanation regarding impact of inflation on the results of the present and or future has the highest score of 79%. This information may be disclosed so that investors can analyze firms' performance by also considering the effect of inflation on performance. In this category, the disclosure items of this year's new orders numbers are not disclosed at all. It may indicate that firms do not think this information as an important thing or disclosure of new order can disclose confidential information to firms' competitors.

3.3. Management Discussion and Analysis of Financial Performance

Average score for this category is 22%, and the highest score is for item distribution description (description of firm's marketing network of goods and services). This information is revealed the most because firms will want to demonstrate to investors that they have marketing network of goods and services that play an important role in achieving corporate revenue target. The existence of marketing network may also indicate that firms have a vast market for their products and services. In this category, there is a disclosure item that no firm discloses it, which is the information about costs into fixed and variable components. Firms may not have such information available in their accounting information system or firms want to keep it confidential from their competitors.

3.4. Information about Projections and Business Prospects

This category has an average score of 26%. Items of technological factors affecting business in the future have the highest score of 65%. This item is disclosed to demonstrate that technology is one important factor for the company. In this information age, technology is very important for firms' survival. It will also provide firms additional advantage to compete with competitors. Disclosure with the lowest score is projection of net income in the future (in the segment information) (for companies with multi-segment, the disclosure is for each segment) of only 3%. Firms are usually reluctant to disclose information about projection, because failure to achieve this projection will trigger investors' negative reaction.

3.5.Employee Information

For this category, the average score is only 19%. Information regarding employee relationship with firm has the highest score of 59%. This is one of the informations that firm would like to disclose to show investors that keeping good relationship with its employees is an important matter. While items of details of employees by geographic area are not disclosed by all firms, some firms do disclose information of employees by line of

business (33%). This indicates that firms are more concerned with the disclosure of employees by line of business, instead of by geographic area.

3.6. Information and Corporate Governance

With the average score of 27%, this category is ranked third of the highest score. Statement on product standards or regulations related to products has the highest score of 63%. This is because the company wants to demonstrate to investors that the standard of a product that follows is one important factor for successful sales of products. Standards will indicate the quality of a product itself. By having products that have already followed the standards will help firms to increase their sales volume. In this category, the lowest score is the statement about the obligations of shareholders.

3.7. Research and Development Activities

Score of items related to firm's policy on R & D activities is the highest (28%). Benefits of disclosure of research and development can help companies to manage outsiders' expectations, especially investors, about the firm's performance in the future. This information may convince investors that firms consider R&D as an important strategy and able to engage in many research and development carried out which will result in profit, revealing many research and development work, comply with such restrictions and can cause an accurate stock price. In this category, there is a disclosure item that is not disclosed at all (forecast expenditure for R & D activities). This is because firms do not want to let their competitors know their planned R&D activities.

3.8. Capital Market Data

Average for category capital market data is the second highest (43%). In this category, the highest score is for percentage of institutional shareholders (both institutional domestic and foreign), which is 91%. The presence of high institutional ownership may provide a signal to investors regarding firms' strong external control. According to the Daily and Dollinger (1992), a company owned by institutional tends to be larger in size and lower bankruptcy rates than the family-controlled firm. Disclosure of percentage of family shareholders has the lowest score of 0.01 because the company may know that there is a negative view of investors if a company is mostly owned by the family.

3.9. Value-Added Reporting

Average score for this category is only 22%. Disclosure with highest score in this category is for statements regarding the firm's policy on value-added of 36%. With the rapid change in the business world, there is also a change in the company, which has become a value-oriented and no longer as a profit-oriented. Firms want to demonstrate to investors that the company's policies will maximize the value of the firm. In this category, there is a disclosure item which is not disclosed (ratio of value added or value-added statement). It is probably because this type of ratio and statement is not a familiar concept to the firm.

Table 4 presents descriptive statistics of voluntary disclosure of firms in each sub industry of manufacturing industry. Highest level of voluntary disclosure is in Automotive and Components (57.3%), while the lowest is in sub industry Textile Garment of 5.3%. Although the highest level of voluntary disclosure is in Automotive and Component, the highest average is in Tobacco Manufacturer, which consists of two samples of big firms (Bentoel International Investama and HM Sampoerna Tbk) with high level of voluntary disclosure. Comparing the average in each industry to total average of all samples of 30.6%, there are 9 sub industries with scores below average. These are Ceramic, Glass, Porcelain, Metal and Allied Products, Chemical, Plastic and Packaging; Animal Feed, Pulp and Paper, Textile Garment, Food and Beverages; and Houseware.

Table 4. Descriptive Statistics of Voluntary Disclosure for Each Sub Industry

Sub Industry	N	Maximum	Minimum	Range	Mean
Cement	3	0.507	0.387	0.120	0.431
Ceramics, Glass, Porcelain	3	0.347	0.213	0.133	0.284
Metal and Allied Product	7	0.320	0.147	0.173	0.223
Chemicals	6	0.413	0.133	0.280	0.258
Plastics &Packaging	5	0.280	0.147	0.133	0.221
Animal Feed	3	0.347	0.147	0.200	0.253
Wood Industries	2	0.387	0.360	0.027	0.373
Pulp & Papper	3	0.360	0.160	0.200	0.244
Automotive and Components	8	0.573	0.173	0.400	0.317
Textile Garment	9	0.373	0.053	0.320	0.240
Food and Beverages	11	0.533	0.147	0.387	0.303
Tobacco Manufacturer	2	0.507	0.507	0.000	0.507
Pharmaceuticals	6	0.507	0.120	0.387	0.396
Cosmetisc and Household	2	0.520	0.240	0.280	0.380
Houseware	3	0.387	0.147	0.240	0.293

Regression results are presented in Table 5. Based on result in Table 5[2], adjusted R Square of model 1 is 24%, while adjusted R Square of model 2 is slightly higher (25.6%). Both models are highly significant at 1%. It means that significant proportion of variance in the dependent variable is explained by the linear combination of the independent variables, i.e. the model is fit.

Model 1 and model 2 are only different in terms of earnings quality measure. Model 2 uses only one measure, which is a common factor [earning quality], whereas Model 1 includes 3 individual measures of earnings quality. Higher adjusted R Square of Model 2 indicates that earnings quality measured using common factor is a better measure of earnings quality to test the effect of earnings quality on cost of equity capital.

Results in Table 5 for model 1 show that, contrary to our prediction, the level of voluntary disclosure has significant positive effect on cost of equity capital (hypothesis 1 is not accepted). Although firms already provide voluntary information this does not lower the cost of equity capital, but instead it increase cost of equity capital. This result is different from previous studies (Botosan, 1997; Komalasari and Baridwan, 2001; Juniarti and Yunita, 2003; Khomsiyah and Susanti, 2003; Maysar, 2008) which find negative and significant relationship between voluntary disclosure and cost of equity capital.

[2] This model has satisfied OLS classical assumption (homoscedasticity, no multicollinearity, no autocorrelation)

Table 5. Regression Results

Variable	Model 1			Model 2		
	Coef.	t-stat	Sig	Coef.	t-stat	Sig
C	0.153	14.739	0.000***	0.159	16.628	0.000***
DISCL	0.023	1.861	0.034**	0.026	2.300	0.012**
FACTOR				0.004	2.913	0.003***
ACCRQ	0.034	1.310	0.097*			
EARNV	0.011	0.895	0.374			
ABNAC	0.001	0.092	0.927			
SIZE	0.002	2.701	0.005***	0.002	2.646	0.005***
BM	0.003	3.386	0.000***	0.003	3.363	0.000***
F-Stat	4.899			7.369		
Sig	0.000***			0.000***		
Adj. R Square	0.240			0.256		

COE: cost of equity capital, DISCL: voluntary disclosure, ACCRQ: accruals quality, EARNV: earnings variability, ABNAC: absolute abnormal accrual, FACTOR: common factor [earnings quality], SIZE: market capitalization, BM: book-to-market.

*** Significant at 1%, ** Significant at 5%, * Significant at 10%

Investors may find that it is difficult to obtain truly significant information among the volumious of information in the annual report. Miller (2010) find that more complex filings (i.e. longer and less readable) are associated with lower overall investors' trading. More disclosure may not necessarily aid investors if it is more costly for them to extract useful information from the larger and more complex disclosures (Bloomfield, 2002 in Miller, 2010). In addition expanded disclosure might enable investors to analyze firm more comprehensive and based on that evaluation they may conclude that firm is riskier. The complexity (length and readability) and extended disclosure may drive the investors to ask for higher return and this will increase cost of equity capital.

This positive relationship may also due to the global financial crisis in year 2008. Choi et al. (2011) study the Asian financial crisis in nine Asian countries (Hong Kong, Indonesia, Japan, Korea, Malaysia, the Philippines, Singapore, Taiwan, and Thailand) and they find the increased use of opportunistic earnings management. Management might increase voluntary disclosure to conceal this opportunistic earnings management. Baginski et al. (2011) suggest that "incentives to engage in quality voluntary disclosure while committing fraud remain strong."

The results in Table 5 show that accruals quality in model 1 and common factor variables [earnings quality] in model 2 has significant and positive effect on cost of equity capital (hypothesis 2 is not rejected), which means that lower earnings quality will increase firm's cost of equity capital. This finding is consistent with previous studies. Gode and Mohanram (2001) use earnings variance as an inverse measure of earnings quality, and find that higher earnings variance result in higher cost of equity capital. Francis et al. (2005) find that firms with poor accruals quality have higher cost of equity. Aboody et al. (2005) and Francis et al. (2008) also find that earnings quality has negative relationship with cost of equity capital. In Indonesia, Utami (2005) also find evidence that earnings management has a positive effect on the cost of equity capital.

Subramanyam (1996) argue that earnings is a measure of firm performance, usually used as an input for users of financial statement for decision making. Due to agency conflict, management may be motivated to engage in opportunistic earnings management to maximize his/her utility. Opportunistic earnings management will bias reported earnings. Investors may have foresee this earnings misreporting and consider that condition as information risk. Less informed investors (due to lower earnings quality) will perceived

higher risk of information compared to more informed investor. Higher information risk will increase investors' required rate of return and eventually increase cost of equity capital.

Results also show that variable earnings variability and absolute abnormal accruals do not have significant impact on cost of equity capital (hypotheses 2b and 2c is rejected). Based on this results, we conclude that it might be better to measure earnings quality using accruals quality or the combination of several earnings quality variables such as captured in common factor [earnings quality].

Market capitalization (SIZE) also has significant positive effect on cost of equity capital. This finding is not consistent with Botosan (1997) which find negative association of market capitalization and cost of equity capital. Larger companies are more complex than smaller ones. This complexity may increase company risk, which resulted in higher cost of equity capital. Book-to-market has significant and positive impact on cost of equity capital, consistent with Francis et al(2008).

For sensitivity analysis, we re-run the model by including only one measure of earnings quality. From Table 6 we can see that the adjusted R square of 3 models in this sensitivity analysis is lower than that of Model 2. Compare to Model 1 in the main analysis, only Model 4 in the sensitivity analysis has higher adjusted R square. This findings indicate that earnings quality measured using common factor is the better measure and among 3 individual earnings quality measures the accrual quality is the finer measure.

The results in Table 6 show consistent result with main models. Disclosure has significant positive effect on cost of equity capital. Each measure of earnings quality (accruals quality, earnings variability, and absolute abnormal accruals) has significant and positive effect on cost of equity capital. This result suggests that higher earnings quality reduce cost of equity capital.

Table 6. Sensitivity Results

	Model 4			Model 5			Model 6		
	Koef.	**t-stat**	**Sig**	**Koef.**	**t-stat**	**Sig**	**Koef.**	**t-stat**	**Sig**
C	0.153	14.842	0.000***	0.159	16.258	0.000***	0.159	15.780	0.000***
DISCL	0.021	1.894	0.031**	0.024	2.123	0.014**	0.029	2.065	0.009***
ACCRQ	0.047	2.851	0.003*						
EARNV				0.023	2.469	0.008***			
ABNAC							0.024	2.109	0.022**
SIZE	0.002	2.912	0.003*	0.002	2.505	0.008***	0.002	2.109	0.020**
BM	0.003	3.394	0.001*	0.003	3.098	0.002***	0.003	2.945	0.002***
F-Stat	7.257			6.613			6.033		
Sig	0.000***			0.000***			0.000***		
Adj. R Square	0.253			0.233			0.214		

COE: cost of equity capital, DISCL: voluntary disclosure, EARNQ: earnings quality (ACCRQ: accruals quality, EARNV: earnings variability, ABNAC: absolute abnormal accrual), SIZE: market capitalization, BM: book-to-market.

Sensitivity Analysis:

$COE_i = \alpha_0 + \alpha_1 DISCL_i + \alpha_2 ACCRQ_i + \alpha_6 SIZE_i + \alpha_7 BM_i + \varepsilon_i$ (Model 4)

$COE_i = \alpha_0 + \alpha_1 DISCL_i + \alpha_3 EARNQ_i + \alpha_6 SIZE_i + \alpha_7 BM_i + \varepsilon_i$ (Model 5)

$COE_i = \alpha_0 + \alpha_1 DISCL_i + \alpha_4 ABNAC_i + \alpha_6 SIZE_i + \alpha_7 BM_i + \varepsilon_i$ (Model 6)

*** Significant at 1%, ** Significant at 5%, * Significant at 10%

We also perform sensitivity analysis to examine the effect of each category of voluntary disclosure on cost of equity capital **(Table 7).**

Only corporate governance information category has significant positive effect on cost of equity capital whereas other categories do not have a significant impact. Firms, which provide expanded information on corporate governance, have higher cost of equity capital. This finding maybe due to investors perceived firms still does not implement good corporate governance, i.e. the implementation is only for

regulation compliance. Investors may see extended disclosure on corporate governance as an indication of increases in cost, and it does not have positive impact on firm's profitability and value. As a result investors required higher cost of equity capital.

Tabel 7. Results of Disclosure Categories

	DISCL - A		DISCL – B		DISCL – C		DISCL - D		DISCL - E		DISCL - F		DISCL - G		DISCL - H		VD – I	
	Coef.	**Sig**	**Coef.**	**Sig**	**Coef.**	**Sig**	**Coef.**	**Sig**	**Coef.**	**Sig**	**Coef.**	**Sig**	**Coef.**	**Sig**	**Coef.**	**Sig**	**Coef.**	**Sig**
Constant	0.149	0.000*	0.150	0.000*	0.149	0.000*	0.151	0.000*	0.151	0.000*	0.152	0.000*	0.149	0.000*	0.147	0.000*	0.148	0.000*
DISCL	0.060	0.123	0.056	0.538	0.038	0.760	0.057	0.302	0.069	0.138	0.075	0.039*	-0.030	0.798	0.142	0.287	-0.036	0.783
ACCRQ	0.027	0.308	0.029	0.294	0.031	0.272	0.029	0.274	0.027	0.312	0.023	0.373	0.034	0.203	0.036	0.173	0.034	0.204
EARNV	0.019	0.188	0.020	0.185	0.019	0.210	0.018	0.222	0.020	0.175	0.019	0.192	0.019	0.216	0.017	0.240	0.019	0.215
ABNAC	0.002	0.909	0.000	0.955	-0.002	0.921	0.002	0.924	0.000	0.986	0.001	0.965	-0.004	0.785	-0.004	0.786	-0.04	0.799
SIZE	0.003	0.001*	0.003	0.000*	0.003	0.000*	0.003	0.001*	0.003	0.001*	0.003	0.001*	0.003	0.000*	0.003	0.000*	0.003	0.000*
BM	0.004	0.000*	0.003	0.001*	0.004	0.000*	0.003	0.001*	0.003	0.001*	0.003	0.001*	0.003	0.000*	0.003	0.001*	0.004	0.000*
F-Stat	4.551		4.088		4.023		4.245		4.515		5.004		4.016		4.261		4.019	
Sig	0.001*		0.001*		0.002*		0.001*		0.001*		0.000*		0.002*		0.001*		0.002*	
Adj. R Square	0.224		0.200		0.197		0.208		0.222		0.245		0.262		0.273		0.262	

DISCL – A: general information; DISCL – B: non financial highlights; DISCL – C: management discussion and analysis of financial performance; DISCL – D: information about projections and business prospects; DISCL – E: employee information; DISCL – F: information and corporate governance; DISCL – G: research and development activities; DISCL – H: capital market data; DISCL – I: value-added reporting.

4. Conclusion

We find that voluntary disclosures in annual reports of manufacturing firms in 2008 is still very low. On average, voluntary disclosure level is only 29.7%. Highest score is in category of general information of 45%. There are several categories that are not disclosed at all, which are non-financial highlights, management discussion and analysis of financial performance, employee information, research and development activities, and value-added reporting. Management needs to assess their current level of voluntary disclosure, and decide which catagory they should add additional voluntary information, that can help investors to better understand and assess the company.

Contrary to our prediction, we do not find significant negative effect of voluntary disclosures on cost of equity capital. We even find evidence of positive relationship. This finding is different from Botosan (1997), Komalasari and Baridwan (2001), Juniarti and Yunita (2003), Khomsiyah and Susanti (2003), and Maysar (2008), which find significant negative association between voluntary disclosure and cost of equity capital.

This positive relationship may occur due to investors may find that it is difficult to obtain truly significant information among the volumious of information in the annual report or more extensive disclosures could be used by investors to conduct more comprehensive evaluation of the company, which enable them to asses firms' risks better. These arguments might explain why investors charge higher cost of equity capital for increased voluntary disclosure. We also find that only corporate governance information category of voluntary disclosure that has positive and significant effect on cost of capital. Other categories of voluntary disclosure do not have significant effect.

There are evidences that earning quality has significant positive influence on cost of equity capital, if we use common factor [earnings quality] and accruals quality as earnings quality measures. This indicates that lower earnings quality results in higher cost of equity capital. This finding is consistent with previous studies (Gode and Mohanram, 2001; Francis et al, 2005; Aboody, Hughes, and Liu, 2005; Utami, 2005; Francis, Nanda, and Olsson, 2008), which also find that earnings quality has negative relationship with cost of equity capital.

Management may be motivated to engage in opportunistic earnings management to maximize his/her utility. Investors may have foresee this earnings misreporting and consider it as information risk. Less informed investors will perceived higher risk of information compared to more informed investor. This higher information risk will increase investors' required rate of return and eventually increase cost of equity capital.

This study has several limitations as follows: 1) Voluntary disclosure assessment is not on the basis of the degree of detail of information disclosed by samples. Firms will get the same score if they reveals certain information specified in the instrument, even though the degree of detailed of information varies; 2) Earnings quality proxy used in this study is limited to accrual quality, earnings variability, absolute abnormal accruals, and the common factor [earnings quality]. There are other earnings quality proxies that can be used to measure earnings quality such as ERC (Earnings Response Coefficient), earnings persistence, earnings smoothing, and timeliness; 3) To estimate cost of equity capital we use CAPM (Capital Asset Pricing Model). According to Botosan (1997), this method has weaknesses. Botosan (1997) argues that EBO (Edwards and Bell, Feltham and Ohlson) model is better. We do not use this model due to the unavailability of data as input of this model.

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