# UNDERWRITER REPUTATION, INTELLECTUAL CAPITAL DISCLOSURE, AND UNDERPRICING

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## ABSTRACT

This study examines the effect of underwriter reputation on the intellectual capital disclosure extent and the impact of intellectual capital disclosure on underpricing. We developed a measurement method of underwriter reputation by using three indicators, i.e. trading volume, trading value, and trading frequency. Moreover, we also developed an intellectual capital disclosure index which is apropriate with Indonesian regulation. The testing result of 221 firms which conducted initial public offering in 2000-2014 showed that the underwriter reputation is the determinant of intellectual capital disclosure. We also found that intellectual capital disclosure affected underpricing negatively. Those findings indicate that intellectual capital disclosure extent may reduce information asymmetry, so as to assist potential investors in assessing the quality and prospect of a firm in the future.

*Keywords*: Underwriter Reputation; Intellectual Capital Disclosure; Underpricing.

## 1. INTRODUCTION

The intellectual capital (hereinafter called IC) phenomenon, covering its definition, measurement, and disclosure, becomes an interesting research theme for practitioners and academicians over the last 20 years. The development of research on IC is mainly due to the economic shift from the traditional economic to an economic-based knowledge (Williams, 2001). Although IC is a valuable resource for a firm, in practice, there are several problems that arise, such as the resources (human capital, innovation, customers) that do not fulfill the criteria to be considered as an intangible asset (especially in the case of controlling these assets). Moreover, there is an issue on the recognition and measurement of such intangible asset (Widiyaningrum, 2004; Purnomosidhi, 2006). In Indonesia, The Statement of Financial Accounting Standard No. 19 of 2014 on the intangible asset states that intangible asset is recognized only if: 1) there is a great possibility that a firm will get economic benefit in the future from such assets; and 2) there is a reliable measurement to measure the acquisition expense (Ikatan Akuntan Indonesia,

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2014). As a result, IC cannot be reported comprehensively in financial statements. Thus, external parties (especially investors and creditors) find difficulties in analyzing and measuring the quality and prospect of the firm in the future.

Diamond and Verrechia (1991), Baesso and Kumar (2007), as well as Singh and Van der Zahn (2008) state that an intensive information disclosure, both financial and non-financial, is a policy that may reduce asymmetric information. The extension of the disclosure (IC disclosure for this matter) will reduce asymmetric information and perception of uncertainty of the potential investors which will affect the investors' appreciation to the firm stock. Therefore, IC disclosure is an appropriate alternative to indicate the quantity and quality of IC to the stakeholders.

Studies on the determinants of IC disclosure in annual financial statements have been frequently conducted by researchers both in developed countries (Guthrie and Petty, 2000; Brennan, 2001; Bozzolan et al.,2003; Guthrie et al., 2006; White et al., 2007; Vergauwen et al., 2007; Cerbioni and Parbonetti, 2007; Bruggen et al., 2009; White et al., 2010; Hidalgo et al., 2011; Ferreira et al., 2012; Liao et al., 2013) or developing countries (Purnomosidhi, 2006; Sihotang and Winata, 2008; Joshi et al., 2011; Taliyang et al., 2011; Yi et al., 2011). However, the studies on the determinants of IC in Initial Public offering (IPO) setting are few, especially in developing country such as Indonesia. Furthermore, some empirical studies in Indonesia show that the level of IC disclosure in the IPO prospectus is relatively low; around 25 percent to 40 percent (Sari, 2011; Widarjo 2011; Prasanti and Putra, 2015). In fact, researches on IC disclosure in the context of IPO are important, because the asymmetric information level between internal parties of the firm (owner and management) and external parties (potential investors) is higher than the listed firms in stock exchange. This occurs because private firms are not responsible to publish the annual financial statement (Rashid et al., 2012). In addition, information access to firms is also very limited in developing countries. This condition complicates the potential investors in getting information about prospect and quality of a firm. The limited information may lead to the lower appreciation on offered stock price.

The importance of intellectual capital in enhancing the firm's competitiveness and value is reflected in the practice of business in Indonesia. In this case, firms with high IC intensity have a relatively high financial performance and stock performanc. The result of the research carried out by Vibiz Research Center in 2014 showed that firms with intensive intellectual capital (PT. Telekomunikasi Indonesia and PT. Kalbe Farma) top the list of the best stock issuers in Indonesia Stock Exchange in 2014. In addition, PT. Telkom also won the award in Indonesia Most Admired Knowledge Enterprise (MAKE) Award 2015 organized by Dunamis Organization Services (Press Release PT. Telkom, 2015). MAKE is a research program awarding corporations that dedicate knowledge as a means to compete globally.

Other than the importance of IC information disclosure, the issue of the determinant of IC disclosure extent in IPO context is also interesting to study more deeply. Previous literatures demonstrate that most of the prior studies on determinants of IC disclosure extent focus only on the ownership structure (Bukh et al., 2005; Rimmel et al., 2009), ownership retention (Singh and Van der Zahn, 2008), industry type of the firm, firm age, firm size (Bukh et al., 2005; Rimmel et al., 2009), and corporate governance (Singh and Van der Zahn, 2008; Rashid et al., 2012). In short, there are few prior studies that focus on the underwriter[1].

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[1] Underwriter in this research refers to the managing underwriter. In Indonesia, a managing underwriter has a duty in implementing initial public offering, selling, and underwriting the stocks.

Although previous researches examine underwriter reputation as the determinant of IC disclosure in IPO prospectus (i.e. Chen and Mohan, 2002; Singh and Van der Zahn, 2007; Rashid et al., 2012), the research result is inconsistent. Singh and Van der Zahn (2008) find that underwriter reputation affects the extent of IC disclosure level in IPO prospectus in Singapore. In contrast, Rashid et al. (2012), supporting Chen and Mohan (2002), find that underwriter reputation has insignificant effect on IC disclosure. Moreover, measurement of underwriter reputation variable in the previous research is still limited on trading frequency. In fact, there is another indicator that can be used to measure the underwriter reputation, such as trading volume and trading value. Trading volume shows the amount of stocks guaranteed and traded by underwriter, whereas the trading value shows the funding capacity owned by underwriter. The merging of those three indicators (frequency, volume, and value of trading) will indicate the capacity and the credibility of the underwriter in the capital market comprehensively. Therefore, this research tried to develop the method of underwriter reputation measurement based on such indicators in their relation with IC disclosure extent in IPO prospectus.

In addition to the underwriter reputation issue as determinant IC disclosure extent in IPO prospectus, this research also analyzes the influence of IC disclosure in reducing underpricing level. Underpricing has become the interest of practitioners and academics over the last 30 years. Underpricing is an expense assured by the capital owner on IPO as the consequence of information asymmetry. Since the 70's, there are a lot of propositions and theories on underpricing that are developed by researchers, such as signaling hypothesis (Logue, 1973), winner's course model (Rock, 1986), information revelation theory (Benveniste and Spindt, 1989), and agency model (Loughran and Ritter, 2004). Most of the previous researchers argue that underpricing occurs because of asymmetric information between issuer and potential investors (Baron, 1982; Rock, 1986; Grinblatt and Hwang, 1989; Ljungqvist, 2005).

In indonesia, the underpricing level of firms carrying out IPO is relatively high. The previous research demonstrate that the underpricing average in Indonesia is 22% to 29% (Gumanti and Alkaf, 2011; Widiyanti and Kusuma, 2013). This condition indicates that the quality signalling mechanism conducted by firms and managing underwriter has not been effective in reducing asymmetry information level and has not yet reassured the potential investors about the firm's prospect in the future yet. Singh and Van der Zahn (2007) argued that the increase of information disclosure on the future risk and unpredictable cash flow (financial and non-financial) is one of the alternative solutions to reduce asymmetric information level. The information reporting is more effective if the information is related to the topic that explicitly contributes to the asymmetric information between issuer and potential investors (Singh and Van der Zahn, 2007). IC is viewed as the main factor in creating firm's value and increasing firm's competitiveness in the knowledge- and technology-based economic era (Bontis, 2000). Thus, IC disclosure is relevant and can be considered as an important factor in reducing the level of asymmetric information (Bontis, 2000; Singh and Van der Zahn, 2007; Too et al., 2015).

This research provides contributions to IC literature in several ways. First, this research analyzes the IC disclosure in IPO prospectus in a developing country, which will reduce research gap in the context of disclosure media (annual financial statement and prospectus) and research location (developed countries and developing countries) in the previous researches. Second, this research did not only test the IC disclosure extent in IPO prospectus but also the effect of IC disclosure on underpricing. Thus, the benefit of IC disclosure in reducing the level of asymmetric information and cost of capital is observable. Third, this research focuses on underwriter role (as one of the main stakeholders) in determining the policy in IC disclosure. Moreover, this research also develops the more comprehensive measurement of underwriter reputation that is based on three indicators, such as trade frequency, trade value, and trade volume. Fourth, the index of IC disclosure developed by the researcher may serve as reference or

consideration for the underwriter and the firm's management in disclosing IC information in IPO prospectus. The following section provides a theoretical framework and hypothesis with discussion on the research method afterward. The result of the research, conclusion, and recommendation for the subsequent research will be elaborated in the end of this paper.

## 2.   LITERATURE REVIEW AND HYPHOTHESES DEVELOPMENT

### 2.1.   *Underwriter Reputation and Intellectual Capital Disclosure*

In the IPO process, underwriter is one of the stakeholders that has important role in the success of IPO for a firm. Thus, underwriter will give the best effort in order to sell stock on the price that meets the firm's quality. According to their experience, underwriter has the information about the potential investors' need in making investment decision. Therefore, underwriter will provide consideration or advice to the issuer concerning the information that reduces the level of information asymmetry. According to Bontis (2000), Singh and Van der Zahn (2007), and Rashid et al. (2012), information relevant to knowledge- and technology-based economic development is IC. One medium to provide the information about the firm's IC is through disclosure in IPO's prospectus.

Previous literatures clarify that firms with good quality will give a signal about their prospect and advantage to the market, so that the investors and other stakeholders can make a correct assessment and decision on the offered firm stocks (Yi et al., 2011). Underwriter as a party, whom task and function is to be an advisor during IPO, will support the firm's management to provide relevant information for the investors' need in order to reduce information asymmetry and quality of the firm to catch potential investors' attention.

Employing an underwriter with high reputation in IPO process may have a positive impact on investors' perception on quality of the firm issuing IPO (Certo et al., 2001). Rochayani and Setiawan (2004) argue that the use of high quality underwriter will give a signal of the firm's value for potential investors and provide credentials that the forecast of profit is made based on the prevailing rules and rational assumption. Chen and Mohan (2002) state that a firm issuing high quality IPO will give information signal of the quality of IPO by employing a high quality underwriter.

According to the arguments and findings from previous researches, we assume that the higher reputation of the underwriter leads to the higher level of IC disclosure in IPO prospectus. Therefore, the first hypothesis in this research is:

*H₁*: Underwriter reputation affects positively on the IC disclosure extent in IPO prospectus.

### 2.2.   *Intellectual Capital Disclosure and Underpricing*

Underpricing is a phenomenon that occurs in various countries including Indonesia. Underpricing is a situation in which the stock price in initial offering is lower than the stock price in secondary market. Previous researchers state that underpricing occurs because of information asymmetry between issuer and potential investors (Baron, 1982; Rock, 1986; Grinblatt and Hwang, 1989). The increase in information disclosure on risk and unpredictable future cash flow (financial and non-financial) is one of alternative solutions to reduce information asymmetry. Information reporting is considered to be more effective if this information is related to the topic that explicitly contributes to reduce information

asymmetry between issuer and investors (Singh and Van der Zahn, 2007). IC is considered as the main factor in creating firm's value and increasing firm's competitiveness in the knowledge- and technology-based economic era (Bontis, 2000). Thus, IC disclosure becomes a relevant factor in reducing the level of information asymmetry (Bontis, 2000; Singh and Van der Zahn, 2007).

Previous researches provide empirical evidence on the relationship between unpredictability of ex-ante and underpricing (for example Ritter, 1984; Megginson and Weiss, 1991; Beatty and Ritter, 1986). The prior studies show that, if a firm discloses more risk factors in IPO prospectus, the mean value of underpricing will be lower. This opinion is supported by Jog and McConomy (2003) and Schrand and Verrecchia (2004), who find the negative relationship between the level disclosure before IPO and underpricing.

However, in the context of IC disclosure, there are various findings on the relationship between IC disclosure and underpricing. Singh and Van der Zahn (2007) reveal that IC disclosure has a positive effect on underpricing level. In contrast, Too et al. (2015) provide evidence that IC disclosure coverage in IPO prospectus does not have a significant effect on underpricing. Although there is an inconsistency in the result of previous researches, based on the signaling theory, the disclosure is one of media to decrease the level of information asymmetry and to assist potential investors in making an investment decision (Welker, 1995; Jog and McConomy, 2003; Schrand and Verrecchia, 2004; Guo et al., 2004; Yosano, 2015). With the decrease in the level of information asymmetry, investors will be able to make a proper analysis on the prospect and the qualities of the firm – so it will decrease the cost of capital (Orens et al., 2009; Boujelbene and Affes, 2013). Based on theoretical review and findings of previous researches, the second hypothesis in this research is:

$H_2$: IC disclosure has a negative effect on underpricing.

## 3. RESEARCH METHOD

### 3.1. *Data and Sample*

The sample of this research consists of firms issuing IPO in Indonesia Stock Exchange in 2000 – 2014. The period is selected because the issue of IC has emerged since the end of 1990s and has been intensively studied since 2000. Moreover, period before 2000 was economically unstable due to global and Asian financial crisis in 1998-1999. Many of economic data and the results of previous researches showed that economic instability during the financial crisis of 2008 resulted in negative sentiment in global stock exchange, including Indonesia. Such circumstance led to a decrease in the stock price index from level 2,830.260 to 1,719.254 per January 2008 to September 2008, the falling of exchange rate, and rising inflation rate (Bank Indonesia, 2009; Hadi 2009; Purna et al. 2009). Moreover, in the research context on IC disclosure, some research shows that the financial crisis affect IC disclosure practices significantly (El-Banany, 2013; Garanina and Dumay, 2014; Manolopoulou and Tzelepis, 2014). If the research is conducted under these conditions, the result is biased. Therefore, the period of 2008-2009 were excluded from the sample.

The numbers of firms conducting IPO in Indonesian Stock Exchange in the period of 2000-2014 is 290 firms. After the selection of data based on the criteria and availability of information related to the research variables, the final sample is comprised of 221 firms. Data of IPO prospectus and stock price were collected from the Capital Market Reference Center (PRPM) of Indonesian Stock Exchange.

### 3.2.   Measurement Variable

### 3.2.1.  Underpricing

Underpricing is a condition when a stock price of IPO is lower than which in secondary market. According to Singh and Van der Zahn (2007) and Sahoo and Rajib (2009), underpricing is measured by the initial return with the following formula.

$$UNDP = \frac{P_{t1} - P_{t0}}{P_{t0}} \times 100\%$$

Remarks
UNDP            : *Underpricing*,
$P_{t1}$            : The closing price on the first day of trading in the secondary market,
$P_{t0}$            : Initial offering price.

### 3.2.2.  Intellectual Capital Disclosure

The level of disclosure of intellectual capital is measured by using the index developed by the researchers based on the indexes that have been formulated by previous researchers (Bukh et al., 2005; Singh and Van der Zahn, 2008; Rashid et al., 2012; Branswijck and Everaert, 2012) adapted to the regulations in Indonesia. Disclosure items of the previous research were reanalyzed by eliminating disclosure items obligated under applicable regulations in Indonesia (mandatory requirements), namely: 1) Law of the Republic of Indonesia No. 8 of 1995 on Capital Market, 2) Law of the Republic of Indonesia No. 40 of 2007 on Limited Liability Company, 3) Government Regulation No. 47 of 2012 on Social Responsibility and Environment of Limited Liability Company, and 4) Statement of Financial Accounting Standards (i.e. Statement of Financial Accounting Standards Number 19 revision of 2000, revision of 2010, and revision of 2014, specifically on disclosure). Therefore, all the items of IC disclosure in this study are voluntary disclosure items and in accordance with the regulations and environment in Indonesia.

Furthermore, the researchers conducted unstructured interviews with experts, business practitioners, and capital market practitioner[2] to validate the index. In the next step, the researchers tested the reliability of the index by comparing the analysis result of IC disclosure level on fifteen sample firms[3] together with three other researchers. Based on the analysis result, the intellectual capital disclosures were classified into six categories and divided into 86 items. The followings are the categories and the numbers of items per category of disclosure of IC.

(1)    Human resources (30 items).
(2)    Customer (19 items).
(3)    Information Technology (6 items).
(4)    Process (9 items).
(5)    Research and Development (5 items).
(6)    Strategy (17 items).

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[2] Experts consists of three academics who frequently conduct research on intellectual capital. Business practitioners consist of a financial manager and an operations director of a firm. Capital market practitioners consist of four branch managers of a security firm (underwriter).
[3] The samples were collected based on the representativeness of each sample for every year from 2000 to 2015. For each year, one firm sample with different types of industries every year was chosen.

Further, in measuring IC disclosure level, we analyzed the content of the prospectus published by the firm. Then, we scored each disclosed ítem by employing unweighted dichotomous scale. If the firms disclosed intellectual capital items in the IPO prospectus, 1 point was given, and 0 for the others. After scoring each ítem, the next step was calculating the disclosure percentage by the following formula.

$$ICD = \frac{\sum_{ij} DItem}{\sum_{ij} ADItem}$$

Remarks
| | |
|---|---|
| *ICD* | : The level of IC disclosure, |
| *Ditem* | : Total score of IC disclosure in the prospectus, |
| *ADIitem* | : Numbers of items in the index of IC disclosure. |

### 3.2.3. Underwriter Reputation

In this research, researcher developed a measurement of underwriter reputation variable from Sahoo and Rajib (2009) based on three measurement indicators, namely: (1) trade volume, (2) trade value, and (3) trade frequency. Following are the steps in measuring underwriter reputation variable.

1. Ranking the underwriter based on three indicators (volume, value, and frequency)
2. Giving a score or point to the underwriter based on the rank with the following requirements:
   a. $1^{st}$ rank underwriter is given a score of 10, $2^{nd}$ rank of which is given a score of 9, and so on until the $10^{th}$ rank of which is given a score of 1.
   b. $11^{th}$ to $15^{th}$ rank underwriter is given a score of 0.5.
   c. $16^{th}$ to $20^{th}$ rank underwriter is given a score of 0.25.
   d. $>20^{th}$ rank of underwriter is given a score of 0.125.

Table 1 below shows the technique used to score based on the rank performed in the first stage.

**Table 1:** Scoring Technique[4]

| Rank | Points or Score |
|---|---|
| 1 | 10 |
| 2 | 9 |
| 3 | 8 |
| 4 | 7 |
| 5 | 6 |
| 6 | 5 |
| 7 | 4 |
| 8 | 3 |
| 9 | 2 |
| 10 | 1 |
| Nov-15 | 0.5 |
| 16-20 | 0.25 |
| >20 | 0.125 |

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[4] Ranking and scoring technique based on Sahoo and Rajib research (2009).

3.  Calculating final score by accumulating the score of each underwriter, and dividing it by the numbers of underwriter. This approach was applied to anticipate firms that employ more than one underwriter (syndication of underwriter).
4.  Analyzing the principal components to achieve the accumulative score from the 3 indicators (volume, value, and trading frequency). Analysis of principal components was conducted to calculate the composite score from linier combination of underwriter reputation score from their trading volumes, trading values, and trading frequencies (Gudono, 2014).

### *3.2.4. Control Variable*

This research applied several control variables, namely: firm age, industry type, affiliation between underwriter and issuer, underwriting portion by underwriter, return on equity, leverage, auditor quality, institutional ownership, and managerial ownership. Firm age was calculated based on the numbers of days since the firm was established until the effective date in Indonesian stock exchange. This measurement is considered more representative than on the basis of numbers of years (White et al., 2007; Sigh and Van der Zahn 2008). Nevertheless, firm age data which is measured by the numbers of days will lead to relatively high data variance between firms. Therefore, to avoid extreme data variance and heteroscedasticity problem, the value of firm age variable was transformed to the natural logarithm. Industry type is a dummy variable, measured by giving score 1 if the sample firms are among high-tech industries (pharmaceutical, biotechnology, information technology), and 0 for the others.

Underwriter affiliation is a dummy variable, measured by giving score 1 if the underwriter had a special relationship with the firm, either directly or indirectly (through subsidiaries), and 0 for the others. Underwriting portion by underwriter was measured by stock percentage guaranteed by the underwriter. The percentage of guarantee was calculated by dividing the numbers of offered stock by the guaranteed stock. Return on Equity (ROE) was calculated by dividing year-end net income by total equity. Firms with a high ROE displayed the ability to generate profits and high investment returns to stakeholders. In this research, the leverage was calculated by dividing total debt by total assets of the firm. This ratio indicates the firm's ability to fulfill its obligations to creditors, both in short and long term. Quality of auditor is a dummy variable, measured by giving score 1 if the firm was audited by public accountant office affiliated with the big four (Big 4) public accounting firms, and 0 for the others. Institutional ownership was measured with stock percentage owned by the institutions (corporations, foundations, and government). This variable was calculated by dividing the numbers of stock owned by institutions by total stock of the firm. Managerial ownership is a dummy variable, measured by giving score 1 if the firm's management owned the firm stock, and 0 for the others.

### *3.3.  Model Development*

The research hypothesis testing applied multiple linear regression analysis. The following is the regression model in this study.

a.  Regression model of the first hypothesis testing

$$ICD = \alpha_0 + \beta_1 UNDW\_REP + e \qquad\qquad (1)$$

$$ICD = \alpha_0 + \beta_1 UNDW\_REP + \beta_2 LnAge + \beta_3 Industry + \beta_4 Affiliation +$$
$$\beta_5 UNDWR\_PORT + e \qquad\qquad (2)$$

b.  Regression model of the second hypothesis testing

$$UNDP = \alpha_0 + \beta_1ICD + \beta_2LnAge + \beta_3Industry + \beta_4Affillitation +$$
$$\beta_5UNDWR\_PORT + \beta_6ROE + \beta_7Lev + \beta_8Auditor +$$
$$\beta_9Institution + \beta_{10}Manager + e \qquad (3)$$

Remark
| | |
|---|---|
| UNDP | : *Underpricing,* |
| ICD | : Intellectual capital disclosure, |
| UNDW_REP | : *Underwriter* reputation based on trading volume, value, and frequency, |
| LnAge | : The natural logarithm of the firm age, |
| Industry | : Industry type |
| Affiliation | : Underwriter Affiliation with the issuer |
| UNDWR_PORT | : Underwriting portion |
| ROE | : Return on equity, |
| Lev | : Leverage, |
| Auditor | : Quality of auditor |
| Institution | : Institutional ownership |
| Manager | : Managerial ownership |
| e | : Error term. |

## 4.  RESULT AND DISCUSSION

### 4.1.  *Descriptive Statistic and Correlation*

Table 2 below shows description of research data including average value, minimum value, maximum value and standard deviation of each variable as well as the correlation between research variables. The result of descriptive statistical analysis on Table 2 confirms that the average level of underpricing is at 33.1%.  If compared to Malaysia's underpricing level of 23% (Too et al., 2015), the underpricing level in Indonesia is relatively higher. That condition indicates that the capital cost that shall be assured by the owner in the time of IPO issuance is still relatively high.

The average level of IC disclosure is 41%, or about 35 items out of 86 IC disclosure items. In terms of IC category, human resource is the most widely disclosed, whereas information technology is the lowest disclosure. The result of the correlation analysis shows that, in overall, the correlation level between independent variables are relatively low (<90%). It can be concluded that there is no multicollinearity problem. In addition, the test result of residual normality, autocorrelation, and heteroscedasticity also illustrate that there are no problems with regard to classical assumptions in regression model.

### 4.2.  *Hypothesis Testing*

Table 3 below provides the testing result of the first hypothesis. The result of regression analysis of Model 1 shows that the underwriter reputation regression coefficient is positive and significant at 1%. After the addition of control variables in the regression model (Model 2), the result indicates that regression coefficient does not change significantly, although that the significance level of which decreases to 5%. Thus, the first hypothesis in this research is supported by the data. These conditions explain the important role of underwriter reputation in determining information disclosure in IPO

**Table 2:** Statistic Descriptive and Correlation

| | UNDP | ICD | UNDW_VOL | UNDW_VALUE | UNDW_FREG | LnAge | Industry | Affiliation | UNDWR_PORT | ROE | Lev | Auditor | Institution | Manager |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | -0.9 | 0.2 | 0.125 | 0.125 | 0.125 | 6.07 | 0 | 0 | 0.28 | -1.82 | 0 | 0 | 0 | 0 |
| Max | 3.06 | 0.65 | 10 | 10 | 10 | 10.4 | 1 | 1 | 1 | 6.36 | 7.41 | 1 | 0.97 | 1 |
| Mean | 0.331 | 0.41 | 2.12 | 1.445 | 1.675 | 8.511 | 0.23 | 0.167 | 0.86 | 0.16 | 0.481 | 0.375 | 0.639 | 0.457 |
| SD | 0.498 | 0.095 | 2.786 | 2.302 | 2.555 | 0.759 | 0.422 | 0.374 | 0.177 | 0.499 | 0.852 | 0.485 | 0.242 | 0.499 |
| UNDP | 1 | | | | | | | | | | | | | |
| ICD | -0.332** | 1 | | | | | | | | | | | | |
| UNDW_VOL | -0.131 | -0.149* | 1 | | | | | | | | | | | |
| UNDW_VALUE | -0.201** | 0.200** | 0.648** | 1 | | | | | | | | | | |
| UNDW_FREQ | -0.077 | 0.115 | 0.746** | 0.536** | 1 | | | | | | | | | |
| LnAge | -0.186** | 0.083 | 0.001 | 0.048 | -0.108 | 1 | | | | | | | | |
| Industry | 0.043 | 0.08 | 0.095 | 0.034 | 0.093 | -0.262** | 1 | | | | | | | |
| Affiliation | -0.051 | 0.167* | -0.009 | 0.096 | -0.026 | 0.097 | 0.186** | 1 | | | | | | |
| UNDWR_PORT | -0.106 | 0.296** | 0.160* | 0.107 | 0.056 | 0.11 | -0.047 | 0.046 | 1 | | | | | |
| ROE | -0.057 | 0.087 | -0.027 | 0.011 | -0.069 | 0.053 | -0.06 | -0.096 | -0.221 | 1 | | | | |
| Lev | 0.148* | -0.126 | -0.026 | -0.07 | -0.014 | 0.005 | -0.11 | 0.068 | -0.167* | 0.123 | 1 | | | |
| Auditor | -0.086 | 0.122 | 0.104 | 0.277** | 0.132* | 0.013 | -0.048 | 0.128 | 0.03 | -0.01 | 0.003 | 1 | | |
| Institution | 0.022 | 0.032 | -0.042 | 0.07 | -0.044 | -0.072 | -0.008 | 0.146* | 0.121 | 0.081 | -0.03 | 0.057 | 1 | |
| Manager | 0.078 | 0.014 | 0.144* | -0.001 | 0.129 | -0.005 | -0.05 | -0.168* | -0.079 | -0.09 | 0.097 | -0.055 | -0.419** | 1 |

*Notes;* ***, **, * indicates significance at the 0,01; 0,05; and 0,1 level respectively. UNDP=Underpricing; ICD=Intellectual capital disclosure; UNDW_VOL=Underwriter reputation based on trading volume; UNDW_VALUE=Underwriter reputation based on trading value; UNDW_FREQ=Underwriter reputation based on trading frequency; LnAge=Natural logarithm of firm age; Industry=Industry type; Affiliation=underwriter Affiliation; UNDWR_PORT= Underwriter portion; ROE=Return on equity; Lev=Leverage; Auditor=Auditor quality; Institution=institutional ownership; Manager=Managerial ownership.

prospectus. Underwriter is responsible in preparing IPO prospectus together with the firm's management. In addition, the underwriter is also the organizer, consultant or advisor in IPO process, as well as the seller of the offered stock. Therefore, to maintain its reputation or credibility, the underwriter will carry out any possible efforts in order to sell the offered stock at a price that meets the expectation of the firm owner.

One of the possible efforts, which is undertaken by the underwriter, is to provide required information by potential investors to perform analysis of the prospect and quality of the firm. In modern business context, the information about knowledge resources (IC in this case) of the firm is needed by potential investors, because IC is very important resource in the creation of value and competitive excellence of a firm (Bukh et al., 2005; Rimmel et al., 2009). Therefore, underwriter might advise the management to disclose more extensive IC information in IPO prospectus.

**Table 3:** Testing result of first hypothesis

| Variable | Model 1 (Equation 1) | | Model 2 (Equation 2) | |
|---|---|---|---|---|
| | Coeff. | t-value | Coeff. | t-value |
| Constant | 0.410 | 64.697*** | 0.209 | 2.757*** |
| **Main Variable** | | | | |
| REP_UNDW | 0.017 | 2.643*** | 0.013 | 2.101** |
| **Control Variables** | | | | |
| LnAge | | | 0.008 | 0.948 |
| Industry | | | 0.016 | 1.076 |
| Affiliation | | | 0.034 | 2.016** |
| UNDWR_PORT | | | 0.145 | 4.184*** |
| $R^2$ | 0.031 | | 0.136 | |
| Adj. $R^2$ | 0.026 | | 0.116 | |
| F-value | 6.987 | | 6.788 | |
| Sig | 0.009 | | 0.000 | |
| N | 221 | | 221 | |

*Notes*: ***, **, * indicates significance at the 0,01; 0,05; and 0,1 level respectively. REP_UNDW =Underwriter reputation based on trading volume, trading value, and trading frequency; LnAge=Natural logarithm of firm age; Industry=Industry type; Affiliation=underwriter Affiliation; UNDWR_PORT= Underwriter portion.

Table 3 also displays the influence of control variables related to the underwriter, among which are the affiliation between issuer and underwriter, and percentage of underwriting stock. The special relationship between underwriter and issuer is one of factors that encourage the underwriter to take maximum efforts in IPO process. The success or failure of IPO might also affect the underwriter because of the affiliation. As a direct impact, the underwriter will bear the loss of IPO failure. Besides special relationship (affiliation), underwriting stock portion is also an important factor that motivates the underwriter in encouraging the management to expand IC disclosure in prospectus. The larger the stock portion guaranteed by the underwriter, the higher the level of risk assumed by the underwriter. Therefore, the underwriter will conduct any possible efforts in succeeding IPO process.

The testing result of the second hypothesis in Table 4 (OLS analysis) shows a regression coefficient IC disclosure is negative and significant at 1%. It means that hypothesis two is supported. However, some scholars argue that voluntary disclosure and underpricing might suffer endogeneity problem, namely simultaneity (Leone et al., 2007; Hanley and Hoberg, 2012; Bottazzi and Da Rin, 2016). Therefore, in case of simultaneous relationships between the variables of IC disclosure and underpricing, the estimation of OLS will be biased. Hence, as suggested by Leone et al. (2007) and Bottazzi and Da Rin,

(2016), this study used Two Stage Least Square (2SLS) to acquire a better estimation result. The first column of 2LS reports the result of the first stage regression of IC disclosure as an independent variable. The instrumental variables (IV) are ownership retention and firm size[5]. The test result demonstrated that IC disclosure variable affect underpricing negatively and significantly. Thus, the second hypothesis in this research is supported by the data. The column 2 of 2LS gives the result of the second stage of 2LS regression, regressing IPO initial returns on the independent variables and the predicted value of IC disclosure from the first stage. The coefficient of ICD in the second column is negative and significant, which is in line with the second hypothesis. These findings indicate that the more extensive IC disclosure in IPO prospectus, the higher the investors' confidence towards the quality and prospect of the firm in the future.

**Table 4:** Testing result of second hypothesis

| Variables | Model 3 (Equation 3) | | | |
| | OLS | | 2SLS | |
| | Coeff. | t-value | Coeff. | t-value |
|---|---|---|---|---|
| Constant | 1.593 | 3.721*** | 1.993 | 3.974*** |
| **Main Variables** | | | | |
| ICD | -1.633 | -4.553*** | -3.641 | -3.354*** |
| **Control Variables** | | | | |
| LnAge | -0.095 | -2.146** | -0.081 | -1.697* |
| Industry | 0.051 | 0.637 | 0.089 | 1.011 |
| Affiliation | 0.011 | 0.116 | 0.088 | 0.834 |
| UNDWR_PORT | 0.065 | 0.340 | 0.361 | 1.428 |
| ROE | -0.030 | -0.456 | 0.014 | 0.194 |
| Lev | 0.066 | 1.712* | 0.042 | 0.991 |
| Auditor | -0.044 | -0.671 | 0.003 | 0.042 |
| Institution | 0.139 | 0.958 | 0.139 | 0.896 |
| Manager | 0.099 | 1.399 | 0.134 | 1.428* |
| Hausman test | | | Chi2=4.831 (0.027) | |
| Sargan test | | | Chi2=1,010 (0.314) | |
| Adj. R$^2$ | | 0.122 | | 0.100 |
| F-value | | 4.046 | | 10.210 |
| Sig | | 0.000 | | 0.002 |
| N | | 221 | | 221 |

*Notes*: ***, **, * indicates significance at the 0,01; 0,05; and 0,1 level respectively. ICD=Intellectual capital disclosure; LnAge=Natural logarithm of firm age; Industry=Industry type; Affilitation=underwriter Affiliation; UNDWR_PORT= Underwriter portion; ROE=Return on equity; Lev=Leverage; Auditor=Auditor quality; Institution=institutional ownership; Manager=Managerial ownership.

A more extensive information disclosure will reduce asymmetric information level and provide sufficient information for potential investors to make investment decision (Welker, 1995; Jog and McConomy, 2003; Schrand and Verrecchia, 2004; Guo et al., 2004; Yosano, 2015). Therefore, potential investors give higher appreciation for the stock price of the firms with higher intellectual capital. The findings of this research are in line with the signaling theory and support the research result of Jog and McConomy (2003) and Schrand and Verrechia (2004). In addition to the IC disclosure, firm age also affects the underpricing level negatively. The firm age represents the experience and existence of a firm

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[5] Ownership retention was measured by dividing the numbers of retained shares of the previous owner by the total numbers of issued shares and fully-paid shares. The firm size was measured by the numbers of employees. Variable selection was based on the theory and the results of previous researches showing that the retention of ownership and firm size are the determinant of IC disclosure in IPO prospectus (Singh and Van der Zahn, 2008; Too et al., 2015).

in dealing with the competition and protean business environment, so that it will reduce the risk of bankruptcy in the future (Bukh et al., 2005; Rimmel et al., 2009).

## 5. CONCLUSION

In general, the result of this research provides an evidence of an underwriter's role in the determination of IC disclosure policy. Underwriter reputation is one of the determining factors in IC disclosure of IPO prospectus in Indonesia. Underwriter with high reputation is more likely to give an encouragement to the firm to disclose intellectual capital extensively in order to reduce asymmetric information and exhibiting the firm's quality to potential investors.

Additionally, the guaranteed portion and the special relationship between underwriter and issuer are also important factors that influence the determination of IC disclosure policy. Furthermore, the negative effect of the extent of IC disclosure on underpricing level gives an overview of the advantage of IC disclosure information in affecting the perceptions and behavior of the investors in making investment decision (Chan, 1983; Too et al., 2015). Thus, this result of this research may be used by the firm's management and underwriter as a reference in determining IC disclosure policy in IPO prospectus.

## 6. LIMITATION AND RECOMMENDATIONS FOR FUTURE STUDY

This research has several limitations. First, this research only analyzed the risk factor underwitten by the managing underwriter as the determinant of IC disclosure, and has not considered the benefit factor of managing underwriter in underwriting process yet. Therefore, further research may analyze the underwriting commissions (underwriting fee) as one of the underwriter's motivations in policy making to extend the intellectual capital disclosure. Second, this research only captured IC disclosure practices at a time (i.e. at the time of IPO); this research does not analyze the IC disclosure practice in long term (period after IPO). Further research might examine the consistency of IC disclosure by comparing IC disclosure extent at the time of IPO time and after IPO takes place in the context of developing countries (Branswijck and Everaert, 2012). Third, in this study, a measurement of underpricing variable uses only initial return. It does not consider the return after the IPO and the market return. The next research might perform additional analysis to underpricing measurement that considers return after the IPO and the market return.

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# APPENDIX

**Appendix 1**: Intellectual Capital Disclosure Index

| Human Resources | Customer | Information Technology |
|---|---|---|
| 1. Employee breakdown by age | 1. Number of customers | 1. Description of investments in information technology |
| 2. Employee breakdown by seniority | 2. Sale breakdown by customer | 2. Reason for investments in information technology |
| 3. Employee breakdown by gender | 3. Annual sales per segment or product | 3. Description of existing information technology systems |
| 4. Employee breakdown by nationality | 4. Average purchase size by customer | 4. Software assets held or developed by the firm |
| 5. Employee breakdown by department | 5. Dependence on key customers | 5. Description of intellectual technology facilities |
| 6. Employee breakdown by job function | 6. Description of customer involvement in firm's operations | 6. Information technology expenses |
| 7. Employee breakdown by level of education | 7. Description of customer relations | |
| 8. Rate of employee turnover | 8. Education/ training of customers | |
| 9. Comments on changes in the number of employee | 9. Ratio of customers to employees | |
| 10. Comments on employee health and safety | 10. Value added er customer or segment | |
| 11. Employee absenteeism rate | 11. Absolute market share of the firm within its industry | |
| 12. Comments on employee absentee rate | 12. Relative market share of the firm | |
| 13. Discussion of employee interviews | 13. Market share breakdown by country/ segment/ product | |
| 14. Statements of policy on competency development | 14. Repurchases by customers | |
| 15. Description of competency development programs and activities | 15. Customer's geographical breakdown | |
| 16. Education and training expenses | 16. Marketing | |
| 17. Education and training expenses by number of employees | 17. Client name | |
| 18. Employee expenses by number of employees | 18. Customer satisfaction | |
| 19. Recruitment policies of the firm | 19. Customer knowledge | |
| 20. Separate indication firm has a HRD department, division or fuction | | |
| 21. Job rotation opportunities | | |
| 22. Carrer opportunities | | |
| 23. Remuneration and incentive systems | | |
| 24. Insurance policies | | |
| 25. Statements of dependence on key personnel | | |
| 26. Revenues to employee | | |
| 27. Value added to employee | | |
| 28. Employee attitude | | |
| 29. Employee communicative activities | | |
| 30. Expert teams | | |

**Appendix 1**: Intellectual Capital Disclosure Index (cont.)

| Process | Research and Development | Strategic Statement |
|---|---|---|
| 1. Information and communication within the company<br>2. Efforts related to the working enviroment<br>3. Workig at home<br>4. Internal sharing of knowledge and information<br>5. External sharing of knowledge and information<br>6. Measure of internal processing failures<br>7. Measure of external processing failures<br>8. Discussion of fringe benefits and company social programs<br>9. Outline of environmental approvals and statement/ policies | 1. Statements of policy, strategy and objectives of research and development activities<br>2. Ratio of research and development expenses to sales<br>3. Research and development invested into basic research<br>4. Research and development invested into product design and development<br>5. Details of future prospect regarding research and development | 1. Description of new production technology<br>2. Statements of corporate quality performance<br>3. Information about strategic alliances of the firm<br>4. Objectives and reason for strategic alliances<br>5. Comments on the effects of the strategic alliances<br>6. Description of the network of suppliers and distributors<br>7. Corporate culture statements<br>8. Statements about best practices<br>9. Organisational structure of the firm<br>10. Utilisation of energy, raw materials and other input goods<br>11. Investment in the environment<br>12. Description of community involvement<br>13. Information on corporate social responsibility and objective<br>14. Description of employee contracts/ contractual issues<br>15. Future plans and strategies<br>16. Competitor names<br>17. Supplier names |

*Source*: adapted from Bukh et al. (2005); Singh and Van der Zahn (2008); Rashid et al. (2012); Branswijk and Everaert (2012).

# UNDERWRITER REPUTATION, INTELLECTUAL CAPITAL DISCLOSURE, AND UNDERPRICING

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# UNDERWRITER REPUTATION, INTELLECTUAL CAPITAL DISCLOSURE, AND UNDERPRICING

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## ABSTRACT

This study examines the effect of underwriter reputation on the intellectual capital disclosure extent and the impact of intellectual capital disclosure on underpricing. We developed a measurement method of underwriter reputation by using three indicators, i.e. trading volume, trading value, and trading frequency. Moreover, we also developed an intellectual capital disclosure index which is apropriate with Indonesian regulation. The testing result of 221 firms which conducted initial public offering in 2000-2014 showed that the underwriter reputation is the determinant of intellectual capital disclosure. We also found that intellectual capital disclosure affected underpricing negatively. Those findings indicate that intellectual capital disclosure extent may reduce information asymmetry, so as to assist potential investors in assessing the quality and prospect of a firm in the future.

*Keywords*: Underwriter Reputation; Intellectual Capital Disclosure; Underpricing.

## 1. INTRODUCTION

The intellectual capital (hereinafter called IC) phenomenon, covering its definition, measurement, and disclosure, becomes an interesting research theme for practitioners and academicians over the last 20 years. The development of research on IC is mainly due to the economic shift from the traditional economic to an economic-based knowledge (Williams, 2001). Although IC is a valuable resource for a firm, in practice, there are several problems that arise, such as the resources (human capital, innovation, customers) that do not fulfill the criteria to be considered as an intangible asset (especially in the case of controlling these assets). Moreover, there is an issue on the recognition and measurement of such intangible asset (Widiyaningrum, 2004; Purnomosidhi, 2006). In Indonesia, The Statement of Financial Accounting Standard No. 19 of 2014 on the intangible asset states that intangible asset is recognized only if: 1) there is a great possibility that a firm will get economic benefit in the future from such assets; and 2) there is a reliable measurement to measure the acquisition expense (Ikatan Akuntan Indonesia,

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2014). As a result, IC cannot be reported comprehensively in financial statements. Thus, external parties (especially investors and creditors) find difficulties in analyzing and measuring the quality and prospect of the firm in the future.

Diamond and Verrechia (1991), Baesso and Kumar (2007), as well as Singh and Van der Zahn (2008) state that an intensive information disclosure, both financial and non-financial, is a policy that may reduce asymmetric information. The extension of the disclosure (IC disclosure for this matter) will reduce asymmetric information and perception of uncertainty of the potential investors which will affect the investors' appreciation to the firm stock. Therefore, IC disclosure is an appropriate alternative to indicate the quantity and quality of IC to the stakeholders.

Studies on the determinants of IC disclosure in annual financial statements have been frequently conducted by researchers both in developed countries (Guthrie and Petty, 2000; Brennan, 2001; Bozzolan et al.,2003; Guthrie et al., 2006; White et al., 2007; Vergauwen et al., 2007; Cerbioni and Parbonetti, 2007; Bruggen et al., 2009; White et al., 2010; Hidalgo et al., 2011; Ferreira et al., 2012; Liao et al., 2013) or developing countries (Purnomosidhi, 2006; Sihotang and Winata, 2008; Joshi et al., 2011; Taliyang et al., 2011; Yi et al., 2011). However, the studies on the determinants of IC in Initial Public offering (IPO) setting are few, especially in developing country such as Indonesia. Furthermore, some empirical studies in Indonesia show that the level of IC disclosure in the IPO prospectus is relatively low, around 25 percent to 40 percent (Sari, 2011; Widarjo 2011; Prasanti and Putra, 2015). In fact, researches on IC disclosure in the context of IPO are important, because the asymmetric information level between internal parties of the firm (owner and management) and external parties (potential investors) is higher than the listed firms in stock exchange. This occurs because private firms are not responsible to publish the annual financial statement (Rashid et al., 2012). In addition, information access to firms is also very limited in developing countries. This condition complicates the potential investors in getting information about prospect and quality of a firm. The limited information may lead to the lower appreciation on offered stock price.

The importance of intellectual capital in enhancing the firm's competitiveness and value is reflected in the practice of business in Indonesia. In this case, firms with high IC intensity have a relatively high financial performance and stock performanc. The result of the research carried out by Vibiz Research Center in 2014 showed that firms with intensive intellectual capital (PT. Telekomunikasi Indonesia and PT. Kalbe Farma) top the list of the best stock issuers in Indonesia Stock Exchange in 2014. In addition, PT. Telkom also won the award in Indonesia Most Admired Knowledge Enterprise (MAKE) Award 2015 organized by Dunamis Organization Services (Press Release PT. Telkom, 2015). MAKE is a research program awarding corporations that dedicate knowledge as a means to compete globally.

Other than the importance of IC information disclosure, the issue of the determinant of IC disclosure extent in IPO context is also interesting to study more deeply. Previous literatures demonstrate that most of the prior studies on determinants of IC disclosure extent focus only on the ownership structure (Bukh et al., 2005; Rimmel et al., 2009), ownership retention (Singh and Van der Zahn, 2008), industry type of the firm, firm age, firm size (Bukh et al., 2005; Rimmel et al., 2009), and corporate governance (Singh and Van der Zahn, 2008; Rashid et al., 2012). In short, there are few prior studies that focus on the underwriter[1].

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[1] Underwriter in this research refers to the managing underwriter. In Indonesia, a managing underwriter has a duty in implementing initial public offering, selling, and underwriting the stocks.

Although previous researches examine underwriter reputation as the determinant of IC disclosure in IPO prospectus (i.e. Chen and Mohan, 2002; Singh and Van der Zahn, 2007; Rashid et al., 2012), the research result is inconsistent. Singh and Van der Zahn (2008) find that underwriter reputation affects the extent of IC disclosure level in IPO prospectus in Singapore. In contrast, Rashid et al. (2012), supporting Chen and Mohan (2002), find that underwriter reputation has insignificant effect on IC disclosure. Moreover, measurement of underwriter reputation variable in the previous research is still limited on trading frequency. In fact, there is another indicator that can be used to measure the underwriter reputation, such as trading volume and trading value. Trading volume shows the amount of stocks guaranteed and traded by underwriter, whereas the trading value shows the funding capacity owned by underwriter. The merging of those three indicators (frequency, volume, and value of trading) will indicate the capacity and the credibility of the underwriter in the capital market comprehensively. Therefore, this research tried to develop the method of underwriter reputation measurement based on such indicators in their relation with IC disclosure extent in IPO prospectus.

In addition to the underwriter reputation issue as determinant IC disclosure extent in IPO prospectus, this research also analyzes the influence of IC disclosure in reducing underpricing level. Underpricing has become the interest of practitioners and academics over the last 30 years. Underpricing is an expense assured by the capital owner on IPO as the consequence of information asymmetry. Since the 70's, there are a lot of propositions and theories on underpricing that are developed by researchers, such as signaling hypothesis (Logue, 1973), winner's course model (Rock, 1986), information revelation theory (Benveniste and Spindt, 1989), and agency model (Loughran and Ritter, 2004). Most of the previous researchers argue that underpricing occurs because of asymmetric information between issuer and potential investors (Baron, 1982; Rock, 1986; Grinblatt and Hwang, 1989; Ljungqvist, 2005).

In indonesia, the underpricing level of firms carrying out IPO is relatively high. The previous research demonstrate that the underpricing average in Indonesia is 22% to 29% (Gumanti and Alkaf, 2011; Widiyanti and Kusuma, 2013). This condition indicates that the quality signalling mechanism conducted by firms and managing underwriter has not been effective in reducing asymmetry information level and has not yet reassured the potential investors about the firm's prospect in the future yet. Singh and Van der Zahn (2007) argued that the increase of information disclosure on the future risk and unpredictable cash flow (financial and non-financial) is one of the alternative solutions to reduce asymmetric information level. The information reporting is more effective if the information is related to the topic that explicitly contributes to the asymmetric information between issuer and potential investors (Singh and Van der Zahn, 2007). IC is viewed as the main factor in creating firm's value and increasing firm's competitiveness in the knowledge- and technology-based economic era (Bontis, 2000). Thus, IC disclosure is relevant and can be considered as an important factor in reducing the level of asymmetric information (Bontis, 2000; Singh and Van der Zahn, 2007; Too et al., 2015).

This research provides contributions to IC literature in several ways. First, this research analyzes the IC disclosure in IPO prospectus in a developing country, which will reduce research gap in the context of disclosure media (annual financial statement and prospectus) and research location (developed countries and developing countries) in the previous researches. Second, this research did not only test the IC disclosure extent in IPO prospectus but also the effect of IC disclosure on underpricing. Thus, the benefit of IC disclosure in reducing the level of asymmetric information and cost of capital is observable. Third, this research focuses on underwriter role (as one of the main stakeholders) in determining the policy in IC disclosure. Moreover, this research also develops the more comprehensive measurement of underwriter reputation that is based on three indicators, such as trade frequency, trade value, and trade volume. Fourth, the index of IC disclosure developed by the researcher may serve as reference or

consideration for the underwriter and the firm's management in disclosing IC information in IPO prospectus. The following section provides a theoretical framework and hypothesis with discussion on the research method afterward. The result of the research, conclusion, and recommendation for the subsequent research will be elaborated in the end of this paper.

## 2.  LITERATURE REVIEW AND HYPHOTHESES DEVELOPMENT

### 2.1.  *Underwriter Reputation and Intellectual Capital Disclosure*

In the IPO process, underwriter is one of the stakeholders that has important role in the success of IPO for a firm. Thus, underwriter will give the best effort in order to sell stock on the price that meets the firm's quality. According to their experience, underwriter has the information about the potential investors' need in making investment decision. Therefore, underwriter will provide consideration or advice to the issuer concerning the information that reduces the level of information asymmetry. According to Bontis (2000), Singh and Van der Zahn (2007), and Rashid et al. (2012), information relevant to knowledge- and technology-based economic development is IC. One medium to provide the information about the firm's IC is through disclosure in IPO's prospectus.

Previous literatures clarify that firms with good quality will give a signal about their prospect and advantage to the market, so that the investors and other stakeholders can make a correct assessment and decision on the offered firm stocks (Yi et al., 2011). Underwriter as a party, whom task and function is to be an advisor during IPO, will support the firm's management to provide relevant information for the investors' need in order to reduce information asymmetry and quality of the firm to catch potential investors' attention.

Employing an underwriter with high reputation in IPO process may have a positive impact on investors' perception on quality of the firm issuing IPO (Certo et al., 2001). Rochayani and Setiawan (2004) argue that the use of high quality underwriter will give a signal of the firm's value for potential investors and provide credentials that the forecast of profit is made based on the prevailing rules and rational assumption. Chen and Mohan (2002) state that a firm issuing high quality IPO will give information signal of the quality of IPO by employing a high quality underwriter.

According to the arguments and findings from previous researches, we assume that the higher reputation of the underwriter leads to the higher level of IC disclosure in IPO prospectus. Therefore, the first hypothesis in this research is:

$H_1$: Underwriter reputation affects positively on the IC disclosure extent in IPO prospectus.

### 2.2.  *Intellectual Capital Disclosure and Underpricing*

Underpricing is a phenomenon that occurs in various countries including Indonesia. Underpricing is a situation in which the stock price in initial offering is lower than the stock price in secondary market. Previous researchers state that underpricing occurs because of information asymmetry between issuer and potential investors (Baron, 1982; Rock, 1986; Grinblatt and Hwang, 1989). The increase in information disclosure on risk and unpredictable future cash flow (financial and non-financial) is one of alternative solutions to reduce information asymmetry. Information reporting is considered to be more effective if this information is related to the topic that explicitly contributes to reduce information

asymmetry between issuer and investors (Singh and Van der Zahn, 2007). IC is considered as the main factor in creating firm's value and increasing firm's competitiveness in the knowledge- and technology-based economic era (Bontis, 2000). Thus, IC disclosure becomes a relevant factor in reducing the level of information asymmetry (Bontis, 2000; Singh and Van der Zahn, 2007).

Previous researches provide empirical evidence on the relationship between unpredictability of ex-ante and underpricing (for example Ritter, 1984; Megginson and Weiss, 1991; Beatty and Ritter, 1986). The prior studies show that, if a firm discloses more risk factors in IPO prospectus, the mean value of underpricing will be lower. This opinion is supported by Jog and McConomy (2003) and Schrand and Verrecchia (2004), who find the negative relationship between the level disclosure before IPO and underpricing.

However, in the context of IC disclosure, there are various findings on the relationship between IC disclosure and underpricing. Singh and Van der Zahn (2007) reveal that IC disclosure has a positive effect on underpricing level. In contrast, Too et al. (2015) provide evidence that IC disclosure coverage in IPO prospectus does not have a significant effect on underpricing. Although there is an inconsistency in the result of previous researches, based on the signaling theory, the disclosure is one of media to decrease the level of information asymmetry and to assist potential investors in making an investment decision (Welker, 1995; Jog and McConomy, 2003; Schrand and Verrecchia, 2004; Guo et al., 2004; Yosano, 2015). With the decrease in the level of information asymmetry, investors will be able to make a proper analysis on the prospect and the qualities of the firm – so it will decrease the cost of capital (Orens et al., 2009; Boujelbene and Affes, 2013). Based on theoretical review and findings of previous researches, the second hypothesis in this research is:

$H_2$: IC disclosure has a negative effect on underpricing.

## 3. RESEARCH METHOD

### 3.1. *Data and Sample*

The sample of this research consists of firms issuing IPO in Indonesia Stock Exchange in 2000 – 2014. The period is selected because the issue of IC has emerged since the end of 1990s and has been intensively studied since 2000. Moreover, period before 2000 was economically unstable due to global and Asian financial crisis in 1998-1999. Many of economic data and the results of previous researches showed that economic instability during the financial crisis of 2008 resulted in negative sentiment in global stock exchange, including Indonesia. Such circumstance led to a decrease in the stock price index from level 2,830.260 to 1,719.254 per January 2008 to September 2008, the falling of exchange rate, and rising inflation rate (Bank Indonesia, 2009; Hadi 2009; Purna et al. 2009). Moreover, in the research context on IC disclosure, some research shows that the financial crisis affect IC disclosure practices significantly (El-Banany, 2013; Garanina and Dumay, 2014; Manolopoulou and Tzelepis, 2014). If the research is conducted under these conditions, the result is biased. Therefore, the period of 2008-2009 were excluded from the sample.

The numbers of firms conducting IPO in Indonesian Stock Exchange in the period of 2000-2014 is 290 firms. After the selection of data based on the criteria and availability of information related to the research variables, the final sample is comprised of 221 firms. Data of IPO prospectus and stock price were collected from the Capital Market Reference Center (PRPM) of Indonesian Stock Exchange.

### 3.2. Measurement Variable

### 3.2.1. Underpricing

Underpricing is a condition when a stock price of IPO is lower than which in secondary market. According to Singh and Van der Zahn (2007) and Sahoo and Rajib (2009), underpricing is measured by the initial return with the following formula.

$$UNDP = \frac{P_{t1} - P_{t0}}{P_{t0}} \times 100\%$$

Remarks
UNDP          : *Underpricing*,
$P_{t1}$          : The closing price on the first day of trading in the secondary market,
$P_{t0}$          : Initial offering price.

### 3.2.2. Intellectual Capital Disclosure

The level of disclosure of intellectual capital is measured by using the index developed by the researchers based on the indexes that have been formulated by previous researchers (Bukh et al., 2005; Singh and Van der Zahn, 2008; Rashid et al., 2012; Branswijck and Everaert, 2012) adapted to the regulations in Indonesia. Disclosure items of the previous research were reanalyzed by eliminating disclosure items obligated under applicable regulations in Indonesia (mandatory requirements), namely: 1) Law of the Republic of Indonesia No. 8 of 1995 on Capital Market, 2) Law of the Republic of Indonesia No. 40 of 2007 on Limited Liability Company, 3) Government Regulation No. 47 of 2012 on Social Responsibility and Environment of Limited Liability Company, and 4) Statement of Financial Accounting Standards (i.e. Statement of Financial Accounting Standards Number 19 revision of 2000, revision of 2010, and revision of 2014, specifically on disclosure). Therefore, all the items of IC disclosure in this study are voluntary disclosure items and in accordance with the regulations and environment in Indonesia.

Furthermore, the researchers conducted unstructured interviews with experts, business practitioners, and capital market practitioner[2] to validate the index. In the next step, the researchers tested the reliability of the index by comparing the analysis result of IC disclosure level on fifteen sample firms[3] together with three other researchers. Based on the analysis result, the intellectual capital disclosures were classified into six categories and divided into 86 items. The followings are the categories and the numbers of items per category of disclosure of IC.

(1)    Human resources (30 items).
(2)    Customer (19 items).
(3)    Information Technology (6 items).
(4)    Process (9 items).
(5)    Research and Development (5 items).
(6)    Strategy (17 items).

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[2] Experts consists of three academics who frequently conduct research on intellectual capital. Business practitioners consist of a financial manager and an operations director of a firm. Capital market practitioners consist of four branch managers of a security firm (underwriter).
[3] The samples were collected based on the representativeness of each sample for every year from 2000 to 2015. For each year, one firm sample with different types of industries every year was chosen.

Further, in measuring IC disclosure level, we analyzed the content of the prospectus published by the firm. Then, we scored each disclosed item by employing unweighted dichotomous scale. If the firms disclosed intellectual capital items in the IPO prospectus, 1 point was given, and 0 for the others. After scoring each item, the next step was calculating the disclosure percentage by the following formula.

$$ICD = \frac{\sum_{ij} DItem}{\sum_{ij} ADItem}$$

Remarks
ICD                    : The level of IC disclosure,
*Ditem*                 : Total score of IC disclosure in the prospectus,
*ADIitem*               : Numbers of items in the index of IC disclosure.

### 3.2.3. *Underwriter Reputation*

In this research, researcher developed a measurement of underwriter reputation variable from Sahoo and Rajib (2009) based on three measurement indicators, namely: (1) trade volume, (2) trade value, and (3) trade frequency. Following are the steps in measuring underwriter reputation variable.

1. Ranking the underwriter based on three indicators (volume, value, and frequency)
2. Giving a score or point to the underwriter based on the rank with the following requirements:
   a. 1st rank underwriter is given a score of 10, 2nd rank of which is given a score of 9, and so on until the 10th rank of which is given a score of 1.
   b. 11th to 15th rank underwriter is given a score of 0.5.
   c. 16th to 20th rank underwriter is given a score of 0.25.
   d. > 20th rank of underwriter is given a score of 0.125.

Table 1 below shows the technique used to score based on the rank performed in the first stage.

**Table 1:** Scoring Technique[4]

| Rank | Points or Score |
|---|---|
| 1 | 10 |
| 2 | 9 |
| 3 | 8 |
| 4 | 7 |
| 5 | 6 |
| 6 | 5 |
| 7 | 4 |
| 8 | 3 |
| 9 | 2 |
| 10 | 1 |
| Nov-15 | 0.5 |
| 16-20 | 0.25 |
| >20 | 0.125 |

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[4] Ranking and scoring technique based on Sahoo and Rajib research (2009).

3. Calculating final score by accumulating the score of each underwriter, and dividing it by the numbers of underwriter. This approach was applied to anticipate firms that employ more than one underwriter (syndication of underwriter).
4. Analyzing the principal components to achieve the accumulative score from the 3 indicators (volume, value, and trading frequency). Analysis of principal components was conducted to calculate the composite score from linier combination of underwriter reputation score from their trading volumes, trading values, and trading frequencies (Gudono, 2014).

### 3.2.4. Control Variable

This research applied several control variables, namely: firm age, industry type, affiliation between underwriter and issuer, underwriting portion by underwriter, return on equity, leverage, auditor quality, institutional ownership, and managerial ownership. Firm age was calculated based on the numbers of days since the firm was established until the effective date in Indonesian stock exchange. This measurement is considered more representative than on the basis of numbers of years (White et al., 2007; Sigh and Van der Zahn 2008). Nevertheless, firm age data which is measured by the numbers of days will lead to relatively high data variance between firms. Therefore, to avoid extreme data variance and heteroscedasticity problem, the value of firm age variable was transformed to the natural logarithm. Industry type is a dummy variable, measured by giving score 1 if the sample firms are among high-tech industries (pharmaceutical, biotechnology, information technology), and 0 for the others.

Underwriter affiliation is a dummy variable, measured by giving score 1 if the underwriter had a special relationship with the firm, either directly or indirectly (through subsidiaries), and 0 for the others. Underwriting portion by underwriter was measured by stock percentage guaranteed by the underwriter. The percentage of guarantee was calculated by dividing the numbers of offered stock by the guaranteed stock. Return on Equity (ROE) was calculated by dividing year-end net income by total equity. Firms with a high ROE displayed the ability to generate profits and high investment returns to stakeholders. In this research, the leverage was calculated by dividing total debt by total assets of the firm. This ratio indicates the firm's ability to fulfill its obligations to creditors, both in short and long term. Quality of auditor is a dummy variable, measured by giving score 1 if the firm was audited by public accountant office affiliated with the big four (Big 4) public accounting firms, and 0 for the others. Institutional ownership was measured with stock percentage owned by the institutions (corporations, foundations, and government). This variable was calculated by dividing the numbers of stock owned by institutions by total stock of the firm. Managerial ownership is a dummy variable, measured by giving score 1 if the firm's management owned the firm stock, and 0 for the others.

### 3.3. Model Development

The research hypothesis testing applied multiple linear regression analysis. The following is the regression model in this study.

a. Regression model of the first hypothesis testing

$$ICD = \alpha_0 + \beta_1 UNDW\_REP + e \tag{1}$$

$$ICD = \alpha_0 + \beta_1 UNDW\_REP + \beta_2 LnAge + \beta_3 Industry + \beta_4 Affiliation + \beta_5 UNDWR\_PORT + e \tag{2}$$

b.   Regression model of the second hypothesis testing

$$UNDP = \alpha_0 + \beta_1 ICD + \beta_2 LnAge + \beta_3 Industry + \beta_4 Affilitation + \\ \beta_5 UNDWR\_PORT + \beta_6 ROE + \beta_7 Lev + \beta_8 Auditor + \\ \beta_9 Institution + \beta_{10} Manager + e \qquad (3)$$

Remark
| | |
|---|---|
| UNDP | : *Underpricing,* |
| ICD | : Intellectual capital disclosure, |
| UNDW_REP | : *Underwriter* reputation based on trading volume, value, and frequency, |
| LnAge | : The natural logarithm of the firm age, |
| Industry | : Industry type |
| Affiliation | : Underwriter Affiliation with the issuer |
| UNDWR_PORT | : Underwriting portion |
| ROE | : Return on equity, |
| Lev | : Leverage, |
| Auditor | : Quality of auditor |
| Institution | : Institutional ownership |
| Manager | : Managerial ownership |
| e | : Error term. |

## 4.   RESULT AND DISCUSSION

### 4.1.   *Descriptive Statistic and Correlation*

Table 2 below shows description of research data including average value, minimum value, maximum value and standard deviation of each variable as well as the correlation between research variables. The result of descriptive statistical analysis on Table 2 confirms that the average level of underpricing is at 33.1%. If compared to Malaysia's underpricing level of 23% (Too et al., 2015), the underpricing level in Indonesia is relatively higher. That condition indicates that the capital cost that shall be assured by the owner in the time of IPO issuance is still relatively high.

The average level of IC disclosure is 41%, or about 35 items out of 86 IC disclosure items. In terms of IC category, human resource is the most widely disclosed, whereas information technology is the lowest disclosure. The result of the correlation analysis shows that, in overall, the correlation level between independent variables are relatively low (<90%). It can be concluded that there is no multicollinearity problem. In addition, the test result of residual normality, autocorrelation, and heteroscedasticity also illustrate that there are no problems with regard to classical assumptions in regression model.

### 4.2.   *Hypothesis Testing*

Table 3 below provides the testing result of the first hypothesis. The result of regression analysis of Model 1 shows that the underwriter reputation regression coefficient is positive and significant at 1%. After the addition of control variables in the regression model (Model 2), the result indicates that regression coefficient does not change significantly, although that the significance level of which decreases to 5%. Thus, the first hypothesis in this research is supported by the data. These conditions explain the important role of underwriter reputation in determining information disclosure in IPO

**Table 2:** Statistic Descriptive and Correlation

| | UNDP | ICD | UNDW_VOL | UNDW_VALUE | UNDW_FREG | LnAge | Industry | Affiliation | UNDWR_PORT | ROE | Lev | Auditor | Institution | Manager |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Min | -0.9 | 0.2 | 0.125 | 0.125 | 0.125 | 6.07 | 0 | 0 | 0.28 | -1.82 | 0 | 0 | 0 | 0 |
| Max | 3.06 | 0.65 | 10 | 10 | 10 | 10.4 | 1 | 1 | 1 | 6.36 | 7.41 | 1 | 0.97 | 1 |
| Mean | 0.331 | 0.41 | 2.12 | 1.445 | 1.675 | 8.511 | 0.23 | 0.167 | 0.86 | 0.16 | 0.481 | 0.375 | 0.639 | 0.457 |
| SD | 0.498 | 0.095 | 2.786 | 2.302 | 2.555 | 0.759 | 0.422 | 0.374 | 0.177 | 0.499 | 0.852 | 0.485 | 0.242 | 0.499 |
| UNDP | 1 | | | | | | | | | | | | | |
| ICD | -0.332** | 1 | | | | | | | | | | | | |
| UNDW_VOL | -0.131 | -0.149* | 1 | | | | | | | | | | | |
| UNDW_VALUE | -0.201** | 0.200** | 0.648** | 1 | | | | | | | | | | |
| UNDW_FREQ | -0.077 | 0.115 | 0.746** | 0.536** | 1 | | | | | | | | | |
| LnAge | -0.186** | 0.083 | 0.001 | 0.048 | -0.108 | 1 | | | | | | | | |
| Industry | 0.043 | 0.08 | 0.095 | 0.034 | 0.093 | -0.262** | 1 | | | | | | | |
| Affiliation | -0.051 | 0.167* | -0.009 | 0.096 | -0.026 | 0.097 | 0.186** | 1 | | | | | | |
| UNDWR_PORT | -0.106 | 0.296** | 0.160* | 0.107 | 0.056 | 0.11 | -0.047 | 0.046 | 1 | | | | | |
| ROE | -0.057 | 0.087 | -0.027 | 0.011 | -0.069 | 0.053 | -0.06 | -0.096 | -0.221 | 1 | | | | |
| Lev | 0.148* | -0.126 | -0.026 | -0.07 | -0.014 | 0.005 | -0.11 | 0.068 | -0.167* | 0.123 | 1 | | | |
| Auditor | -0.086 | 0.122 | 0.104 | 0.277** | 0.132* | 0.013 | -0.048 | 0.128 | 0.03 | -0.01 | 0.003 | 1 | | |
| Institution | 0.022 | 0.032 | -0.042 | 0.07 | -0.044 | -0.072 | -0.008 | 0.146* | 0.121 | 0.081 | -0.03 | 0.057 | 1 | |
| Manager | 0.078 | 0.014 | 0.144* | -0.001 | 0.129 | -0.005 | -0.05 | -0.168* | -0.079 | -0.09 | 0.097 | -0.055 | -0.419** | 1 |

*Notes:* ***, **, * indicates significance at the 0.01; 0.05; and 0.1 level respectively. UNDP=Underpricing; ICD=Intellectual capital disclosure; UNDW_VOL=Underwriter reputation based on trading volume; UNDW_VALUE=Underwriter reputation based on trading value; UNDW_FREQ=Underwriter reputation based on trading frequency; LnAge=Natural logarithm of firm age; Industry=Industry type; Affiliation=underwriter Affiliation; UNDWR_PORT= Underwriter portion; ROE=Return on equity; Lev=Leverage; Auditor=Auditor quality; Institution=institutional ownership; Manager=Managerial ownership.

prospectus. Underwriter is responsible in preparing IPO prospectus together with the firm's management. In addition, the underwriter is also the organizer, consultant or advisor in IPO process, as well as the seller of the offered stock. Therefore, to maintain its reputation or credibility, the underwriter will carry out any possible efforts in order to sell the offered stock at a price that meets the expectation of the firm owner.

One of the possible efforts, which is undertaken by the underwriter, is to provide required information by potential investors to perform analysis of the prospect and quality of the firm. In modern business context, the information about knowledge resources (IC in this case) of the firm is needed by potential investors, because IC is very important resource in the creation of value and competitive excellence of a firm (Bukh et al., 2005; Rimmel et al., 2009). Therefore, underwriter might advise the management to disclose more extensive IC information in IPO prospectus.

**Table 3: Testing result of first hypothesis**

| Variable | Model 1 (Equation 1) | | Model 2 (Equation 2) | |
|---|---|---|---|---|
| | Coeff. | t-value | Coeff. | t-value |
| Constant | 0.410 | 64.697*** | 0.209 | 2.757*** |
| **Main Variable** | | | | |
| REP_UNDW | 0.017 | 2.643*** | 0.013 | 2.101** |
| **Control Variables** | | | | |
| LnAge | | | 0.008 | 0.948 |
| Industry | | | 0.016 | 1.076 |
| Affiliation | | | 0.034 | 2.016** |
| UNDWR_PORT | | | 0.145 | 4.184*** |
| $R^2$ | 0.031 | | 0.136 | |
| Adj. $R^2$ | 0.026 | | 0.116 | |
| F-value | 6.987 | | 6.788 | |
| Sig | 0.009 | | 0.000 | |
| N | 221 | | 221 | |

*Notes*: ***, **, * indicates significance at the 0,01; 0,05; and 0,1 level respectively. REP_UNDW =Underwriter reputation based on trading volume, trading value, and trading frequency; LnAge=Natural logarithm of firm age; Industry=Industry type; Affiliation=underwriter Affiliation; UNDWR_PORT= Underwriter portion.

Table 3 also displays the influence of control variables related to the underwriter, among which are the affiliation between issuer and underwriter, and percentage of underwriting stock. The special relationship between underwriter and issuer is one of factors that encourage the underwriter to take maximum efforts in IPO process. The success or failure of IPO might also affect the underwriter because of the affiliation. As a direct impact, the underwriter will bear the loss of IPO failure. Besides special relationship (affiliation), underwriting stock portion is also an important factor that motivates the underwriter in encouraging the management to expand IC disclosure in prospectus. The larger the stock portion guaranteed by the underwriter, the higher the level of risk assumed by the underwriter. Therefore, the underwriter will conduct any possible efforts in succeeding IPO process.

The testing result of the second hypothesis in Table 4 (OLS analysis) shows a regression coefficient IC disclosure is negative and significant at 1%. It means that hypothesis two is supported. However, some scholars argue that voluntary disclosure and underpricing might suffer endogeneity problem, namely simultaneity (Leone et al., 2007; Hanley and Hoberg, 2012; Bottazzi and Da Rin, 2016). Therefore, in case of simultaneous relationships between the variables of IC disclosure and underpricing, the estimation of OLS will be biased. Hence, as suggested by Leone et al. (2007) and Bottazzi and Da Rin,

(2016), this study used Two Stage Least Square (2SLS) to acquire a better estimation result. The first column of 2LS reports the result of the first stage regression of IC disclosure as an independent variable. The instrumental variables (IV) are ownership retention and firm size[5]. The test result demonstrated that IC disclosure variable affect underpricing negatively and significantly. Thus, the second hypothesis in this research is supported by the data. The column 2 of 2LS gives the result of the second stage of 2LS regression, regressing IPO initial returns on the independent variables and the predicted value of IC disclosure from the first stage. The coefficient of ICD in the second column is negative and significant, which is in line with the second hypothesis. These findings indicate that the more extensive IC disclosure in IPO prospectus, the higher the investors' confidence towards the quality and prospect of the firm in the future.

**Table 4:** Testing result of second hypothesis

| Variables | Model 3 (Equation 3) | | | |
| --- | --- | --- | --- | --- |
| | OLS | | 2SLS | |
| | Coeff. | t-value | Coeff. | t-value |
| Constant | 1.593 | 3.721*** | 1.993 | 3.974*** |
| **Main Variables** | | | | |
| ICD | -1.633 | -4.553*** | -3.641 | -3.354*** |
| **Control Variables** | | | | |
| LnAge | -0.095 | -2.146** | -0.081 | -1.697* |
| Industry | 0.051 | 0.637 | 0.089 | 1.011 |
| Affiliation | 0.011 | 0.116 | 0.088 | 0.834 |
| UNDWR_PORT | 0.065 | 0.340 | 0.361 | 1.428 |
| ROE | -0.030 | -0.456 | 0.014 | 0.194 |
| Lev | 0.066 | 1.712* | 0.042 | 0.991 |
| Auditor | -0.044 | -0.671 | 0.003 | 0.042 |
| Institution | 0.139 | 0.958 | 0.139 | 0.896 |
| Manager | 0.099 | 1.399 | 0.134 | 1.428* |
| Hausman test | | | Chi2=4.831 (0.027) | |
| Sargan test | | | Chi2=1,010 (0.314) | |
| Adj. R$^2$ | 0.122 | | 0.100 | |
| F-value | 4.046 | | 10.210 | |
| Sig | 0.000 | | 0.002 | |
| N | 221 | | 221 | |

*Notes*: ***, **, * indicates significance at the 0,01; 0,05; and 0,1 level respectively. ICD=Intellectual capital disclosure; LnAge=Natural logarithm of firm age; Industry=Industry type; Affilitation=underwriter Affiliation; UNDWR_PORT= Underwriter portion; ROE=Return on equity; Lev=Leverage; Auditor=Auditor quality; Institution=institutional ownership; Manager=Managerial ownership.

A more extensive information disclosure will reduce asymmetric information level and provide sufficient information for potential investors to make investment decision (Welker, 1995; Jog and McConomy, 2003; Schrand and Verrecchia, 2004; Guo et al., 2004; Yosano, 2015). Therefore, potential investors give higher appreciation for the stock price of the firms with higher intellectual capital. The findings of this research are in line with the signaling theory and support the research result of Jog and McConomy (2003) and Schrand and Verrechia (2004). In addition to the IC disclosure, firm age also affects the underpricing level negatively. The firm age represents the experience and existence of a firm

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[5] Ownership retention was measured by dividing the numbers of retained shares of the previous owner by the total numbers of issued shares and fully-paid shares. The firm size was measured by the numbers of employees. Variable selection was based on the theory and the results of previous researches showing that the retention of ownership and firm size are the determinant of IC disclosure in IPO prospectus (Singh and Van der Zahn, 2008; Too et al., 2015).

in dealing with the competition and protean business environment, so that it will reduce the risk of bankruptcy in the future (Bukh et al., 2005; Rimmel et al., 2009).

## 5.   CONCLUSION

In general, the result of this research provides an evidence of an underwriter's role in the determination of IC disclosure policy. Underwriter reputation is one of the determining factors in IC disclosure of IPO prospectus in Indonesia. Underwriter with high reputation is more likely to give an encouragement to the firm to disclose intellectual capital extensively in order to reduce asymmetric information and exhibiting the firm's quality to potential investors.

Additionally, the guaranteed portion and the special relationship between underwriter and issuer are also important factors that influence the determination of IC disclosure policy. Furthermore, the negative effect of the extent of IC disclosure on underpricing level gives an overview of the advantage of IC disclosure information in affecting the perceptions and behavior of the investors in making investment decision (Chan, 1983; Too et al., 2015). Thus, this result of this research may be used by the firm's management and underwriter as a reference in determining IC disclosure policy in IPO prospectus.

## 6.   LIMITATION AND RECOMMENDATIONS FOR FUTURE STUDY

This research has several limitations. First, this research only analyzed the risk factor underwitten by the managing underwriter as the determinant of IC disclosure, and has not considered the benefit factor of managing underwriter in underwriting process yet. Therefore, further research may analyze the underwriting commissions (underwriting fee) as one of the underwriter's motivations in policy making to extend the intellectual capital disclosure. Second, this research only captured IC disclosure practices at a time (i.e. at the time of IPO); this research does not analyze the IC disclosure practice in long term (period after IPO). Further research might examine the consistency of IC disclosure by comparing IC disclosure extent at the time of IPO time and after IPO takes place in the context of developing countries (Branswijck and Everaert, 2012). Third, in this study, a measurement of underpricing variable uses only initial return. It does not consider the return after the IPO and the market return. The next research might perform additional analysis to underpricing measurement that considers return after the IPO and the market return.

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# APPENDIX

## Appendix 1: Intellectual Capital Disclosure Index

| Human Resources | Customer | Information Technology |
|---|---|---|
| 1. Employee breakdown by age | 1. Number of customers | 1. Description of investments in information technology |
| 2. Employee breakdown by seniority | 2. Sale breakdown by customer | 2. Reason for investments in information technology |
| 3. Employee breakdown by gender | 3. Annual sales per segment or product | 3. Description of existing information technology systems |
| 4. Employee breakdown by nationality | 4. Average purchase size by customer | 4. Software assets held or developed by the firm |
| 5. Employee breakdown by department | 5. Dependence on key customers | 5. Description of intellectual technology facilities |
| 6. Employee breakdown by job function | 6. Description of customer involvement in firm's operations | 6. Information technology expenses |
| 7. Employee breakdown by level of education | 7. Description of customer relations | |
| 8. Rate of employee turnover | 8. Education/ training of customers | |
| 9. Comments on changes in the number of employee | 9. Ratio of customers to employees | |
| 10. Comments on employee health and safety | 10. Value added er customer or segment | |
| 11. Employee absenteeism rate | 11. Absolute market share of the firm within its industry | |
| 12. Comments on employee absentee rate | 12. Relative market share of the firm | |
| 13. Discussion of employee interviews | 13. Market share breakdown by country/ segment/ product | |
| 14. Statements of policy on competency development | 14. Repurchases by customers | |
| 15. Description of competency development programs and activities | 15. Customer's geographical breakdown | |
| 16. Education and training expenses | 16. Marketing | |
| 17. Education and training expenses by number of employees | 17. Client name | |
| 18. Employee expenses by number of employees | 18. Customer satisfaction | |
| 19. Recruitment policies of the firm | 19. Customer knowledge | |
| 20. Separate indication firm has a HRD department, division or fuction | | |
| 21. Job rotation opportunities | | |
| 22. Carrer opportunities | | |
| 23. Remuneration and incentive systems | | |
| 24. Insurance policies | | |
| 25. Statements of dependence on key personnel | | |
| 26. Revenues to employee | | |
| 27. Value added to employee | | |
| 28. Employee attitude | | |
| 29. Employee communicative activities | | |
| 30. Expert teams | | |

**Appendix 1**: Intellectual Capital Disclosure Index (cont.)

| Process | Research and Development | Strategic Statement |
|---|---|---|
| 1. Information and communication within the company | 1. Statements of policy, strategy and objectives of research and development activities | 1. Description of new production technology |
| 2. Efforts related to the working enviroment | 2. Ratio of research and development expenses to sales | 2. Statements of corporate quality performance |
| 3. Workig at home | 3. Research and development invested into basic research | 3. Information about strategic alliances of the firm |
| 4. Internal sharing of knowledge and information | 4. Research and development invested into product design and development | 4. Objectives and reason for strategic alliances |
| 5. External sharing of knowledge and information | 5. Details of future prospect regarding research and development | 5. Comments on the effects of the strategic alliances |
| 6. Measure of internal processing failures | | 6. Description of the network of suppliers and distributors |
| 7. Measure of external processing failures | | 7. Corporate culture statements |
| 8. Discussion of fringe benefits and company social programs | | 8. Statements about best practices |
| 9. Outline of environmental approvals and statement/ policies | | 9. Organisational structure of the firm |
| | | 10. Utilisation of energy, raw materials and other input goods |
| | | 11. Investment in the environment |
| | | 12. Description of community involvement |
| | | 13. Information on corporate social responsibility and objective |
| | | 14. Description of employee contracts/ contractual issues |
| | | 15. Future plans and strategies |
| | | 16. Competitor names |
| | | 17. Supplier names |

*Source*: adapted from Bukh et al. (2005); Singh and Van der Zahn (2008); Rashid et al. (2012); Branswijk and Everaert (2012).

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| | f. | Alamat web Jurnal | : | http://www.ijbs.unimas.my/index.php/content-abstract/all-issues/52-vol-18-no-2-2017 |
| | g. | Terikdeks di Scimagojr/Thomson Reuter ISI knowledge atau | | di.............** |

Kategori Publikasi Jurnal Ilmiah  :

(beri ˇ pada kategori yang tepat)

☑ Jurnal Ilmiah Internasional / Internasional bereputasi.**

☐ Jurnal Ilmiah Nasional Terakreditasi

☐ Jurnal Ilmiah Nasional/Nasional terindeks di DOAJ, CABI, COPERNICUS**

Hasil Penilaian *Peer Review* :

| Komponen Yang Dinilai | Nilai Maksimal Jurnal Ilmiah **40** | | | Nilai Akhir Yang Diperoleh |
|---|---|---|---|---|
| | Internasional/ Internasional bereputasi** ☑ | Nasional Terakreditasi ☐ | Nasional *** ☐ | |
| a. Kelengkapan unsur isi artikel (10%) | 4 | | | 3.9 |
| b. Ruang lingkup dan kedalaman pembahasan (30%) | 12 | | | 11 |
| c. Kecukupan dan kemutahiran data/informasi dan metodologi (30%) | 12 | | | 11 |
| d. Kelengkapan unsur dan kualitas terbitan/jurnal (30%) | 12 | | | 11.5 |
| Total = (100%) | 40 | | | 37.4 |

**Nilai Pengusul = (40% x 37.4) / 3= 4.90  (Penulis Keempat)**

**Catatan Penilaian artikel oleh Reviewer :**

a. Kelengkapan dan kesesuaian unsur isi artikel: Kelengkapan dan kesesuaian artikel ini baik, karena mecakup pendahuluan, review literatur dan pengembangan hipotesis, metode riset, diskusi hasil, kesimpulan, dan keterbatasan serta saran penelitian selanjutnya. Penulisan antar bagian juga baik karena terlihat runtut dan sistematis.

b. Ruang lingkup dan kedalaman pembahasan: Penulis menyajikan pembahasan dengan runtut dan jelas, sehingga tidak sekedar menyajikan hasil analisis berupa angka-angka. Pembahasan meliputi penjelasan dari hasil analisis dan kesesuaian dengan penelitian terdahulu. Oleh karena itu, ruang lingkup dan kedalaman pembahasannya adalah baik.

c. Kecukupan dan pemutakhiran data/informasi dan metodologi: Periode pengamatan panjang, yaitu 2000-2014. Selain itu, penulis juga mengembangkan pengukuran tersendiri terhadap pengungkapan intelektual. Metode analisis juga menggunakan berbagai model, termasuk 2LS regresi untuk menguji kemungkinan terjadinya endogeneitas yang berasal dari *simultaneity*. Oleh karena itu, kecukupan dan kemutakhiran data serta metodoginya sangatlah baik.

d. Kelengkapan unsur dan kualitas terbitan:
   Kualitas jurnal adalah baik, karena merupakan jurnal asing yang terindeks SCOPUS (Q3), ProQuest, dan SJR.

e. Indikasi Plagiat:
   Tidak ada indikasi plagiasi pada artikel ini, karena hasil uji *similarity* adalah 19 persen.

f. Kesesuaian bidang ilmu:
   Topik penelitian ini sesuai dengan bidang ilmu penulis, yaitu penelitian di bidang akuntansi keuangan.

Surakarta, ..................... 03 JUN 2020

**Prof. Drs. Djoko Suhardjanto, M.Com.(Hons)., Ph.D., Ak**
NIP. 196302031989031006
Jabatan  : Guru Besar
Pangkat,Gol Ruang  : Pembina Utama Muda/IVc
Unit Kerja  : Fakultas Ekonomi dan Bisnis
Bidang Ilmu  : Akuntansi

*Dinilai oleh dua Reviewer secara terpisah
**Coret yang tidak perlu
***Nasional/terindeks di DOAJ,CABI,Copernicus

# LEMBAR
## HASIL PENILAIAN SEJAWAT SEBIDANG ATAU *PEER REVIEW*
### KARYA ILMIAH : JURNAL ILMIAH*

Judul Karya Ilmiah (artikel) : Underwriter Reputation, Intellectual Capital Disclosure, and Underpricing

Jumlah Penulis : 4 Orang (Wahyu Widarjo, Rahmawati, Bandi, **Ari Kucara Widagdo**)

Status Pengusul : ~~Penulis pertama~~ / penulis ke 4 / ~~penulis korespondasi**~~

Identitas Jurnal Ilmiah :
    a. Nama Jurnal : **International Journal of Business and Society**
                              **SCOPUS Q3**
    b. Nomor ISSN : **1511-6670**
    c. Volume,nomor,bulan,tahun : **Vol. 18, No. 2, Tahun 2017**
    d. Penerbit : **UNIMAS**
    e. DOL artikel (jika ada) :
    f. Alamat web Jurnal : http://www.ijbs.unimas.my/index.php/content-abstract/all-issues/52-vol-18-no-2-2017
    g. Terikdeks di Scimagojr/Thomson Reuter ISI knowledge atau    di.............**

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(beri ˇ pada kategori yang tepat)
- ☐ Jurnal Ilmiah Internasional / Internasional bereputasi.**
- ☐ Jurnal Ilmiah Nasional Terakreditasi
- ☐ Jurnal Ilmiah Nasional/Nasional terindeks di DOAJ, CABI, COPERNICUS**

Hasil Penilaian *Peer Review* :

| | Komponen Yang Dinilai | Nilai Maksimal Jurnal Ilmiah **40** | | | Nilai Akhir Yang Diperoleh |
|---|---|---|---|---|---|
| | | Internasional/ Internasional bereputasi** ☐ | Nasional Terakreditasi ☐ | Nasional *** ☐ | |
| a. | Kelengkapan unsur isi artikel (10%) | 4 | | | 3.8 |
| b. | Ruang lingkup dan kedalaman pembahasan (30%) | 12 | | | 11 |
| c. | Kecukupan dan kemutahiran data/informasi dan metodologi (30%) | 12 | | | 10.5 |
| d. | Kelengkapan unsur dan kualitas terbitan/jurnal (30%) | 12 | | | 11 |
| | Total = (100%) | 40 | | | 36.3 |
| | Nilai Pengusul = (40% x 36.3) / 3 = 4.84 (Penulis Keempat) | | | | |

Catatan Penilaian artikel oleh Reviewer :

a. Kelengkapan dan kesesuaian unsur isi artikel : Unsur artikel ini sesuai dengan lengkap. Penulis menyajikan dengan baik terkait bagian pendahuluan, literatur reviu dan pengembangan hipotesis, pembahasan hasil, kesimpulan dan saran untuk penelitian selanjutnya.

b. Ruang lingkup dan kedalaman pembahasan : Ruang lingkup pembahasan baik dan mendalam. Penulis mampu menyajikan argumentasi secara runtut dan rinci mengenai pentingnya reputasi penjamin terhadap pengungkapan modal intelektual dan underpricing.

c. Kecukupan dan pemutakhiran data/informasi dan metodologi : Data yang digunakan dalam penelitian ini mencukup dan mutakhir saat publikasi. Metodologi penelitian dijabarkan dengan baik dan terstruktur sehingga mudah dipahami. Metodologi yang digunakan sudah tepat.

d. Kelengkapan unsur dan kualitas terbitan : Kualitas jurnal ini baik. Jurnal ini diterbitkan Univ Malaysia Sarawak. Selain itu IJBS ini terindeks Scopus di Quartil 3

e. Indikasi Plagiat : Artikel ini tidak terindikasi plagiasi. Hal ini bisa dilihat dari nilai similarity sebesar 19%.

f. Kesesuaian bidang ilmu : Artikel ini membahas tentang IPO dan pengungkapan modal intelektual, sehingga linier dengan penulis.

Surakarta, 05 JUN 2020

Reviewer ½ **

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