

## **The Influence of Accounting Informational Relevance towards the Sensitivity of Efficient Capital Investment**

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### **ABSTRACT**

Prior research shows that accounting information quality is positively related to investment efficiency. The purpose of this paper is to study the relationship between accounting information quality and investment efficiency in Indonesia. Based on Dechow and Dichev's (2002) earnings quality measure, I expect that the investment efficiency is stronger when firms have higher earnings quality. Research conducted on 90 listed manufactured companies in Indonesia Stock Exchange, selected through purposive sampling technique that is consistent with the criteria listed there since 2006 until 2010, and also has a comprehensive financial reporting data. The evidence is consistent with the hypothesis that high accounting quality provides more investment efficiency.

**Keywords:** Accounting information, earnings quality, investment efficiency

### **INTRODUCTION**

One of the aims of financial reports is to facilitate the allocation of efficient capital investment. The important aspect of this role is to increase the company's investment decision. Corporate investment is the trigger which pushes the value making inside the economy. Financial information is a crucial matter in efficient capital allocation. Accounting system is source of information for managers to identify and decide which investment is good and which investment is bad. The high quality accounting information will increase the efficiency with giving useful information which enables the managers to identify the chance of value making with minimal errors (Bushman and Smith 2001). Specifically this theory stated that the increase of financial transparency has the potential to reduce investment problem and several studies are actually supporting this prediction (Biddle and Hilary, 2006; Hope and Thomas 2008; McNichols and Stubben 2008; Biddle et al. 2009).

Several researches investigate how the quality of accounting information giving impacts on the usage of accounting information inside company's capital investment. Research conducted by Fazzari, Hubbard, and Petersen (1988, 2000) which tested the relation between company's investments and accounting variable  $y$  using Tobin's  $Q$  shows there was a proof in the changing of capital

market. Other research which shows that the accounting system is in fact giving the extra information regarding the chance of investment towards investment's decision making process was done by Morkck, Shleifer, and Vishny (1990), Blanchard, Rhee, and Summers (1993), Gilchrist and Himmelberg (1995), Alti (2003), Liu and Qi (2002), Bond and friends (2004). The result of that research shows that accounting variable provides information regarding investment's chance outside of the market information. Chen (2005) tested the effect of accounting quality towards the usage of accounting information inside the decision of capital investment. Ole-Kristian and others (2010) compared the usage of accounting system information and intensive report of corporate managers unlisted in the stock exchange between developed countries and developing countries. The result shows that the usage of accounting system inside developing countries doesn't play significant role. Nonetheless, how far this founding is applied in public corporation is not explained further. Ball, Kothari, and Robin (2000) argued that the role of accounting information is more limited towards environment with characteristic such as low investor's protection and the concentrated ownership's structure. However, Ole-Kristian (2010) had an opinion that the lack of alternative informational source available will make the accounting information to be extremely useful.

This research tried to explain and investigate the effect between profit qualities towards the sensitivity of capital investment inside accounting profit. The research began from assumption that the company's capital investment is sensitive towards information concerning investment's profitability (economic profit). Managers then combine various source of information to determine the expectation towards investment profitability. Rational managers will give value towards signals which shows more informative investment profitability. Economic profit today have the power to predict the economic profit of investment, while accounting profit is the noisy measure of economic profit. Because of that, the more informative the accounting profit is towards the economic profit, the more sensitive the investment will get towards the accounting profit.

In this research, the proxy used to measure the level of informativeness on accounting profit in regards to economic profit is the measuring of profit quality used by Dechow and Dichev (2002) which then modified by McNichols (2002). Schipper and Vincent (2003) argued later that the measuring of profit quality is consistent to the perspective of symbolic accuracy (representational faithfulness), because the profit reported is matched with the economic profit. Based on this argument, the research suspected that the higher the quality of profit will strengthen the sensitivity of capital investment towards accounting profit.

The previous result of research in identifying the variables of accounting information has not yet to show the expected result. Biddle and Biddle (2006) stated that the higher the quality of accounting information will make the investment decision to be more efficient due to the asymmetry of information being minimalized. The result of research conducted by Chen (2010) stated that the relevant of accounting information used by corporation in decision making related to investment is the different between big corporations and small corporations and also between developed and developing countries. They stated that the relevant of accounting information in big corporation has more influence. Even so, Hope (2010) identified the impact inside accounting information variable by using discretionary accrual and discretionary revenue towards the efficiency of investment shows result that in small corporation, accounting information plays more significant role than those in big corporation.

Judging on the inconsistency of the previous result regarding the relevance of accounting information, therefore this research is aimed to test the consistency of previous result with using variable of profit quality as proxy from accounting information which developed by Dechow and Dichev (2002) and modified by McNichols (2002). This research is aimed to evaluate and give empirical proof regarding the influence of accounting information, especially profit quality, in decision making related to investment and testing which factors make it efficient. This is done by testing the ability of prediction method using accounting information which is profit information and financial ratios based on the financial reports.

### **Research Contribution**

This research is expected to give contribution to researchers as well as academic participants.

1. Giving empirical proof regarding the influence of accounting information relevance towards investment's decision.
2. Can be used as a material for analysis and consideration as well as chance for further researchers to complete the research.
3. Giving contribution to the development of accounting and financial science related to the importance of accounting information quality to execute investment's decision in Indonesia's Stock Exchange.
4. Giving contribution to institutional investors and individual investors in deciding which investment strategy is the correct one with considering the quality of accounting information itself.

### **LITERATURE REVIEW**

#### **Value Relevance**

The relevance of accounting information value has a meaning for the ability of the accounting information itself to explain the value of corporation (Beaver,

1968). This research about value relevance became important due to the claim stating that financial report using historical cost basis has lost lots of its relevance for the investors which caused by the major change in economy, from industrial to high technological and service oriented economy (Francis and Schipper, 1999).

The use of accounting information especially profit, cash flow and book value was getting worse because of the impact of change in the corporate operation and economy condition which was not reflected enough in current report system (Lev and Zarowin, 1999). Lev (1999) stated that the relevance of accounting value is distinguished by the quality of the accounting information. According to Francis and Schipper (1999), there are four possibilities to interpret the construction of value relevance. First, the information of financial statement influences the stock value due to the intrinsic factor inside the nature of the stock exchange. Second, accounting information is a relevant value if contains variables which can be used inside the judging construction or predict such variables. Third, the statistic relation used to measure whether the investors really use the accounting information in the price settlement, so the relevant value was measured by the ability with the ability of accounting information in terms of influencing the value of the stock exchange. The concept of value relevance is not detached from the relevance criteria of accounting standard due to the sum of accounting number is relevant if the sum presented reflects a relevant information with the criteria of judgment from one's company (Foster, 1986).

### **Earnings Value Relevance**

Earnings report is perceived as the source of critical information from every kind of annual reports presented by the corporation. In England, financial report became top priority for institutional investors and earnings report was perceived even more important than the balance from financial analysts and investors. Meanwhile in New Zealand, financial reports for finance analysts was perceived as a source for valuable information used by its users in making the investment decision and earnings value report to be a relatively more important informational source than the balance (Foster 1986). The research done by Beaver and friends implicated that there were a simultaneous approaches which then criticized by Allen and friends (1999). The method used by Beaver and friends failed in several economist developments in data time series. The result of the critics done by a particular research illustrated that significantly, price has its influence over earnings and the level of approximate earnings to influence the price.

Studies which emphasizes on the checking of accounting relevance value (such as earnings and book value) is observed with connecting the numbers between those accounting figures with the market value (level and changing)



(Dontoh et al., 2000). Those studies adopt a different approach which is: the value of prediction from earnings and price signal. As a result, a prediction from earnings will be higher than the price itself.

Other research which observed the systematic change in the relevance of earnings value and book value is being continually observed by Collins and friends (1997). The result of such observation stating the following things to be noted:

1. In contrast to the literature of merging in relevance of earnings value and book value which stated the non-declining for over 40 years, it actually shows an inclining progression, albeit a slow one,
2. A relevance for the added value from bottom line earnings shows a declining which then replaced by the inclining of book value relevance,
3. Many changing in relevance of earnings value towards book value could be explained by the increase of frequency from negative earnings and changing in average sum of corporate measurement and the abstract intensity all the time.

To put it briefly, this founding illustrated that conventional accounting historical cost model has lost its relevance is a premature statement. Ali (1994) tested the substance of information subtracted from profit, work capital and operation as well as cash flow, all has the information substance if using the non-linear model, but the result will indicate the other way should the model used is the linear model. This research showed that the existence of both work capital from operation and declining cash flow with absolute value indicates a mutual inclining.

Research regarding the substance of incremental information in earnings, work capital from operation and cash flow with using multivariate model made way for the declining response of marginal price from shocking components from each variable from all three variables with absolute value from all components. The result supported the possibility of a non linear model between return and the three work variables. In accordance to the previous study, the result with linear model was inconsistent with the fact that cash flow has an incremental information substance way above earnings and work capital from operation. This result suggested that there is a possibility of a non linear relationship between return and other non earnings data.

The previous study has mentioned the substance of incremental information in earnings, work capital from operation and cash flow assumed that all have a liner relationship between abnormal return and unexpected components from all three variables and giving proof which doesn't conclude about the substance of incremental information in work capital from operation and cash flow.

According to Freeman and Tse (1992), Ali study used a model which enables the non-linear relationship between return and all three variables. This model stated that this unexpected component from each variable keep their declining posture with absolute amount from its components. The result of this study is consistent with the non-linear relations between return and earnings, work capital from operation and unexpected cash flow which prompted from the beginning and with the incremental information substance from all variables. This indicates a strong result especially from analytical result using portfolio basis and within the outlier treatment.

An addition to the cash flow from operation and work capital from operation, previous research didn't show clearly the fact that other data beside earnings such as inflation, adjusted earnings and current-cost earnings, all contribute on giving more information despite the one reflected in the earnings itself (Bernard 1989). This result of study along with the result from Freeman and Tse (1992) stated that the power of the testing of incremental information substance from several data beside earnings can be uplifted with inputting the unexpected response from the data, which varied in accordance with the absolute value from the components.

The testing with using non-parametric approach gave the strength to the explanation which supports the non-linear model. Freeman and Tse (1992) recorded the relations between non-linear and return abnormal and shocking earnings. They argued that alongside the increase in shocking absolute earnings value, therefore the earnings tendency will show a declining pattern, as well as the response of marginal price towards shocking earnings. They recorded that the declivity coefficient of shocking earnings from linear models reflects more the effect of transitory earnings (temporary), not a permanent earnings (because linear model highly pinpoint on the coefficient value of relatively huge transitory earnings). They showed that pushing linear model specification inside return model in abnormal shocking earnings will cause a bias inside the declivity coefficient towards zero.

Research done by Hodgson and Clarke (1998) using Freeman and Tse (1992)'s research model applied the inverse target specification from unexpected profit response model. The aim of this research is to test the relevance of profit information, cash flow and return in predicting the annual stock return. Samples used in this research are totaled 774 corporate in Australia which divided into big and small corporations. Three important things to be noted in this research are as follows:

1. Non-linear functional relations gave the better explanation power than the substance of profit information and cash flow.

2. The result is consistent with the transitory profit component for small corporation,
3. The result is the opposite in regards to the theory stated that cash flow has added explanatory power which is better for big corporations.

Das and Lev (1994) tested sufficiently the alternative relations of non linear approach and checking the validity of 4 non linear models concerning the earnings and return with result as stated below:

1. There is a non linear relations between earnings and return with using annual data estimation (previous studies using quarterly data) and with non parametric procedure showing no particular relations,
2. There is a non linear relations between earnings with level model and return (previous study using change model),
3. When specified items were used in counting earnings, the non linear relations will still remain intact.
4. With inputting cash flow and accrual as independent variable, the non linear relations will still remain intact, as well as the relations between cash flow and return.

#### **Accrual Value Relevance**

Wilson (1986) observed the substance within two accrual variables, which are current, and non current accrual variable and the substance of total accrual relative information and cash flow from operation. This research considered separately regarding the content of non current accrual information and work capital from operation as well as accrual current and cash from operation. The result is the accrual component and the cash from profit has incremental information substance exceeding cash component. Non current accrual doesn't have the increment information substance exceeding the work capital from operation. Bowen (1987) proved that the information of a cash flow consistent with information inside the security price and also have the incremental explanatory power exceeding the explanatory power inside the accrual current itself.

The persistency of profit work is affected by the size of the cash component and accrual from the profit itself (Sloan 1996). That component explains the variations of return which is bigger than what previously explained as the aggregate profit itself, and this proof is in accordance to the fact that profit decomposition gave a number of information which statistically significant and will be lost if only the profit being reported.

Financial report information can be used to determine the equity price. The persistency of profit work is influenced by the size of the component of cash flow as well as the accrual profit. The research of value relevance was designed to

determine the benefit of accounting value towards corporate equity judgment. There is a sturdy relation between earnings, book value, and equity value. Accrual plays a very important role in measuring the profit and financial report. The publication of corporate financial report is a supporting factor which gives relevant information for the users to decide economic decision. Some researchers indicate that analytical report and financial variables are useful in making various decisions (Kaplan and Urwitz, 1979).

Signal theory showed an asymmetry between corporate management and other related parties with such information. In related to the asymmetry information, it is very hard for the investors and creditors to differentiate the high quality and low quality corporations. Signal theory described how such corporations should give signals through their financial reports.

The quality of the decision set by the user is influenced by the quality of information stated by the corporations inside the financial report. The quality of this information is aimed to reduce asymmetry information which might arise when the managers is more aware of the internal information and company's prospect in the future in comparison to the external side of the company.

### **Theory of Capital Investment**

The main theory in the modern investment literature is neoclassical theory of investment (Jorgensen, 1963) and Tobin's Q (1969). Neoclassical theory began with a premise that managers maximize the expectance value of discounted future profit based on the available information. This opinion was endowed by Eisner and Nadiri (1968) who stated that the role of relative price as a determining factor of demand has finally gotten a wide-spread attention in terms of research, where substitution parameter has been ignored or should not have been ignored in several researches regarding investment function. Hayashi (1982) modified this theory with introducing non-zero adjustment cost of capital stock in managers' maximizing value matter. The first condition prerequisite is the managers' expectance towards future profitability represented by marginal Q which equals with the purchase price and adjustment costs of capital stock. In equilibrium state, with the homogeneous assumption of cost function adjustment, the average investment of capital is meant as marginal Q. Furthermore, the square function from adjustment costs, average value of corporate investment could be expressed as a linier function of marginal Q. Marginal Q is then defined as managers' expectance towards discounted future profitability of an investment, based on the available information.

Capital investment has two benefits in business. First, the capital investment is made any time that a company purchases goods that will be benefit the operation of the business. Second, the providence of capital refers to



the money invested in business with understanding that the money will be used to buy fixed assets, instead of covering daily operational costs. A process of capital injection in assets retrieval suspected of long term benefits are used before it has to be changed or revised. Two easily recognizable from capital investment is soil and building. However, the capital injection is done nearly every time stating suggesting that usable items for business operations, but not used to cover business operations. Nonetheless, capital investment doesn't necessarily have to go hand in hand with equipment or soil.

A capital injection can be something simple like putting aside some money in some kind of interest account. Because the resources are not used to cover operational costs, this asset of capital is free to be used for creating extra revenue with interest. So, that will be a precise action to consider the beginning value of money used to open up the standard account as a capital asset with the fact that interest value will change the assets into some kind of capital investment. The accumulation of capital and investment, in terms of classical economy, means that the capital product is going to a progression pattern. Investment has a strong relation with saving, even though the two is not the same in definition. As Keynes pointed out, the saving account is identical into not spending the whole income of someone into the steady flow of goods or services, while investment refers to the expense of a certain product, for example, capital stuff.

Austria's economist, Eugen von Bohm-Bawerk stated that the capital intensity of any industry is due to the roundaboutness of the particular industry and consumer demand. Because capital is defines as a high level stuff, or stuff used to produce consumers' goods, and a value coming from them, because of future stuffs. Majority in most cases, capital accumulation only leads to collection of an object value increase of wealth or creating wealth. Capital can generally be defined as an asset which invested with hope that their value will increase, usually due to the expectance of profit, rent, interests, capital gain or several other types.

### **Theory of Human Information Processing**

The resolution of an issue should consider the human information processing system. Information process to human is a theory of how human accepts, stores, integrates takes and uses information. Haber (1969) gave several basic assumptions regarding information processing. Harber stated that information processing can be done through several steps, which are time interval between information and response. The processing theory is a cognitive theory of studying which explains the process, storage, and recalling of brain's knowledge (Slavin, 2000: 175). This theory explains how someone gets a number of information and could be remembered for quite a substantial time.

According to Huitt (2003), there are a few basic principles that most cognitive psychologists agree with the mental system has limited capacities, i.e. bottlenecks in the flow and processing of information, occur at very specific points. A control mechanism is required to oversee the encoding, transformation, processing, storage, retrieval and utilization of information. This control mechanism requires itself processing power and that varies in function of the difficulty of the task. There is a two-way flow of information. Sensory input is combined with information stored in memory in order to construct meaning. The human organism has been genetically prepared to process and organize information in specific ways.

Belkaoui (2005) pinpointed on the contribution of research called human information processing in accounting decision making. Both review and synthesis of several literatures explore the basic concept of psychology in decision making and its application in accounting. Belkaoui stated that accounting information is used in decision making. Human information processing inside accounting is designed to understand, illustrate, evaluate, and more importantly to prove that the process of decision making is used in the context of accounting and auditing.

#### **Accounting Information and Capital Investment**

There are numerous researches showed that there are positive relations between capital investment and measurement of accounting accountability such as profit, cash flow from operation, and sales growth, after controlling the average Tobin's Q. There are several interpretations, first, the average of Q to measure the investment chance, but enabling the possibility of agent issue, managers do not act to maximize the discounted future profitability based on the information available. Second, the average Q filled the chance measurement of investment but enabling the asymmetric information, corporate has an external funding cost which is higher than the internal (Myers and Majluf, 1984). Third, price acceptance assumption, constant returns too scale, market efficiency and invalid stuffs to make the average Q indecent to use for measuring managers' expectation of future profit of investment (Erickson and Whited, 2000).

#### **Hypothetical Development**

In efficient capital market, marginal Tobin Q is a motivational factor of corporate investment regulation. The correlation between investment and cash flow always defined as a friction of capital market such as funding problem (Fazzari and friends, 1988). Many literatures stated that stock exchange value not only influenced by corporate information but also from market and other conditions which enable this information to reduce the disturbance of power which affect the stock value and automatically directed towards optimum investment (Shleiver and Vishny, 1997). Stein (2003) stated that corporate often face

investment risks which effect the efficiency of corporate investment. The most prone problem is those coming from asymmetrical information and agent issue. To solve this problem, several researches stated that revealing and reporting finance data which potentially mitigate the investment problem could add towards the favor of investment efficiency. Many mechanisms are used to increase the role of accounting. First, qualified accounting information could reduce the asymmetrical information between investors and increase the stock market liquidity and reduce the funding cost so it could avoid the mistake made from decision making or adverse selection. Second, accounting information doesn't only used in designing executive compensation contract but also works as a crucial informational source to the stockholder managerial supervision which helps to reduce agent problem between stockholders and managers. At the end, accounting information could handle the adversity of information necessity which needed in aiding the agent problem, adding the capacity of stockholders and reduce the cost of funding as well as adding the investment efficiency.

Based on the discussion above which stated that accounting information has its impact on avoiding the mistake on decision making and agent conflict, I hypothesize:

H1: *Accounting information is negatively associated with underinvestment*

H2: *Accounting information is negatively associated with overinvestment*

## **RESEARCH METHODOLOGY**

Research methodology used in this research is descriptive analytical method. The research technique done is survey study with using secondary data from primary source, forming in annual report from Manufacturing Corporation listed in Indonesia's Stock Exchange, secondary data is a source for research data gotten by the researcher indirectly through mediators (gotten and recorded by other party). Secondary data is commonly come in a form of proofs, records or historical report which filed in an archive (documentary data) which is published.

### **Research Object**

Research object is an impact of accounting information relevance towards capital investment efficiency. This research will discuss whether the accounting information relevance has their impact towards the efficiency of capital investment which is done by the manufacturing corporation and published in their annual financial report. The data of their research object is gotten from secondary data in a form of annual report 2007 from manufacturing corporation listed in Indonesia's Stock Exchange. The subject of this research is the manufacturing corporation listed in Indonesia's Stock Exchange.

### Sample Selection

Research sample is Manufacturing Corporation listed in Indonesia's Stock Exchange.

The period of choosing is from 2007 until 2010. The sample choosing is as follows:

- Corporation who issued the financial report within the period of 2007-2010
- Corporation who didn't conduct asset reorganization.

To reduce the impact of outlier, winsorizing system will be conducted to all variables in a level of 1 and 99 percent.

### Variable and Variable Measurement

Variable operationalisation is needed to determine the type and indicators of variables related in this research. Aside from that, this process is meant to determine the scale of measurement from each variable, so the hypothetical testing using statistical help could be used correctly. This operationalisation of variables is meant to determine the type and indicator of variable related in this research. The variable used in this research is allocated into independent variable, which is the influencing variable and dependent variable, which is the influenced variable.

The variables in this research are as follows:

1. The relevance of accounting information (independent variable) which proxied with accrual quality.
2. Investment efficiency (dependent variable) which proxied with a sum of new investment over the PPE reduced by the sales of fixed assets.

### Investment Efficiency Proxy

There are two constructs being analyzed in this research, which are investment efficiency and financial report quality. This research is investigating on how the accounting quality in the surpassing year could affect the investment efficiency in the upcoming years. Conceptually, investment efficiency refers to the company in their whole taking or separate taking only in the project with positive net present value. Consistent with the previous research (Biddle, 2009), the measurement of investment as a deviation from investment expectancy in this research is using an investment prediction method as a function of growth opportunity. Either too low investment or too high investment is categorized as an inefficient investment. This research estimated the parsimony model to expect the investment as function of income growth. The relations between investments with income growth could be different with the fluctuation of income (Eberly 1997, McNichols and Stubben 2008), and the testing used to determine the differential predictability increase or declining using linear regression model as stated:



$$Invest = \beta_1 + \beta_2 NEG + \beta_3 RevGrowth + \beta_4 NEG * RevGrowth + e \quad (1)$$

Based on Biddle (2009), this research defined invest as a sum of new investment towards engine, tools, vehicles, soil, building, research spending and development reduced by the selling of fixed assets. RevGrowth is the average growth of annual income. The variable indicator NEG is scored 1 to negative growth and 0 to implicate otherwise. To make matter easier, underinvestment variable is multiplied by -1.

**Accounting Information Proxy**

Universally, there is no agreement on the measurement of accounting quality (Dechow, Ge, and Schrand 2009). The measure of accounting quality considers accrual quality. It is derived from prior work (Dechow and Dichev, 2002). The measure of accrual quality is based on the idea that accruals are estimates of future cash flow when there is lower estimation error embedded in the accrual process (Biddle and Biddle, 2009)

**Analysis Method**

Statistical analysis used to test the hypothesis is double layered regression test. The testing uses parametrical testing if the data is distributed normally, and using non parametric testing if the data was not distributed normally (Jogiyanto 2004). The analysis method used in this research is double layered regression.

To find out whether the quality of information gives an impact to ceteris paribus and investment efficienct, a regression is done with below equation:

$$Invest = \beta_1 + \beta_2 AQ + \beta_3 LOGSIZE + \beta_4 Tang + \beta_5 DER + \beta_6 RevGrowth + e$$

Details:

- AQ = The quality of accounting information
- LOGSIZE = The size of a company
- Tang = Tangibility level of an asset
- DER = Debt to Equity Ratio
- RevGrowth = Revenue Growth

**RESULT AND DISCUSSION**

**Data Analysis**

My main sample consists of 380 years observations from 95 manufacturing corporations that published their stock for a period of research from 2007 until 2010. The general viewing of research data as a whole could be seen in a descriptive statistical table below:

**Table 1**  
**Statistic Descriptive**

Variable	Minimum	Maximum	Average Value	Standard
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	Value	Value		Deviation
Invest	3403.00	14909.00	9619.6905	1287.84815
AQ	219.54	706.25	9.9934	93.63545
LogSize	72.26	57.86	2.7658	12.88221
Tang	0.04	15.68	4.6370	4.11030
DER	-0.47	1.52	0.5475	0.32528
RevGrowth	6	117	65.4286	22.60185

From table 1 above, it was seen that the average sample of corporation creates investment tripled the amount from the previous year. Even so, the gap between the lowest and the highest is very substantial considering the investment given to the company between 14909 from its lowest point which is 3403. The data of accounting information quality which measured with using the accrual pointed out that the average quality of a company's profit as much as 9,9934 with gap between 219,54 until 706,25. LogSize which proxied with total asset log (ROA) pointed out the average 2,7658 with standard deviation 12,8821, while the minimum value is 72,26 and maximum value 57,86. Leverage proxies with total liability ratio divided with total equity (DER) sowed the average 0,5475 times from the book value with gap between -0,47 until 1,52. The revenue growth which measured with using sales growth showed the average 15,68 with standard deviation 4,11, while the minimum value is 0.04 and maximum value is 4,637.

#### Regression Assumption Test

The similarity of regression tests the relations between quality of information and investment. The first similarity done based on the original research data shows no sign of intrusion of normality assumption of residual distribution of regression equity. This is shown through the result of Kolmogorov-Smirnov which showed no significance towards residual testing which is 0,000. The transformation of regression equity filled the linearity of assumption. This is shown through the result of Kolmogorov-Smirnov as much as 0,125 as well as P-Plot which is closed to the normal distribution.

The result of collinearity testing also shows that regression equity does not intrude the assumption of multicollinearity. The value of VIF of each independent variable is 1,482 with tolerance value of 0,675. Collinearity diagnostics also didn't show any multicollinearity. With that said, the regression equation 1 has filled the assumption of multicollinearity.

The test result of heteroscedasticity with using the Glesjer testing towards the independent variable shows that the significance of value t is insignificant.

This means that the regression equation has filled the assumption of homoscedasticity.

**Hypothesis Testing**

Double layered regression technique is used to figure out the functional relations between dependent variables connected with two or more independent variables. Before doing the regression analysis, an analysis of variance (ANOVA) is needed to test the significance of linear relation in double layered regression model, which is shown in below table:

**ANOVA<sup>b</sup>**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1.525E8	5	3.050E7	49.524	.000 <sup>a</sup>
	Residual	5.481E7	89	615848.195		
	Total	2.073E8	94			

a. Predictors: (Constant), AQ, LOGAGE, Tang, Slack, DER, RevGrowth, LogSize, ROA

b. Dependent Variable: Invest

Source: Result of data measurement

Based on above output table, the significance of regression equation between independent variables and residual absolute value is known as 0, whereas the value of sig (0) < α (0.05), so the conclusion can be drawn that the regression equation is significant. Next is doing the double layered regression analysis.

There are 5 variables tested in the regression equation, which are AQ, LogSize, DER, and RevGrowth. The regression test towards the whole observation to test the effect of accounting information towards the stock market shows result as below:

$$Invest = \beta_1 + \beta_2AQ + \beta_3LOGSIZE + \beta_4Tang + \beta_5DER + \beta_6RevGrowth + e$$

**Table 2**  
**Regression Result**  
**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1293.697	994.569		1.301	.197
	AQ	.169	2.230	.004	.076	.940
	LogSize	-2.913E-5	.000	-.004	-.066	.948
	Tang	2.448	.162	.857	15.092	.000
	DER	-.132	.117	-.071	-1.126	.263
	RevGrowth	-26.964	47.569	-.036	-.567	.572

a. Predictors: (Constant), AQ, LOGAGE, Tang, Slack, DER, RevGrowth, LogSize, ROA

b. Dependent Variable: Invest

Source: Result of data measurement

From table 2, the regression equation is deducted as follows:

$$\text{Invest} = 1293.697 + 0.169\text{AQ} - 2913\text{E-}5\text{LOGSIZE} + 2.448\text{Tang} - 0.132\text{DER} - 26.964\text{RevGrowth} + e$$

### Determination Coefficient

Determination coefficient used to figure out how tight the relation between independent variables and dependent variables. The result of the calculation is as follows:

### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
ioan1	.858 <sup>a</sup>	.736	.721	784.760

a. Predictors: (Constant), AQ, LOGAGE, Tang, Slack, DER, RevGrowth, LogSize

b. Dependent Variable: Invest

Source: Result of data measurement

Above result shows there is a 73.6% investment efficient which could be explained by the variables of information quality, while the rest is explained through other causes.



The result of the data testing shows that simultaneously, independent variable has a significant impact towards dependent variables. But partially, only Tangible variable has a significant impact towards investment.

### **CONCLUSION**

This research has its aim to test the influence of accounting information relevance towards the investment efficiency. Statistical analysis used is double layered regression analysis. The result of the test shows that generally the accounting information is relevant with the investment decision, only in practice there are several misconduct happens due to the unclarity of economic situation so it affects the managers in doing their investment decision. In other words, managers don't always act rationally in their decision making process.

### **Limitation**

This research has its limitation. First, the sample for this research is limited only to manufacturing companies. This is due to the fact that this research is expecting the data to have the same characteristic. But if the testing is done through various companies, there is a possibility of the result to be able to explain better regarding the occurring phenomenon. Second, the result is only using six variables to predict the investment efficiency.

The following researches are hoped to use more accurate analytical tools with more accurate and precise characteristic determination.

### **REFERENCES**

- Alti, Aydogan, 2003, "How sensitive is investment to cash flow when financing is frictionless?" *Journal of Finance* 58, pp.707-722.
- Baker, Malcolm, Jeremy Stein, and Jeffrey Wurgler, 2003, "When does the market matter? Stock prices and the investment of financially constrained firms," *Quarterly Journal of Economics* 118, pp.969-1006.
- Biddle, Gary C., Peter F. Chen, and Guochang Zhang, 2001, "When capital follows profitability: non-linear residual income dynamics," *Review of Accounting Studies* 6, pp.229-265.
- Biddle, Gary, and Gilles Hilary, 2005, "The effect of accounting and disclosure quality on firm-level investment," working paper, Hong Kong University of Science and Technology.
- Blanchard, Oliver, Changyong Rhee, and Lawrence Summers, 1993, "The stock market, profit, and investment," *Quarterly Journal of Economics*, pp.115-136.

- Bond, Stephen, Jason G. Cummins, 2001, "Noisy share prices and the Q model of Investment," working paper, Institute for Fiscal Studies and Nuffield College, Oxford, and Federal Reserve Board.
- Bond, Stephen, Alexander Klemm, Rain Newton-Smith, Murtaza Syed, Gertjan Vlieghe, 2004, "The role of expected profitability, Tobin's Q and cash flows in econometric models of company investment," working paper, Oxford and Institute for Fiscal Studies.
- Bushman, Robert, Qi Chen, Ellen Engel, and Abbie Smith, 2004, "Financial accounting information, organizational complexity and corporate governance systems," *Journal of Accounting and Economics*, vol 37, pp. 17-201.
- Bushman, Robert, Joseph D. Piosroski, and Abbie J. Smith, 2005, "Capital allocation and timely accounting recognition of economic losses: international evidence," working paper, The University of North Carolina at Chapel Hill and University of Chicago.
- Bushman, Robert, Abbie Smith, 2001, "Financial accounting information and corporate governance," *Journal of Accounting and Economics*, vol 32, pp. 237-333.
- Bushman, Robert, Abbie Smith, and Frank Zhang, 2005, "Investment-cash flow sensitivities are really capital investment-working capital sensitivities," working paper, University of North Carolina at Chapel Hill, University of Chicago, and Yale University.
- Chen, Qi, Itay Goldstein, and Wei Jiang, 2005, "Price informativeness and investment sensitivity to stock price," working paper, Duke University.
- Dechow, Patricia M., 1994, "Accounting earnings and cash flows as measures of firm performance: the role of accounting accruals," *Journal of Accounting and Economics* 18, pp.3-42.
- Dechow, Patricia M., Ilia D. Dichev, 2002, "The quality Accruals and Earnings: the role of accrual estimation errors," *Accounting Review* 77, pp. 35-59.
- Dechow, Patricia M., S. P. Kothari, and Ross L. Watt, 1998, "The relation between earnings and cash flows," *Journal of Accounting and Economics* 25, pp. 136-168.

Durnev, Art, Randall Morck, and Bernard Yeung, 2004, "Value-enhancing capital budgeting and firm-specific stock return variation," *Journal of Finance* 60, pp. 65-105.

Erickson, Timothy, and Toni M. Whited, 2000, "Measurement error and the relationship between investment and  $q$ ," *Journal of Political Economy* 108, pp.1027-1057.

Fama, Eugene, Kenneth French, 1997, "Industry costs of equity," *Journal of Financial Economics* 43, pp. 153-193.

Fazzari, Steven M., R. Glenn Hubbard, and Bruce C. Petersen, 1988, "Financing constraints and corporate investment," *Brookings Papers on Economic Activities*, pp. 141-195.

Fazzari, Steven, M., R. Glenn Hubbard, and Bruce C. Petersen, 2000, "Investment-cash flow sensitivities are useful: a comment on Kaplan and Zingales," *Quarterly Journal of Economics* 115, pp.707-712.

Feng Chen, Ole-Kristian Hope, Qingyuan Li, and Xin Wang, 2000, "Financial Reporting Quality and Investment Efficiency of Private Firms in Emerging Markets", *Accounting Review*,

Francis, Jennifer, Ryan LaFond, Per M. Olsson, and Katherine Schipper, 2003, "Accounting anomalies and information uncertainty," Working paper, Duke University.

Francis, Jennifer, Ryan LaFond, Per M. Olsson, and Katherine Schipper, 2004, "Costs of equity and earnings attributes," *Accounting Review*, Vol 79, No.4, pp.967-1010.

Francis, Jennifer, Ryan LaFond, Per M. Olsson, and Katherine Schipper, 2005, "The market pricing of accruals quality," *Journal of Accounting and Economics*, forthcoming.

Gilchrist, Simon, Charles P. Himmelberg, 1995, "Evidence on the role of cash flow form investment," *Journal of Monetary Economics* 36, pp.541-572.

Green, William H., 1997, "Econometric analysis," 4th edition, Prentice Hall.

Hayashi, Fumio, 1982, "Tobin's marginal  $q$  and average  $q$ : a neoclassical interpretation," *Econometrica* 50, pp. 213-224.

Hicks, J. 1939, "Value and Capital," Oxford, U.K.: University Press.

- Huitt, W. (2003). The information processing approach to cognition. Educational Psychology Interactive. Valdosta, GA: Valdosta State University.
- Jensen, Michael C., 1986, "Agency costs of free cash flow, corporate finance, and takeovers," *American Economic Review* 76, 323-329.
- Johnson, H. Thomas, Robert S. Kaplan, 1987, "Relevance lost: the rise and fall of management accounting," *Harvard Business School Press, Boston, Massachusetts*.
- Jones, Jennifer J., 1991, "Earnings management during import relief investigations," *Journal of Accounting Research* 29, pp.193-228.
- Jorgenson, D. W., 1965, "Anticipations and investment behavior," in James S. Duesenberry et al. eds., *The Brookings Econometric Model of the United States*, Amsterdam, pp. 35-92.
- Kaplan, Steven N., and Luigi Zingales, "Do investment-cash flow sensitivities provide useful measures of financing constraints?" *Quarterly Journal of Economics* 112, pp. 169-215.
- Liu, Jing, Doron Nissim, and Jacob Thomas, 2002, "Equity valuation using multiples," *Journal of Accounting Research* 40, pp.135-172.
- Liu, Qiao, and Rong Qi, 2002, "Information production, cash flow and corporate investment," working paper, University of Hong Kong and Columbia University.
- McNichols, Maureen F., 2002, "Discussion of the quality of accruals and earnings: the role of accrual estimation errors," *Accounting Review* 77 (Supplement), pp. 61-69.
- Morck, Randall, Andrei Shleifer, and Robert W. Vishny, 1990, "The stock market and investment: is the market a sideshow?" *Brookings Papers on Economic Activity* 2, pp. 157-215.
- Myers, Stewart, and Nicholas Majluf, 1984, "Corporate financing and investment decisions when firms have information that investors do not have," *Journal of Financial Economics* 13, pp. 187-221.
- Schipper, Katherine, and Linda Vincent, 2003, "Earnings quality," *Accounting Horizon* 17, pp. 97-110.



Sloan G. Richard, 1993, "Accounting earnings and top executive compensation," *Journal of Accounting and Economics* 16, pp. 55-100.

Sloan G. Richard, 1996, "Do stock prices fully impound information in accruals about future earnings," *Accounting Review* 71, pp. 289-315.

Subramanyam, K. R., 1996, "The pricing of accruals," *Journal of Accounting and Economics* 22, pp. 249-281.

Tobin, James, 1963, "A general equilibrium approach to monetary theory," *Essays in Economics: Macroeconomics* 1, pp. 332-338.

Wei, K.C. John, Feixue Xie, 2005, "Earnings management, corporate investment, and stock returns," working paper, Hong Kong University of Science and Technology.

Wurgler, Jeffrey, 2000, "Financial markets and the allocation of capital," *Journal of Financial Economics* 58, pp. 187-214.

Zhang, Guochang, 2000, "Accounting Information, capital investment decisions, and equity valuation: theory and empirical implications," *Journal of Accounting Research* 38, pp. 271-295.

Zimmerman, Jerold L., 2003, "Accounting for decision making and control," 4th edition, *McGraw-Hill/Irwin*.

