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### Abstract

This research aims to examine whether the disclosure of IC information conducted by the company in the annual report has value relevance. The research dependent variable is PRICE. The independent variables in this research are intellectual capital disclosure index (ICDI) obtained using Li, et. al. (2012) which consists of 61 items of IC information, net income (NI), and book value of equity (BVE). The research sample is a banking sector company listed on the Indonesia Stock Exchange (BEI) of the year 2012 through 2016 using annual report. The result of hypothesis testing with regression analysis using SPSS 23 application shows that ICDI coefficient is not have positive influence to stock price. But if it is divided into 3 components it can be seen that Human Capital Disclosure Index (HCDI) has a positive effect on stock price although Structural Capital Disclosure Index (SCDI) and Customer Capital Disclosure Index (CCDI) have no effect on stock price. This shows that not all information about intellectual capital has value relevance.

**Keyword:** Intellectual Capital, IC information, Value Relevance.

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# Analysis of Value Relevance of Intellectual Capital Disclosure

Dhissa Miranthi Arnis<sup>1</sup>, Lindrianasari<sup>2</sup>, Yuztitya Asmaranti<sup>3</sup>, Usep Saipuddin<sup>4</sup>

<sup>1</sup>Faculty of Economics and Business, University of Lampung, Indonesia, +6285269706036.

[dhissamiranthiarnis@gmail.com](mailto:dhissamiranthiarnis@gmail.com)

<sup>2</sup>Faculty of Economics and Business, University of Lampung, Indonesia

<sup>3</sup>Faculty of Economics and Business, University of Lampung, Indonesia

<sup>4</sup>Faculty of Economics and Business, University of Lampung, Indonesia

## ABSTRACT

*This research aims to examine whether the disclosure of IC information conducted by the company in the annual report has value relevance. The research dependent variable is PRICE. The independent variables in this research are intellectual capital disclosure index (ICDI) obtained using Li, et. al. (2012) which consists of 61 items of IC information, net income (NI), and book value of equity (BVE). The research sample is a banking sector company listed on the Indonesia Stock Exchange (BEI) of the year 2012 through 2016 using annual report. The result of hypothesis testing with regression analysis using SPSS 23 application shows that ICDI coefficient is not have positive influence to stock price. But if it is divided into 3 components it can be seen that Human Capital Disclosure Index (HC DI) has a positive effect on stock price although Structural Capital Disclosure Index (SCDI) and Customer Capital Disclosure Index (CCDI) have no effect on stock price. This shows that not all information about intellectual capital has value relevance.*

**Keywords:** Intellectual Capital, IC information, Value Relevance.

## 1. INTRODUCTION

As time goes on, almost all investors would want to invest their money into the most appropriate company and have extensive and complete additional information. As we know that the financial statements are reports that contain financial information in a company. However, for investors only information from financial statements is not enough, because information outside of financial statements is also important. Indeed in the present day the science of accounting is no longer value relevance and requires many other factors important to decide the choice. For example, does this company have a good relationship to other companies, or does this company have a good image, and so on. Information like this is very important for investors to be able to invest into companies that have complete information. Such information is also needed by companies that can be named with intangible assets.

As already mentioned in accounting magazine (iaiglobal), that intangible asset is the biggest asset in a start up company, just as it does with banks in Indonesia that almost all of its capital comes from investors because it can also be mentioned that most of the assets owned by banks in Indonesia are non-physical assets in the form of credit / financing provided to customers, where the amount of credit successfully channeled by the bank is strongly influenced by various factors related to intellectual capital component that is part of intangible assets. As described in PSAK 22 that a business must consist of inputs and processes applied to the input and capable of generating output. What needs to be emphasized here is that

a business does not need to have current output to be defined as "business". If a business does not have an output, then investors should consider the following factors (PP10 in PSAK 22):

1. The company has started the main planned activities
2. Have employees, intellectual wealth and inputs and other processes that can be applied to inputs
3. Is running a plan to produce output
4. Will be able to gain access to customers who will buy the output

It is these factors that are strongly related to the intellectual capital component. Intellectual Capital consists of 3 components namely Human Capital, Structural Capital, and Relational Capital / Capital Employed. Human Capital discusses individual skills, education, experience, skills, and creativity in a company. Structural Capital discusses technology systems, enterprise operational systems, patents and trademarks. As well as, Relational Capital / Capital employed discusses physical and financial capital for the creation of added value, which also discusses good relationships between company partners and other companies..

## **2. LITERATURE REVIEW**

### ***2.1 Definition of Intellectual Capital***

Intellectual Capital has been identified as an intangible set of (resources, abilities, and competencies) that drive organizational performance and value creation. Intellectual Capital is defined as a knowledge resource in the form of employees, customers, processes or technologies that the company uses in the process of creating value for the company (Ulum, 2009: 20-30).

The added value of a company can be created through both physical and financial resources (Pulic, 1998). While Intellectual Capital is an intangible asset that is not easy to measure. Based on the above, a solution is needed to measure and report the company's Intellectual Capital and how Intellectual Capital adds value to the company. Therefore the Value Added Intellectual Coefficient (VAIC) concept emerged for the condition Intellectual Capital Components

The International Federation of Accountants (IFAC) classifies intellectual capital in three categories: Intellectual Capital, Structural Capital or Organization Capital and Relational Capital or Customer Capital detailed as follows (Sawarjuwono and Kadir, 2003):

#### **a. Human Capital**

Human capital is a lifeblood in intellectual capital. This is where the source of innovation and improvement. But is a component that is difficult to measure. Intellectual capital is also a source of very useful knowledge, skills and compensation in an organization or company. Human capital reflects the company's collective ability to produce the best solution based on the knowledge possessed by the people in the company. Human Capital will increase if the company is able to use the knowledge possessed by its employees. Provide some basic characteristics that can be measured in this capital, namely training programs, credential, experience, competence, recruitment, mentoring, learning programs, individual potential and personality.

#### **b. Structural Capital or Organization Capital**

Structural capital is the ability of the organization or company in fulfilling the company's routine process and its structure that supports the employee's efforts to produce optimal intellectual

performance and overall business performance, for example: company's operational system, manufacturing process, organizational culture, management philosophy and all forms of intellectual property owned company. An individual can have a high level of intellectuality, but if an organization has poor systems and procedures then intellectual capital can not achieve optimal performance and potency that is not maximally utilized.

c. **Relational Capital or Customer Capital**

This element is an intellectual capital component that gives real value. Rational capital is a harmonious relationship / association network owned by the company with its partners, whether coming from reliable suppliers and qualified, derived from the company's relationship with the government and with the surrounding community. Relation capital can arise from various parts outside the corporate environment that can add value to the company.

## **2.2 Intellectual Capital Disclosure**

The value of corporate IC is not presented in the company's financial statements and can not be measured in monetary units. Even there is no standard method to calculate the IC value of a company. Cañibano et al. (2000) argues that existing accounting standards can not accommodate a company to recognize its intellectual property as an asset. Accounting standards restrict the criteria of an enterprise in recognizing an asset, for example, to be measurable in monetary units, having certain future economic benefits, controlled or controlled by the enterprise, and arising from past transactions. Meanwhile, many resources are owned by the company and play an important role in creating the value of the company, but because it does not meet the criteria to be recognized as an asset, the company can not recognize it as an asset. This condition makes companies with intensive intellectual capital can not present the resources in the financial statements. Although it can not be accommodated in the company's financial statements, previous studies have shown that ICs have an effect on company performance (eg Chen et al., 2005; Tan et al., 2007; Kamath, 2008).

This research will refer to the disclosure conducted by Li et al (2012) which aims to examine the influence of Intellectual Capital with its components by separating IC disclosure into 3 components namely Human Capital, Structural Capital, Costumer Capital based on 61 items of disclosure.

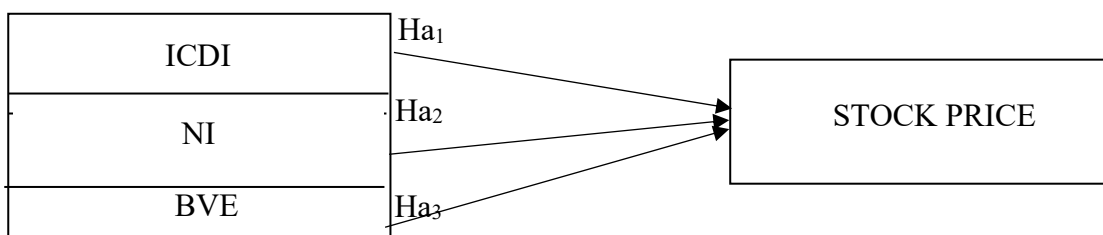
## **2.3 Value Relevance**

A value relevance study is evaluation of the relationship between accounting information and capital market values (market values). Beaver (2002) indicated that the theoretical groundwork of value relevance studies adopting a measurement approach is a combination of valuation theory plus contextual accounting and financial reporting arguments (accounting theory) that allows the researcher to predict how accounting variables and other information relating to market value will behave. Holthausen and Watts,(2001) suggest that value relevance studies use two different theories of accounting and standard setting to draw inferences: (i) "direct valuation" theory and (ii) "inputs-to equity-valuation" theory. Direct valuation theory proposes a link between accounting earnings and stock market value. In direct valuation theory, accounting earnings is intended to either measure or be combined with the equity market value changes or levels. However, Zaleha et al. (2008) point out that the conclusion usefulness paradigm proposes that accounting information

is useful if utilized by users of financial statements for, or significantly associated with their decision making (Riahi Belkaoui, 2000) even though the information might not be stated at their best current value (Scott, 2000). Within this conception, the main users are those who make decisions having an impact on firms' value, specifically decision-making by capital market participants (Beaver, 2002; Riahi Belkaoui, 2000). In discussing the concept of relevance with regard to accounting information, Riahi-Belkaoui (2000) believes that accounting information is relevant if the information can influence decisions made by decision makers (i.e., its value relevance concept).

This study aims to examine the effect of Intellectual Capital Disclosure Index on stock price, to examine the effect of net income on stock, to examine the effect of book value of equity.

**Figure 2.1**  
**Research Model**



#### **2.4 Effect of Intellectual Capital Disclosure Index on Stock Price**

Previous research conducted by Amir and Lev (1996), Lev and Zarowin (1999), Francis and Schipper (1999) proves that the value relevance of accounting and financial information has decreased. This is due to the increase in corporate investment in intangible assets that most can not be accommodated by the existing financial reporting system. Meanwhile Eccles et al. (2001), Eccles and Mavrincac (1995) in Bukh (2003) suggest that investors 'and analysts' demand for information indicates a substantial difference between the types of information available in the firm's financial statements and the type of information demanded by the market. Bukh (2003) further states that investors and analysts generally require more reliable information in the company's annual reports such as quality, expertise, experience and managerial integrity, customer relations and personal competence, all of which are factors related to intellectual capital. Canibano et al. (2000) reviews various studies that assess the value relevance of various IC components (such as research and development costs, promotional costs, patents, brand, customer satisfaction, and Intellectual resources) and find mixed results. While Lev and Sougiannis (1996) and Gu and Lev (2001) tested the value relevance of the IC specific indicators and found that the disclosure has value relevance. Vafaei et al. (2011) conducted a study on the value relevance of IC information of public companies in various countries, namely Britain, Australia, Hong Kong and Singapore. They found evidence that disclosure of IC information is positively related to share price (having value relevance) in two countries in non-traditional industries.

This study attempts to re-examine the various results regarding the value relevance of information about IC with banking industry industry settings in Indonesia and use Li, et.al. (2012) approaches in measuring the disclosure variables of IC information. Hypothesis proposed in this research are:

**Ha<sub>1</sub>** : *Intellectual capital has a positive effect on stock prices.*

### **2.5 Effect of Net Income on Stock Price**

Net income is calculated by taking a company's revenues for a given period of time and subtracting the cost of goods sold. The cost of goods sold includes all the expenses involved in doing business, such as rent, payroll, equipment, advertising, and taxes.

If your business is organized as a corporation, then you've got stockholders, and you can assume those stockholders are paying close attention to your net income. After all, "net income" is just another way of saying profit, and profit is the stockholders' return on their investment. Even profit that gets reinvested in the company still belongs to the stockholders, and that's reflected in the stockholders' equity figures in the company's financial statements.

**Ha<sub>2</sub>** : *Net income has a positive effect on stock prices.*

### **2.6 Effect of Book of Value Equity on Stock Price**

Book value of equity per share (BVPS) is a ratio that divides common equity value by the number of common stock shares outstanding. The book value of equity per share is one factor that investors can use to determine whether a stock price is undervalued. If a business can increase its BVPS, investors may view the stock as more valuable, and the stock price increases.

**Ha<sub>3</sub>** : *Book value of equity has a positive effect on stock prices<sup>3</sup>.*

## **3. METHODS**

### **3.1 Population and Research Samples**

The population in this study is all Banks in Indonesia Banking Exchange in 2012 until 2016, ie 43 company. Sampling method by purposive sampling is used in sample selection in this study, using some specific criteria that must be met by the company to be sampled. These criteria include, companies that do not publish annual reports in the year in the study period, and the stock price in a certain year does not exist.

### **3.2 Dependent Variables**

The dependent variable of this study is PRICE, the stock price will be calculate when Annual Report published.

### **3.3 Independent Variables**

#### **3.3.1 Intellectual Capital Disclosure Index (ICDI)**

ICDI measurements will be performed by scoring refers to Li, et. Al (2012). Based on the disclosure of Li, et. al ICDI is divided into 61 items. The scoring for IC disclosure in this study adopted the measurement of scorning by making 2 categories of disclosure, ie disclosure given score 1 if expressing Intellectual Capital, score 0 if not reveal Intellectual Capital. ICDI values are accumulated as follows:

$$ICDI = \frac{\text{Scores Existing}}{\text{maximum score}}$$

3.3.2 Net Income (NI)

The NI variable used is the profit before tax of the current year.

3.3.3 Book Value of Equity (BVE)

BVE itself means that to compare the average value of the firm's book value of equity per share to its stock market value. The BVE variable used is the previous year's BVE value (t-1). The BVE value is obtained by subtracting the book value from the total assets minus the book value of total liabilities or debts. Or BVE can calculate with formula as follows:

$$BVE = \frac{\text{total of outstanding stock} \times \text{closing stock price}}{\text{total equity}}$$

**3.4 Data Analysis Method**

Method of data analysis is done by statistical test using linear regression multiple. The functional relationship between one variable is tied to the independent variable can be done with multiple linear regression. Before using the model multiple linear regression in testing the hypothesis, then first done descriptive statistical analysis and classical assumption testing. From the results of the research collected then the next statistical techniques used in data analysis is multiple linear regression model with the following equation.

$$PRICE = \alpha + \beta_1ICDI + \beta_2NI + \beta_3BVE + \epsilon$$

Information:

PRICE = Stock Price

$\alpha$  = Constants

ICDI = Intellectual Capital Disclosure Index

NI = profit before bank tax

BVE = book value of equity bank

$\epsilon$  = Error term

**4. FINDINGS AND ARGUMENT**

Based on the selection process, obtained as many as 38 banking companies are divided into 148 data selected as a sample. The author conducted a purposive sampling method with the following details:

**Table 4.1**  
**Sampling Process Research**

NO	INFORMATION	TOTAL
1	All banking sector companies in Indonesia are listed on the Stock Exchange 2012-2016 in 5 years	215
2	Companies that do not publish annual reports in the year in the study period	(26)



3	The stock price in a certain year does not exist	(31)
4	Company which have minus net income	(10)
	<b>Total Sample</b>	<b>148</b>

#### 4.1 Descriptive Statistics

This study uses descriptive statistics to explain the description of 148 sample data from 38 firms. Description of sample in the form of maximum value, minimum value, mean, and standard deviation. Description of descriptive statistics can be seen in the following table:

**Table 4.2**  
**Result of Descriptive Statistics Regression Model**

	N	Minimum	Maximum	Mean	Std. Deviation
PRICE	148	Rp 22	Rp 18.450	Rp 2.036,03	Rp 3.478,56
ICDI	148	0,23	0,98	0,70	0,16
NI (in million)	148	Rp 139,41	Rp 27.404.745	Rp 3.070.186,46	Rp 6.015.496,40
BE	148	0,0013	5666,95	69,17	497,13

From table 4.2 above described as follows:

1. It can be seen in the research period that the value of PRICE is Rp 22 as a minimum value of up to Rp 18.450 as a maximum value with an average of Rp 2.036,03 and standard deviation of Rp 3.478,56. Mean value in table 4.2 this means that the average price of shares traded on the study period that is equal to Rp 2.036,03.
2. Based on the table 4.2 index measurement based on scoring which is classified into two groups namely the company which stated Intellectual Capital Disclosure Index (ICDI) is coded (1) and the company does not declare code (0), with minimum value equal to 0,23 and a maximum value of 0,98 with an average mean of 0,70 and a standard deviation of 0,16. From table 4.2 it can be seen that the average disclosure of ICDI in banking companies listed in Indonesia Stock Exchange (IDX) period 2012-2016 is high that is 70% if measured by using index disclosure according to method Li, et. al. (2012).
3. From table 4.2 above can be seen that the value of Net Income (NI) calculated in millions has a minimum value of Rp 139,41 and maximum value of Rp. 27.404.745 with a mean of Rp. 3.070.186,46 and the standard deviation of Rp. 6.015.496,40.
4. From table 4.2 above can be seen that the value of Book of Value Equity on 158 data has a minimum value of 0,0013 and a maximum value of 5666,95 with a mean of 69,17 and standard deviation of 497,13. With an average of 69,17 which means it is still smaller than the market value of its shares which average Rp 2.036,03.

#### 4.2 Discussion of Research Results

If seen from R-Square value of 0,621 indicates that the proportion of influence of ICDI, NI, BVE variable to PRICE variable is 62,1%, meaning that the analysis of value relevance of intellectual capital disclosure



has a proportion of influence on earnings quality of 62,1% while the remaining 37,9% (100% - 58,5%) is influenced by other variables that are not in the linear regression model. Based on the results of multiple linear regression analysis has been done obtained the following results:

**Table 4.3**  
**Individual Parameter Significance Test Results (Test Statistic t)**

Keterangan	B	T	Sig
(constant)	-8,473	-6,413	,000
ICDI	,423	1,057	,293
NI	,560	12,242	,000
BVE	,168	4,024	,000

4.2.1 Intellectual capital has a positive effect on stock prices.

The result of the statistical test t which shows that the independent variable Intellectual Capital Disclosure Index (ICDI) has not effect on PRICE. It is proved by the probability significance value (Sig. T) for the independent variable is 0,293. This regression result using the application of SPSS 23 shows that the coefficient of ICDI is more than 0,05. So, the hypothesis was not accepted.

**Table 4.4**  
**Individual Parameter Significance Test Results (Test Statistic t) for ICDI Components**

Keterangan		B	T	Sig.
1	(Constant)	-5,292	-3,619	,000
	HCDI	,983	2,270	,025
	SCDI	-,381	-,795	,428
	CCDI	-,219	-,772	,442
	NI	,451	11,243	,000
	BVE	,161	3,643	,000

However, if the results are divided into 3 components of the Intellectual Capital Disclosure Index (ICDI), namely: Human Capital Disclosure Index (HCDI), Structural Capital Disclosure Index (SCDI), and Customer Capital Disclosure Index (CCDI). There are different results:

1. for Intellectual Capital Disclosure Index (HCDI) component can be seen from regression result stating that the significance value (Sig. T) is 0,025. Which means that Intellectual Capital Disclosure Index (HCDI) has a positive effect on stock price and become one of decision making for investor. The results of this study are in line with the results of previous research by Syaipudin et al. (2010), Hayati (2015), and Puspitaningtyas (2012) stating that the information about intellectual capital of the company has value relevance.
2. However, if we look at the results of the Structural Capital Disclosure Index (SCDI), and the Customer Capital Disclosure Index (CCDI) which can be seen from (sig. T) is 0.428 and 0.442. which means that SCDI and CCDI have no positive effect on stock price and not one

component of investor in decision making. The results of this study are in line with the results of previous research by Chayati (2015), which states that after adding customer capital information does not give more value to value relevance which has a significant effect on stock prices. This study supports the research of Liu et al. (2009) states that customer capital does not affect the value of the company. This is because there is intense competition between companies, so companies are forced to give maximal service in this case low product or service prices. This is done in order increase revenue, reduce costs and retain customers. So investors or creditors do not use the information as a basis for decision making. It can be concluded that not all components of the Intellectual Capital Disclosure Index (ICDI) become one of the components of investors in decision making.

#### 4.2.2 Net Income has a positive effect on stock prices.

The results of statistical tests  $t$  which shows that the independent variable Net Income (NI) affect the PRICE. This is evidenced by the probability significance value (Sig. T) for the independent variable is 0,000. Thus the hypothesis that is accepted.

The results of this study are in line with the results of previous research by Syaipudin et al. (2010) stating that the information on the company's net income has value relevance. In this study, investors in the banking sector in Indonesia are considering net income information in making investment decisions.

#### 4.2.3 Book Value of Equity has a positive effect on stock prices.

The result of statistical test  $t$  which shows that the independent variable of Book of Value Equity influence to PRICE. This is evidenced by the probability significance value (Sig. T) for the independent variable is 0.000. Thus the hypothesis which states Book of Value Equity has a positive effect on stock prices is accepted.

The results of this study are consistent with the results of previous research by Gu and Lev (2001) who tested the value relevance of IC specific indicators and book value of equity and found that the disclosure has value relevance. Using different settings from the above research, this study succeeded in obtaining similar evidence of the value relevance of intellectual capital information. The result of hypothesis test proves that book value of equity variable has a significant positive effect on PRICE variable, which means that book of value equity in banking company in Indonesia has value relevance.

## 5. CONCLUSIONS

The conclusion of this research is: 1) the result of the statistical test  $t$  which shows that the independent variable Intellectual Capital Disclosure Index (ICDI) has not effect on PRICE. However, if the result is divided into 3 components will be seen the difference between one component with other components of his. as follows: a) there is a positive effect between Intellectual Capital and PRICE. b) there is no positive effect between Structural Capital and PRICE. c) there is no positive effect between Customer Capital and

PRICE. 2) there is a positive effect between Net Income and PRICE. 3) there is a positive effect between Book of Value Equity and PRICE.

Limitations in research include, namely: 1) this research is only done on the banking sector that has been recognized by some research has an intensive Intellectual Capital Disclosure Index (ICDI). This study does not examine the other companies' sectors whether they have IC intensive or not. Subsequent research is suggested to test the value relevance of corporate IC information in the sector of IC intensive as well as on sector which IC is not intensive, so the result will be more comprehensive. 2) this research uses only one approach in measuring disclosure variables IC information. Subsequent research is suggested to incorporate or compile the various approaches that exist in measuring the disclosure variables of IC information and separating mandatory disclosure with voluntary disclosure.

In future research there are several things to note, including: 1) this research can be developed by extending the previous research model. 2) using methods and test equipment more complete and accurate to obtain a more valid conclusion. 3) extend the research by extending the study period by adding years of research, as well as multiplying samples for future research..

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