*Original Article*

# Underpricing and Intellectual Capital Disclosure: Evidence from Indonesia

Global Business Review
1–13

DOI: 10.1177/1465750319857017
journals.sagepub.com/home/gbr

**Wahyu Widarjo**[1]
**Rahmawati**[1]
**Bandi**[1]
**Ari Kuncara Widagdo**[1]

**Abstract**

In this study, we investigate the relationship between intellectual capital disclosure and underpricing. We did interviews and gave questionnaires to practitioners and academics to develop intellectual capital disclosure measurement methods (in this case, it is the weighted disclosure index). The analysis result of 189 companies which did initial public offerings in Indonesia during 2000–2014 shows that intellectual capital disclosure affects negatively on underpricing. It indicates that intellectual capital disclosure can reduce asymmetry information between the issuer and the potential investor. In addition, intellectual capital disclosure can assist potential investors in assessing the company's quality and prospects.

**Keywords**

Initial public offering, intellectual capital disclosure, underpricing

## Introduction

Underpricing is a phenomenon that often occurs during the initial public offering (IPO) in various countries, including Indonesia. Some researchers believe that underpricing is one of the quality signalling mechanisms which is done by companies to show future prospects (Grinblatt & Hwang, 1989; Hartono, 2006; Rock, 1986; Welch, 1989). On the other hand, underpricing is a cost of capital with relatively high value which is assured by owners (see Ritter, 2015). The experts have attempted to provide theoretical and empirical explanations of the phenomenon, for example, signalling hypotheses (Logue, 1973), winner's course models (Rock, 1986), information revelation theory (Benveniste & Spindt, 1989) and agency models (Loughran & Ritter, 2004). In general, the study results indicate that the underlying cause of underpricing is asymmetry information. Therefore, to reduce asymmetry information, it is necessary

[1] Department of Accounting, Faculty of Economics and Business, Universitas Sebelas Maret, Indonesia.

**Corresponding author:**
Wahyu Widarjo, Department of Accounting, Faculty of Economics and Business, Universitas Sebelas Maret, Jl. Ir. Sutami No. 36-A, Surakarta 57126, Indonesia.
E-mail: wahyu_widarjo@yahoo.com

to have quality signalling mechanisms that can be assured directly by potential investors and difficult to imitate by other companies (Certo, Covin, Daily, & Dalton, 2001).

Some earlier researchers have provided empirical evidence of quality signalling that can reduce underpricing levels, for example, by increasing ownership retention (Gumanti & Niagara, 2006), using highly reputable underwriters (Carter & Manaster, 1990; Dhamija & Arora, 2017; Sundarasen et al., 2018; Widarjo, Rahmawati, Bandi, & Widagdo, 2017), using highly reputable auditors (Titman & Trueman, 1986) and extending disclosure (Bottazi & Da Rin, 2016; Leon, Rock, & Willenborg, 2007). Although the mechanism of quality signalling by extending disclosures in the IPO prospectus has been investigated, the study of the relationship between intellectual capital disclosure and underpricing has been marginalized, especially in developing countries such as Indonesia.

Intellectual capital is an intangible resource which is believed to create added value and competitive advantage for the company, especially in the era of knowledge-based modern business (Bontis, 2000). Several previous studies have provided evidence of intellectual capital utilization in improving company performance (see Sihotang & Winata, 2008; Tandon, Purohit, & Tandon, 2016). Nevertheless, intellectual capital has not been fully reported in the company's financial report because the accounting standards only recognize a resource as an asset if it provides economic benefits in the future and its cost can be measured reliably (Rashid, Ibrahim, Othman, & See, 2012). Therefore, disclosure is one of the alternatives to show the intellectual capital of the company.

Some researchers have analysed the relationship between intellectual capital (IC) disclosure and underpricing, but the results are still inconsistent (see Singh & Van der Zahn, 2007; Too, Fadzilah, & Yusoff, 2015). Differences in the research environment and the IC disclosure index are suspected to be the cause of inconsistency of the research results. In addition, endogenous problems (especially the simultaneous relationship between IC disclosure variables and underpricing) can also affect the inconsistencies of the study results. Furthermore, the literature shows that most previous researchers only used the unweighted disclosure index to measure the IC disclosure level in the IPO prospectus (see Singh & Van der Zahn, 2007; Too et al., 2015; Widarjo et al., 2017); it is rare to use a weighted disclosure index by considering the level of company stakeholder interest. Although the weighted disclosure index is judged to have a high degree of subjectivity, however, if the index weighting is based on the opinions of independent stakeholders, then the method can reflect the reality of stakeholder interest in the IC disclosure practice. In addition, the weighted disclosure index method can obtain information about the most important categories and items of IC disclosure in stakeholder decision-making. Therefore, this study extends the previous literature by developing an IC disclosure index that is weighted based on the level of company stakeholder interest. In addition, this study also considers the possibility of a simultaneous relationship between IC disclosure and underpricing. The neglect of an endogenous issue in the research model can lead to biased and inconsistent analysis results (see Bottazi & Da Rin, 2016). Based on some of these considerations, these research results are expected to contribute theoretically and practically. The research results can be used by company management and the underwriter as a consideration in determining intellectual capital disclosure policies in the IPO prospectus. Intellectual capital disclosure can be used as one of the strategies in reducing information asymmetry and can further reduce the IPO's cost of capital.

Research on the relationship between IC disclosure and underpricing in Indonesia needs to be done for the following reasons. First, the underpricing level in Indonesia is relatively high when it is compared to other countries in the Asia Pacific, Latin America and Europe (see Ljungqvist, 2005). In addition, the underpricing level in Indonesia is still relatively high (22%–29%) in the last 10 years (Gumanti & Alkaf, 2011; Widiyanti & Kusuma, 2013; Widarjo & Bandi, 2018). Second, empirical evidence indicates a positive correlation between IC performance and financial performance (Sihotang & Winata, 2008;

Ulum, Ghozali, & Chariri, 2008). It indicates the important role of IC in increasing the value of the company. Third, Indonesia is one of the emerging capital markets in the Asia-Pacific region. The Stock Composite Index of the Indonesia Stock Exchange (IDX) is consistently listed among the best-performing indices in Asia in recent years (Claessens & Fan, 2003; Darmadi & Gunawan, 2013). The following section provides a theoretical framework and hypothesis with a discussion on the research method afterward. The result of the research and conclusion will be elaborated at the end of this article.

## Literature Review

The literature shows that underpricing is the result of asymmetry information between internal parties and external parties (Baron, 1982; Grinblatt & Hwang, 1989; Rock, 1986). Furthermore, previous researchers show that the wider disclosure of information about the company quality and prospects in the future is one of the effective signalling mechanisms to reduce asymmetry information. In knowledge-based modern business, intellectual capital is perceived as a determinant of value creation and company competitiveness. Therefore, IC disclosure becomes relevant as a determinant which can reduce asymmetry information (Singh & Van der Zahn, 2007).

Beatty and Ritter (1986) show empirical evidence of a positive relationship between risk disclosure and underpricing. The findings are supported by Jog and McConomy (2003) and Schrand and Verrecchia (2004) who found a negative relationship between disclosure levels in the pre-IPO and underpricing period. Furthermore, Leon et al. (2007) and Bottazi and Da Rin (2016) also show that voluntary disclosure may reduce underpricing levels.

In the IC disclosure context, previous researchers have conducted several studies on the relationship between IC disclosure and underpricing, but the results have not been consistent (Singh & Van der Zahn, 2007; Too et al., 2015). Singh and Van der Zahn (2007) show that IC disclosure has a positive effect on underpricing level, but Too et al. (2015) provide evidence stating that IC disclosure has no significant effect on underpricing. Nevertheless, based on the signalling theory, disclosure is a media for conveying information about the company's quality and prospects to the potential investors. The literature shows that the disclosure extent can reduce asymmetry information levels and assist potential investors in investment analysis and decision-making (Guo, Lev, & Zhou, 2004; Jog & McConomy, 2003; Schrand & Verrecchia, 2004; Welker, 1995; Yosano, Nielsen, & Rimmel, 2015). Thus, it can be assumed that the IC disclosure extent can reduce the underpricing level. Therefore, based on the literature reviews which were discussed earlier, intellectual capital disclosure is expected to have a negative impact on underpricing.

## Objectives

The main purpose of this research is to provide empirical evidence about the relationship between intellectual capital disclosure and underpricing at IPO in Indonesia. We develop the intellectual capital disclosure measurement method by weighting the intellectual capital disclosure index which is based on stakeholder perceptions at IPO. Because there is still little research on intellectual capital disclosure that uses the weighted index, especially in developing countries such as Indonesia. In addition, we also consider the possibility of endogenous problems in the relationship between intellectual capital disclosure and underpricing. This research is expected to contribute to intellectual capital disclosure literature and become a consideration for company management in disclosure policymaking, especially at IPO.

## Methodology

### Data Source

The research sample is companies which did IPO in IDX during 2000–2014. During the observation period, there were 290 companies which did IPOs on BEI. However, the publication of IPO prospectus before 2010 is mostly in hardcopy and published through the company's website or underwriter. Therefore, some data are inaccessible. In addition, there are incomplete prospectus data. Next, we do data screening to detect outliers by converting data values into standardized scores (*z*-scores) which have a mean value equal to zero and standard deviation equal to one (Ghozali, 2016). The analysis result shows that there are more than three z-score data. Therefore, we eliminate incomplete prospectus data and outlier data. After sample selection, which is based on completeness and tests of data outlier, we obtained 189 samples of companies. Data on IPO prospectus and stock price were collected from the Capital Market Reference Center (PRPM) of the IDX.

## Measurement of Variables and Empirical Models

**Dependent variable:** Underpricing is a condition when a stock price of IPO is lower than that in the secondary market. Underpricing is measured by the initial return, calculated as the closing price on the first trading day on the secondary market minus the offer price, divided by the offer price (Sahoo & Rajib, 2009; Singh & Van der Zahn, 2007; Widarjo & Bandi, 2018).

**Independent variable:** Intellectual capital disclosure is defined as the information delivery in financial reports which is related with three main elements of the company (human capital, structural capital and customer capital with the objective of giving an idea of competitive advantage). The intellectual capital disclosure level is measured by the disclosure index which is developed by Widarjo et al. (2017) with scoring modifications. Widarjo et al. (2017) uses an unweighted dichotomy scale, while we use a weighted scale. We use a weighted disclosure index in this research since we believed that different intellectual capital items have varied disclosure importance, and it is problematic to treat all disclosure items equally that were obviously not of equal importance (Yi, Davey, Eggleton, & Wang, 2015). The weighting of the index was conducted using a survey questionnaire.

We used a 5-point Likert scale[1] to gather informant opinions[2] about the importance of IC disclosure in the IPO prospectus. Then, we do a checklist and score on each prospectus company. The IC disclosure level is calculated by the formula below:

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

remarks:

ICD: The level of IC disclosure,

$D_{item}$: Total score of IC disclosure in the prospectus and

$AD_{item}$: Numbers of items in the index of IC disclosure.

**Control variables:** The control variables which are used in this study are company-specific characteristics and IPO characteristics, which consist of company age, return on equity (ROE),

leverage, ownership concentration and auditor quality. Company age was calculated based on the numbers of days since the firm was established until the effective date in the IDX. ROE was calculated by dividing year-end net income by total equity. Leverage is calculated by dividing total debt by total assets of the company. The concentration of ownership is a dummy variable which is measured by giving score 1 if there are institutions or individuals owning more than 50 per cent of the company stock and 0 for others. Quality of auditor is a dummy variable, measured by giving score 1 if the firm is audited by a public accountant office affiliated with the big four (Big 4) public accounting firms and 0 for the others. To avoid extreme data variance and heteroscedasticity, the value of the firm variable was transformed to the natural logarithm.

## Analysis

We analysed the data of 189 companies which did IPOs in 2000–2014. In 2000, Indonesia revised the accounting standards, especially in the Statement of Financial Accounting Standards (PSAK) no. 19 on intangible assets. In addition, research on intellectual capital had begun developing in Indonesia during that period. The result of data analysis in Table 1 shows that the average of IC disclosure in IPO prospectus is 43 per cent. The highest disclosure is 62 per cent and the lowest is 20 per cent. The highest-weighted disclosure item is a statement about the quality of the company performance, followed by position detail and job description of the employee in the second position and a description of future plans and strategies in the third position. These three items are the most important which need to be disclosed according to the company stakeholders.

Research hypothesis testing is conducted using multiple linear regression analysis. Here is a research model which is used to test the hypothesis.

**Table 1.** Statistic Descriptions and Correlations

| | UNDP | ICD | Age | Lev | ROE | Own_Cont | Auditor |
|---|---|---|---|---|---|---|---|
| Min | −0.90 | 0.20 | 431 | 0.00 | −1.82 | 0.00 | 0.00 |
| Max | 1.92 | 0.62 | 32.970 | 7.41 | 6.36 | 1.00 | 1.00 |
| Mean | 0.29 | 0.43 | 6.650 | 0.51 | 0.16 | 0.66 | 0.36 |
| SD | 0.37 | 0.09 | 1.699 | 0.91 | 0.53 | 0.47 | 0.59 |
| UNDP | 1.000 | | | | | | |
| ICD | −0.379 | 1.000 | | | | | |
| Age | −0.209 | 0.108 | 1.000 | | | | |
| Lev | 0.255 | −0.130 | −0.011 | 1.000 | | | |
| ROE | −0.038 | 0.097 | 0.019 | 0.117 | 1.000 | | |
| Own_Cont | 0.101 | 0.303 | −0.084 | −0.032 | −0.222 | 1.000 | |
| Auditor | −0.105 | 0.114 | 0.047 | −0.001 | −0.005 | −0.186 | 1.000 |

**Source:** The authors.

**Note:** UNDP = Underpricing; ICD = intellectual capital disclosure; Age = firm age; Lev = leverage; ROE = return on equity; Own_Cont = ownership concentration; Auditor = auditor quality.

$$UNDP = \alpha_0 + \beta_1 ICD + e \quad (1)$$

$$UNDP = \alpha_0 + \beta_1 ICD + \beta_2 LnAge + \beta_3 Lev + \beta_4 ROE + \beta_5 Own\_Cont + \beta_6 Auditor + e \quad (2)$$

remarks:
UNDP: underpricing,
ICD: intellectual capital disclosure,
LnAge: the natural logarithm of the firm age,
Lev: leverage,
ROE: return on equity,
Own_Cont: ownership concentration,
Auditor: quality of auditor and
*e*: error term.

The average underpricing of companies which did an IPO is 29 per cent. If these results are compared with the research result which is done in Malaysia and Singapore, it can be said that the average of underpricing level in Indonesia is relatively higher. The statement is based on the research results of Too et al. (2015) in Malaysia and Singh and Van der Zahn (2007) in Singapore which showed that the average underpricing levels are 23 per cent and 27 per cent, respectively. A high underpricing level is a representation of the costs which are underwritten by the company owner at IPO. The high level of underpricing in Indonesia is likely due to the company being unable to reduce the level of information asymmetry and the ineffectiveness of the quality signaling mechanism and the company's prospects to potential investors. Underpricing is a representation of wealth transfer from stakeholders (previous investors) to investors or is commonly referred to as 'money left on the table' (Ritter, 2015). Table 1 also shows results which support early assumptions with IC disclosure which have a negative correlation with underpricing.

The hypothesis testing result of the research in Table 2 shows evidence that intellectual capital disclosure affects underpricing negatively. Furthermore, the analysis results show consistency after control variables were added into the research model. The results of this study provide support for signalling theory which states that the disclosure extent can reduce asymmetry information and can assist potential investors in analysing the company quality and prospects which are appropriate with the characteristics of the signalling theory, intellectual capital disclosure is an expensive (high-cost) signalling mechanism and difficult to duplicate by other companies. That cost is related with publication of the company's private information. It can be seen on the disclosure index item which contains strategic information, so it can be easily recognized by competitors (e.g., customer name, marketing strategy, corporate innovation and corporate strategic planning). In addition, there are also items that are specific and difficult to imitate by other companies (e.g., organizational culture, customer relationships and customer satisfaction).

**Table 2.** Regression Results

| | Equation (1) | | Equation (2) | |
|---|---|---|---|---|
| Variable | Coeff. | *t*-Value | Coeff. | *t*-Value |
| Constant | 0.926 | 8.035*** | 1.299 | 4.589*** |
| **Main variable** | | | | |
| ICD | −1.468 | −5.605*** | −1.318 | −5.043*** |

*(Table 2 Continued)*

*(Table 2 Continued)*

| | Equation (1) | | Equation (2) | |
|---|---|---|---|---|
| Variable | Coeff. | *t*-Value | Coeff. | *t*-Value |
| **Control variables** | | | | |
| LnAge | | | −0.062 | −1.993** |
| Lev | | | 0.090 | 3.283*** |
| ROE | | | −0.020 | −0.427 |
| Own_Cont | | | 0.095 | 1.783* |
| Auditor | | | −0.032 | −0.619 |
| $R^2$ | | 0.144 | | 0.226 |
| Adj. $R^2$ | | 0.139 | | 0.201 |
| *F*-value | | 31.416 | | 8.869 |
| Sig | | 0.000 | | 0.000 |
| *N* | | 189 | | 189 |

**Source:** The authors.

**Note:** *, ** and *** indicate significance at 10%, 5% and 1% levels, respectively. ICD = Intellectual capital disclosure; LnAge = natural logarithm of firm age; Lev = leverage; ROE = return on equity; Own_Cont = ownership concentration; Auditor = auditor quality.

Table 2 also shows that the company's age affects negatively on underpricing. The company age represents the company's specific risk. High corporate life demonstrates the company's experience and existence in competition and thereby will reduce the company's risk (Bukh, Nielsen, Gormsen, & Mouritsen, 2005; Rimmel, Nielsen, & Yosano, 2009). High leverage can reflect a high level of company's risk (Singh & Van der Zahn, 2007). Thus, the leverage level can be expected to reduce the level of investor confidence in the quality of the company and its prospects in the future, thus increasing the underpricing of the IPO. Except for age and leverage, ownership concentration has a positive effect on underpricing. The ownership concentration reflects the right to company control. In this case, the controller may elect the board of directors and determine the company's strategic policy (Du & Dai, 2005; Sanjaya, 2010). One of the problems that often arise as a result of control right which is owned by controlling stakeholders is the increased expropriation or self-maximizing efforts with wealth distribution from others (Claessens, Djankov, Fan, & Lang, 1999). Therefore, potential investors see that companies which have concentrated ownership structure will have a bad performance in the future, thus providing a lower rating on the company.

Table 3 shows the results of the influence analysis per disclosure category on underpricing. The most influential category (highest regression coefficient) to the underpricing level is human resources (HR), while the least significant is information technology (IT). These results indicate the importance of human resource information for stakeholders (especially potential investors). Human resources are the most important resources in the company's business processes. Creation of added value and competitive advantage of the company are strongly influenced by the quality of human resources. Competent human resources will produce innovative and quality products, so as to improve company performance (Darroch, 2005; Jimenez & Valle, 2011). Therefore, many research results proved that human resources management practices have a positive effect on company performance (see Guest, 1997).

**Table 3.** Regression Results per Categories of IC Disclosure

| Variable | Coeff. | *t*-Value | Coeff. | *t*-Value | Coeff. | *t*-Value | Coeff. | *t*-Value | Coeff. | *t*-Value | Coeff. | *t*-Value |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Constant | 1.114 | 3.788*** | 1.039 | 3.552*** | 0.906 | 3.109*** | 1.130 | 4.114*** | 1.064 | 3.721*** | 1.288 | 3.942*** |
| **Main variable** | | | | | | | | | | | | |
| HR | −0.732 | −2.761*** | | | | | | | | | | |
| Costumer | | | −0.444 | −2.199** | | | | | | | | |
| IT | | | | | −0.039 | −0.577 | | | | | | |
| Process | | | | | | | −0.661 | −5.199*** | | | | |
| R&D | | | | | | | | | −0.284 | −3.353*** | | |
| Strategic | | | | | | | | | | | −0.496 | −3.524*** |
| **Control variables** | | | | | | | | | | | | |
| LnAge | −0.066 | −2.034** | −0.079 | −2.438** | −0.078 | −2.326** | −0.068 | −2.200** | −0.088 | −2.737*** | −0.075 | −2.342** |
| Lev | 0.101 | 3.531*** | 0.102 | 3.548*** | 0.108 | 3.699*** | 0.091 | 3.343*** | 0.120 | 4.234*** | 0.101 | 3.601*** |
| ROE | −0.028 | −0.573 | −0.043 | −0.878 | −0.046 | −0.940 | −0.015 | −0.326 | −0.052 | −1.091 | −0.023 | −0.486 |
| Own_Cont | 0.072 | 1.301 | 0.079 | 1.413 | 0.062 | 1.104 | 0.083 | 1.585 | 0.070 | 1.286 | 0.078 | 1.424 |
| Auditor | −0.062 | −1.154 | −0.048 | −0.862 | −0.064 | −1.152 | −0.078 | −1.518 | −0.060 | −1.123 | −0.049 | −0.921 |
| $R^2$ | | 0.153 | | 0.141 | | 0.119 | | 0.232 | | 0.169 | | 0.174 |
| Adj. $R^2$ | | 0.126 | | 0.112 | | 0.091 | | 0.207 | | 0.142 | | 0.147 |
| *F*-value | | 5.502 | | 4.975 | | 4.124 | | 9.170 | | 6.186 | | 6.408 |
| Sig | | 0.000 | | 0.000 | | 0.001 | | 0.000 | | 0.000 | | 0.000 |
| *N* | | 189 | | 189 | | 189 | | 189 | | 189 | | 189 |

**Source:** The authors.

**Note:** ** and *** indicate significance at 5% and 1% levels, respectively. HR = Human resource; IT = information technology; R&D = research and development; Strategic = strategic statement; LnAge = natural logarithm of firm age; Lev = leverage; ROE = return on equity; Own_Cont = ownership concentration; Auditor = auditor quality.

## *Robustness Checks*

We also did some additional tests to ensure that the results are robust and consistent. In addition, this additional test is also to anticipate endogenous problems, especially measurement error and simultaneity. As presented in Table 4, we re-tested with different measurements of IC disclosure variables (unweighted methods). The analysis result shows the consistency of the negative influence of IC disclosure on underpricing.

Then, we did a Hausman test to prove a simultaneous relationship between IC disclosure and underpricing. The Hausman test results in Table 5 indicate a simultaneous relationship. Therefore, we use the two-stage least-square (2SLS) method to solve the problem. Based on the study of theory and the previous research results, we chose the ownership retention variable and proceeds as instrumental variables (IVs). 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. Sargan test and weak instrument test in Table 5 indicate that the used instrumental variable is valid. Furthermore, 2SLS analysis result shows that the IC disclosure has a negative effect on underpricing. Therefore, based on the whole analysis results, it can be concluded that the research hypothesis, which states that the wider company in disclosing intellectual capital in the IPO prospectus has lower underpricing level, is supported.

Table 4. The Regression Result of Measurement Error Test

| | Weighted | | Unweighted | |
|---|---|---|---|---|
| Variable | Coeff. | *t*-Value | Coeff. | *t*-Value |
| Constant | 1.299 | 4.589*** | 1.308 | 4.639*** |
| **Main variable** | | | | |
| ICD | −1.318 | −5.043*** | −1.385 | −5.195*** |
| **Control variables** | | | | |
| LnAge | −0.062 | −1.993** | −0.063 | −2.025** |
| Lev | 0.090 | 3.283*** | 0.091 | 3.329*** |
| ROE | −0.020 | −0.427 | −0.019 | −0.419 |
| Own_Cont | 0.095 | 1.783* | 0.098 | 1.844* |
| Auditor | −0.032 | −0.619 | −0.031 | −0.593 |
| $R^2$ | | 0.226 | | 0.232 |
| Adj. $R^2$ | | 0.201 | | 0.207 |
| *F*-value | | 8.869 | | 9.162 |
| Sig | | 0.000 | | 0.000 |
| *N* | | 189 | | 189 |

**Source:** The authors.

**Note:** *, ** and *** indicate significance at 10%, 5% and 1% levels, respectively. ICD = Intellectual capital disclosure; LnAge = natural logarithm of firm age; Lev = leverage; ROE = return on equity; Own_Cont = ownership concentration; Auditor = auditor quality.

**Table 5.** The Result of Simultaneity Test Regression

| | Ordinary Least Square (OLS) | | Two-stage Least Square (2SLS) | |
|---|---|---|---|---|
| Variable | Coeff. | *t*-Value | Coeff. | *t*-Value |
| Constant | 1.298 | 4.589*** | 1.683 | 4.675*** |
| **Main variable** | | | | |
| ICD | −1.318 | −5.043*** | −2.641 | −3.624*** |
| **Control variables** | | | | |
| LnAge | −0.062 | −1.993** | −0.044 | −1.273 |
| Lev | 0.090 | 3.283*** | 0.071 | 2.281** |
| ROE | −0.019 | −0.426 | 0.005 | 0.109 |
| Own_Cont | 0.094 | 1.783* | 0.128 | 2.156** |
| Auditor | −0.032 | −0.619 | 0.003 | 0.059 |
| Hausman test | | | | $\chi^2$ = 4.689 (0.030) |
| Sargan test | | | | $\chi^2$ = 0.595 (0.440) |
| Weak instrument test | | | | *F*-statistic (2.181) = 15.551 |
| $R^2$ | | 0.226 | | 0.203 |
| Adj. $R^2$ | | 0.201 | | 0.177 |
| *F*-value | | 8.868 | | 6.246 |
| Sig | | 0.000 | | 0.000 |
| *N* | | 189 | | 189 |

**Source:** The authors.

**Note:** *, ** and *** indicate significance at 10%, 5% and 1% levels, respectively. ICD = Intellectual capital disclosure; LnAge = natural logarithm of firm age; Lev = leverage; ROE = return on equity; Own_Cont = ownership concentration; Auditor = auditor quality.

## Conclusion

We analyse the role of intellectual capital disclosure in reducing underpricing in IPOs. The literatures show that intellectual capital disclosures may be used by the company as a quality signalling mechanism to reduce information asymmetry between issuers and potential investors. Conceptually, underpricing arises from information asymmetry between the issuer and the potential investor. When there is information asymmetry, it will lead to an uncertainty of the potential investor's perception about the prospects and quality of the company. It will affect the assessment of potential investors on the company stock price.

The analysis results show that the intellectual capital disclosure extent can reduce the underpricing level. It indicates that intellectual capital disclosure can assist potential investors in analysing and assessing the company quality and prospects. In addition, intellectual capital disclosure can facilitate potential investors in distinguishing good quality and poor quality companies. This study result provide support for the signalling theory and the results of some research which states that the disclosure extent is a mechanism which can reduce information asymmetry level and can further reduce the underpricing of companies which did IPO (Beatty & Ritter, 1986; Jog & McConomy, 2003; Megginson & Weiss,

1991; Ritter, 1984; Schrand & Verrechia, 2004; Widarjo et al., 2017). This study provides an overview of the importance of intellectual capital in business practices in developing countries, especially in IPO settings. In addition, this study also provides an overview of the economic benefits of information disclosure about intellectual capital for the company owner. The expansion of intellectual capital disclosure has been proven to reduce the IPO's cost of capital. In other words, the expansion of intellectual capital disclosure can reduce the IPO's money left on the table.

Furthermore, the analysis results also show that the human resource category in the disclosure index is the category which has the strongest influence in reducing underpricing level when it is compared with other disclosure categories. It provides an overview to the owners and the company management to continue in developing the capacity and capability of human resources, so that it increases investor confidence in quality and prospects of company performance in the future. These research results support the previous literatures that human capital is the lifeblood in intellectual capital, because human capital is a source of innovation and improvement for the company (see Sawarjuwono & Kadir, 2003). Human resource is a strategic asset that can create value add and competitive advantage. Value added can be given by employees in competence development to achieve company goals, innovation, transfer of knowledge from employees to the company and changes in management culture that will provide sustainable revenue in the future for the company (Mayo, 2000).

This research still has some limitations. First, this research has not been able to explain all the factors that influence the underpricing level. This means that there are still factors that are likely to affect underpricing other than intellectual capital disclosure. Therefore, further research needs to add other variables that can influence underpricing, such as corporate governance (Darmadi & Gunawan, 2013) and issue characteristics such as underwriter reputation (Dhamija & Arora, 2017; Sundarasen et al., 2018) and auditor quality (Albring, Elder, & Zhou, 2007; Titman & Trueman, 1986). The second limitation is the underpricing measurement method that has not considered market returns. Therefore, further research can develop the underpricing measurement method by considering market returns.

## Acknowledgement

The authors are grateful to the anonymous referees of the journal for their extremely useful suggestions to improve the quality of the article. Usual disclaimers apply.

## Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

## Funding

The author(s) received no financial support for the research, authorship and/or publication of this article.

## Notes

1. 1 = not important to disclose; 2 = little importance to disclose; 3 = moderately important to disclose; 4 = very important to disclose; 5 = extremely important to disclose.
2. The informants consist of three financial analysts from investment companies, two directors, two auditors and two academics who are experts in disclosure and finance.

## References

Albring, M. S., Elder, R. J., & Zhou, J. (2007). IPO underpricing and audit quality differentiation within non-big 5 firms. *International Journal of Auditing, 11*(2), 115–131.

Baron, D. P. (1982). A model of the demand for investment banking advising and distribution services of new issues. *The Journal of Finance, 27*(4), 955–976.

Beatty, R. P., & Ritter, J. R. (1986). Investment banking, reputation and the underpricing of initial public offerings. *Journal of Financial Economics, 15*(1–2), 213–232.

Benveniste, L. M., & Spindt, P. A. (1989). How investment bankers determine the offer price and allocation of new issues. *Journal of Financial Economics, 24*(2), 343–361.

Bontis, N. (2000). Intellectual capital and business performance in Malaysian industries. *Journal of Intellectual Capital, 1*(1), 85–100.

Bottazi, L., & Da Rin, M. (2016). *Voluntary information disclosure at IPO*. Retrieved from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2810847

Bukh, P. N., Nielsen, C., Gormsen, P., & Mouritsen, J. (2005). Disclosure on information intellectual capital in Danish IPO prospectuses. *Accounting, Auditing and Accountability Journal, 18*(6), 713–732.

Carter, R., & Manaster, S. (1990). Initial public offerings and underwriter reputation. *The Journal of Finance, 45*(4), 1045–1067.

Certo, S. T., Covin, J. G., Daily, C. M., & Dalton, D. R. (2001). Wealth and the effects of founder management among IPO-stage new ventures. *Strategic Management Journal, 22*(6), 641–658.

Claessens, S., Djankov, S., Fan, J. P. H., & Lang, L. H. P. (1999). Expropriation of minority shareholders: Evidence from East Asia (Working Paper). Washington, DC: The World Bank.

Claessens, S., & Fan, J. P. H. (2003). Corporate governance in Asia: A survey. *International Review of Finance, 3*(2), 71–103.

Darmadi, S., & Gunawan, R. (2013). Underpricing, board structure, and ownership: An empirical examination of Indonesian IPO firms. *Managerial Finance, 39*(2), 181–200.

Darroch, J. (2005). Knowledge management, innovation and firm performance. *Journal of Knowledge Management, 9*(3), 101–115.

Dhamija, S., & Arora, R. K. (2017). Impact of quality certification on IPO underpricing: Evidence from India. *Global Business Review, 18*(2), 428–444.

Du, J., & Dai, Y. (2005). Ultimate corporate ownership structures and capital structures: evidence from East Asian economies. *Corporate Governance, 13*(1), 60–71.

Ghozali, I. (2016). *Multivariate analysis application with SPSS program* (Eighth edition). Semarang: Publisher Agency of Universitas Diponegoro.

Grinblatt, M., & Hwang, C. Y. (1989). Signalling and the pricing of new issues. *The Journal of Finance, 44*(2), 393–420.

Guest, D. E. (1997). Human resource management and performance: A review and research agenda. *The International Journal of Human Resource Management, 8*(3), 263–276.

Gumanti, T. A., & Alkaf, N. (2011). Underpricing in the initial public offering and secondary offering. *Jurnal Akuntansi dan Keuangan Indonesia, 8*(1), 21–35.

Gumanti, T. A., & Niagara, M. N. (2006, August 23–26). *Ownership retention, number of risk factors and underpricing in Indonesian initial public offerings*. Padang: Accounting National Symposium IX.

Guo, R. J., Lev, B., & Zhou, N. (2004). Competitive costs of disclosure by biotech IPOs. *Journal of Accounting Research, 42*(2), 319–355.

Hartono. (2006). *Analysis of ownership retention in the issuance of initial shares as a signal of company value* (*Dissertation*). Universitas Gadjah Mada.

Jimenez, D. J., & Valle, R. S. (2011). Innovation, organizational learning, and performance. *Journal of Business Research, 64*(4), 408–417.

Jog, V., & McConomy, B. J. (2003). Voluntary disclosure of management earnings forecasts in IPO prospectuses. *Journal of Business, Finance and Accounting, 30*(1/2), 125–167.

Leon, A. J., Rock, S., & Willenborg, W. (2007). Disclosure of intended use of proceeds and underpricing in initial public offerings. *Journal of Accounting Research, 45*(1), 111–153.

Ljungqvist, A. (2005). *IPO underpricing*. In B. E. Eckbo (Ed.), *Handbook of corporate finance: Empirical corporate finance* (pp. 375–422). North Holland, The Netherlands: Elsevier.

Logue, D. (1973). On the pricing of unseasoned equity issues, 1965–69. *Journal of Financial and Quantitative Analysis, 8*(1), 91–103.

Loughran, T., & Ritter, J. (2004). Why has IPO underpricing changed over time? *Financial Management, 33*(3), 5–37.
Mayo, A. (2000). The role of employee development in the growth of intellectual capital. *Personnel Review, 29*(4), 521–533.
Megginson, W., & Weiss, K. A. (1991). Venture capitalist certification in initial public offerings. *Journal of Finance, 46*(3), 879–903.
Rashid, A. A., Ibrahim, M. K., Othman, R., & See, K. F. (2012). IC disclosures in IPO prospectuses: Evidence from Malaysia. *Journal of Intellectual Capital, 13*(1), 57–80.
Rimmel, G., Nielsen, C., & Yosano, T. (2009). Intellectual capital disclosure in Japanese IPO prospectuses. *Journal of Human Resource Costing & Accounting, 13*(4), 316–337.
Ritter, J. R. (1984). The 'hot issue' market of 1980. *Journal of Business, 57*(2), 215–240.
———. (2015). *Money left on the table in IPOs by firm*. Retrieved from https://site.warrington.ufl.edu/ritter/files/2015/08/Money-Left-on-the-Table-in-IPOs-by-Firm-2015-08-04.pdf
Rock, K. (1986). Why new issues are underpriced. *Journal of Financial Economics, 15*(1–2), 187–212.
Sahoo, S., & Rajib, P. (2009, September). Investment bank prestige and IPO underpricing: An empirical study. *IIMB Management Review,* 21(3), 189–214.
Sanjaya, P. S. (2010, October 13–14). *Effect of entrechment and alignment on earnings management.* Purwokerto: Accounting National Symposium XIII.
Sawarjuwono, T., & Kadir, A. P. (2003). Intellectual capital: Treatment, measurement and reporting (a research library). *Jurnal Akuntansi & Keuangan, 5*(1), 35–57.
Schrand, C., & Verrechia, R. E. (2004). Disclosure choice and cost of capital: Evidence from underpricing in initial public offerings (Working Paper). Philadelphia, PA: The Wharton School, University of Pennsylvania.
Sihotang, P., & Winata, A. (2008). The intellectual capital disclosures of technology-driven companies: Evidence from Indonesia. *International Journal Learning and Intellectual Capital, 5*(1), 63–82.
Singh, I., & Van der Zahn, J.-L. W. M. (2007). Does intellectual capital disclosure reduce an IPOs cost of capital: The case of underpricing. *Journal of Intellectual Capital, 8*(3), 494–516.
Sundarasen, S. D., Khan, A., & Rajangam, N. (2018). Signalling roles of prestigious auditors and underwriters in an emerging IPO market. *Global Business Review, 19*(1), 69–84.
Tandon, K., Purohit, H., & Tandon, D. (2016). Measuring intellectual capital and its impact on financial performance: Empirical evidence from CNX nifty companies. *Global Business Review, 17*(4), 980–997.
Titman, S., & Trueman, B. (1986). Information quality and the valuation of new issues. *Journal of Accounting and Economics, 8*(2), 159–172.
Too, S. W., Fadzilah, W., & Yusoff, W. (2015). Exploring intellectual capital disclosure as a mediator for the relationship between IPO firm-specific characteristics and underpricing. *Journal of Intellectual Capital, 16*(3), 1–26.
Ulum, I., Ghozali, I., & Chariri, A. (2008, July 23–26). *Intellectual capital and corporate financial performance: An analysis with partial least squares approach.* Pontianak: Accounting National Symposium XI.
Welch, I. (1989). Seasoned offerings, imitation costs, and the underpricing of initial public offerings. *Journal of Finance, 44*(2), 421–449.
Welker, M. (1995). Disclosure policy, information asymmetry, and liquidity in equity markets. *Contemporary Accounting Research, 11*(2), 801–827.
Widarjo, W., & Bandi. (2018). Determinants of intellectual capital disclosure in the IPOs and its impact on underpricing: Evidence from Indonesia. *International Journal of Learning and Intellectual Capital, 15*(1), 1–19.
Widarjo, W., Rahmawati, B., & Widagdo, A. K. (2017). Underwriter reputation, intellectual capital disclosure, and underpricing. *International Journal of Business and Society, 18*(2), 227–244.
Widiyanti, N. W., & Kusuma, F. D. (2013, September 25–28). *Analysis of accounting and non-accounting information on the initial return of shares of IPO companies in Indonesia stock exchange.* Manado: Accounting National Symposium XVI.
Yi, A., Davey, H., Eggleton, I. R. C., & Wang, Z. (2015). Intellectual capital disclosure and the information gap: Evidence from China. *Advances in Accounting, Incorporating Advances in International Accounting, 31*(2), 179–187.
Yosano, T., Nielsen, C., & Rimmel, G. (2015). The effects of disclosing intellectual capital information on the long-term stock price performance of Japanese IPO's. *Accounting Forum, 39*(2), 83–96.

# Underpricing and Intellectual Capital Disclosure: Evidence from Indonesia

*by* Leon Akbar

**Submission date:** 06-Apr-2020 02:47PM (UTC+0700)
**Submission ID:** 1290846988
**File name:** GBR857017_-_edited.pdf (536.91K)
**Word count:** 6213
**Character count:** 34191

# Underpricing and Intellectual Capital Disclosure: Evidence from Indonesia

Global Business Review
1–13

DOI: 10.1177/1465750319857017
journals.sagepub.com/home/gbr

Wahyu Widarjo[1]
Rahmawati[1]
Bandi[1]
Ari Kuncara Widagdo[1]

Abstract

In this study, we investigate the relationship between intellectual capital disclosure and underpricing. We did interviews and gave questionnaires to practitioners and academics to develop intellectual capital disclosure measurement methods (in this case, it is the weighted disclosure index). The analysis result of 189 companies which did initial public offerings in Indonesia during 2000–2014 shows that intellectual capital disclosure affects negatively on underpricing. It indicates that intellectual capital disclosure can reduce asymmetry information between the issuer and the potential investor. In addition, intellectual capital disclosure can assist potential investors in assessing the company's quality and prospects.

Keywords

Initial public offering, intellectual capital disclosure, underpricing

## Introduction

Underpricing is a phenomenon that often occurs during the initial public offering (IPO) in various countries, including Indonesia. Some researchers believe that underpricing is one of the quality signalling mechanisms which is done by companies to show future prospects (Grinblatt & Hwang, 1989; Hartono, 2006; Rock, 1986; Welch, 1989). On the other hand, underpricing is a cost of capital with relatively high value which is assured by owners (see Ritter, 2015). The experts have attempted to provide theoretical and empirical explanations of the phenomenon, for example, signalling hypotheses (Logue, 1973), winner's course models (Rock, 1986), information revelation theory (Benveniste & Spindt, 1989) and agency models (Loughran & Ritter, 2004). In general, the study results indicate that the underlying cause of underpricing is asymmetry information. Therefore, to reduce asymmetry information, it is necessary

[1]Department of Accounting, Faculty of Economics and Business, Universitas Sebelas Maret, Indonesia.

Corresponding author:

Wahyu Widarjo, Department of Accounting, Faculty of Economics and Business, Universitas Sebelas Maret, Jl. Ir. Sutami No. 36-A, Surakarta 57126, Indonesia.
E-mail: wahyu_widarjo@yahoo.com

to have quality signalling mechanisms that can be assured directly by potential investors and difficult to imitate by other companies (Certo, Covin, Daily, & Dalton, 2001).

Some earlier researchers have provided empirical evidence of quality signalling that can reduce underpricing levels, for example, by increasing ownership retention (Gumanti & Niagara, 2006), using highly reputable underwriters (Carter & Manaster, 1990; Dhamija & Arora, 2017; Sundarasen et al., 2017; Widarjo, Rahmawati, Bandi, & Widagdo, 2017), using highly reputable auditors (Titman & Trueman, 1986) and extending disclosure (Bottazi & Da Rin, 2016; Leon, Rock, & Willenborg, 2007). Although the mechanism of quality signalling by extending disclosures in the IPO prospectus has been investigated, the study of the relationship between intellectual capital disclosure and underpricing has been marginalized, especially in developing countries such as Indonesia.

Intellectual capital is an intangible resource which is believed to create added value and competitive advantage for the company, especially in the era of knowledge-based modern business (Bontis, 2000). Several previous studies have provided evidence of intellectual capital utilization in improving company performance (see Sihotang & Winata, 2008; Tandon, Purohit, & Tandon, 2016). Nevertheless, intellectual capital has not been fully reported in the company's financial report because the accounting standards only recognize a resource as an asset if it provides economic benefits in the future and its cost can be measured reliably (Rashid, Ibrahim, Othman, & See, 2012). Therefore, disclosure is one of the alternatives to show the intellectual capital of the company.

Some researchers have analysed the relationship between IC disclosure and underpricing, but the results are still inconsistent (see Singh & Van der Zahn, 2007; Too, Fadzilah, & Yusoff, 2015). Differences in the research environment and the IC disclosure index are suspected to be the cause of inconsistency of the research results. In addition, endogenous problems (especially the simultaneous relationship between IC disclosure variables and underpricing) can also affect the inconsistencies of the study results. Furthermore, the literature shows that most previous researchers only used the unweighted disclosure index to measure the IC disclosure level in the IPO prospectus (see Singh & Van der Zahn, 2007; Too et al., 2015; Widarjo et al., 2017); it is rare to use a weighted disclosure index by considering the level of company stakeholder interest. Although the weighted disclosure index is judged to have a high degree of subjectivity, however, if the index weighting is based on the opinions of independent stakeholders, then the method can reflect the reality of stakeholder interest in the IC disclosure practice. In addition, the weighted disclosure index method can obtain information about the most important categories and items of IC disclosure in stakeholder decision-making. Therefore, this study extends the previous literature by developing an IC disclosure index that

is weighted based on the level of company stakeholder interest. In addition, this study also considers the possibility of a simultaneous relationship between IC disclosure and underpricing. The neglect of an endogenous issue in the research model can lead to biased and inconsistent analysis results (see Bottazi & Da Rin, 2016). Based on some of these considerations, these research results are expected to contribute theoretically and practically. The research results can be used by company management and the underwriter as a consideration in determining intellectual capital disclosure policies in the IPO prospectus. Intellectual capital disclosure can be used as one of the strategies in reducing information asymmetry and can further reduce the IPO's cost of capital.

Research on the relationship between IC disclosure and underpricing in Indonesia needs to be done for the following reasons. First, the underpricing level in Indonesia is relatively high when it is compared to other countries in the Asia Pacific, Latin America and Europe (see Ljungqvist, 2005). In addition, the underpricing level in Indonesia is still relatively high (22%–29%) in the last 10 years (Gumanti & Alkaf,
2011; Widiyanti & Kusuma, 2013). Second, empirical evidence indicates a positive correlation between IC performance and financial performance (Sihotang & Winata, 2008; Ulum, Ghozali, & Chariri, 2008). It indicates the important role of IC in increasing the value of the company. Third, Indonesia is one of the

emerging capital markets in the Asia-Pacific region. The Stock Composite Index of the Indonesia Stock Exchange (IDX) is consistently listed among the best-performing indices in Asia in recent years (Claessens & Fan, 2003; Darmadi & Gunawan, 2013). The following section provides a theoretical framework and hypothesis with a discussion on the research method afterward. The result of the research and conclusion will be elaborated at the end of this article.

## Literature Review

The literature shows that underpricing is the result of asymmetry information between internal parties and external parties (Baron, 1982; Grinblatt & Hwang, 1989; Rock, 1986). Furthermore, previous researchers show that the wider disclosure of information about the company quality and prospects in the future is one of the effective signalling mechanisms to reduce asymmetry information. In knowledge- based modern business, intellectual capital is perceived as a determinant of value creation and company competitiveness. Therefore, IC disclosure becomes relevant as a determinant which can reduce asymmetry information (Singh & Van der Zahn, 2007).

Beatty and Ritter (1986) show empirical evidence of a positive relationship between risk disclosure and underpricing. The findings are supported by Jog and McConomy (2003) and Schrand and Verrecchia (2004) who found a negative relationship between disclosure levels in the pre-IPO and underpricing period. Furthermore, Leon et al. (2007) and Bottazi and Da Rin (2016) also show that voluntary disclosure may reduce underpricing levels.

In the IC disclosure context, previous researchers have conducted several studies on the relationship between IC disclosure and underpricing, but the results have not been consistent (Singh & Van der Zahn,
2007; Too et al., 2015). Singh and Van der Zahn (2007) show that IC disclosure has a positive effect on underpricing level, but Too et al. (2015) provide evidence stating that IC disclosure has no significant effect on underpricing. Nevertheless, based on the signalling theory, disclosure is a media for conveying information about the company's quality and prospects to the potential investors. The literature shows that the disclosure extent can reduce asymmetry information levels and assist

potential investors in investment analysis and decision-making (Guo, Lev, & Zhou, 2004; Jog & McConomy, 2003; Schrand & Verrecchia, 2004; Welker, 1995; Yosano, Nielsen, & Rimmel, 2015). Thus, it can be assumed that the IC disclosure extent can reduce the underpricing level. Therefore, based on the literature reviews which we discussed earlier, intellectual capital disclosure is expected to have a negative impact on underpricing.

## Objectives

The main purpose of this research is to provide empirical evidence about the relationship between intellectual capital disclosure and underpricing at IPO in Indonesia. We develop the intellectual capital disclosure measurement method by weighting the intellectual capital disclosure index which is based on stakeholder perceptions at IPO. Because there is still little research on intellectual capital disclosure that uses the weighted index, especially in developing countries such as Indonesia. In addition, we also consider the possibility of endogenous problems in the relationship between intellectual capital disclosure and underpricing. This research is expected to contribute to intellectual capital disclosure literature and become a consideration for company management in disclosure policymaking, especially at IPO.

## Methodology

### *Data Source*

The research sample is companies which did IPO in IDX during 2000–2014. During the observation period, there were 290 companies which did IPOs on BEI. However, the publication of IPO prospectus before 2010 is mostly in hardcopy and published through the company's website or underwriter. Therefore, some data are inaccessible. In addition, there are incomplete prospectus data. Next, we do data screening to detect outliers by converting data values into standardized scores (z-scores) which have a mean value equal to zero and standard deviation equal to one (Ghozali, 2016). The analysis result shows that there are more than three z-score data. Therefore, we eliminate incomplete prospectus data and outlier data. After sample selection, which is based on completeness and tests of data outlier, we obtained 189 samples of companies. Data on IPO prospectus and stock price were collected from the Capital Market Reference Center (PRPM) of the IDX.

## Measurement of Variables and Empirical Models

**Dependent variable:** Underpricing is a condition when a stock pr 31 of IPO is lower than that in the secondary market. Underpricing is measured by the initial return, calculated as the closing price on the first trading day on the secondary market minus the offer price, divided by the offer price (Sahoo & Rajib, 2009; Singh & Van der Zahn, 2007).

**Independent variable:** Intellectual capital disclosure is defined 64 the information delivery in financial reports which is related with three main elements of the company (human capital, str 72 ural capital and customer capital with the objective of giving an idea of competitive advantage). The intellectual capital disclosure level is measured by the disclosure index which is developed by Widarjo (2017) with scoring modifications. Widarjo (2017) uses an unweighted dichotomy scale, while we use a weighted scale. We use a weighted disclosure index in this research since we believed that different intellectual capital items have varied disclosure importance, and it is problematic to treat all disclosure items equally that were obviously not of equal importance (Yi, Davey, Eggleton, & Wang, 2015). The weighting of the index was conducted using a survey questionnaire.

We used a 5-point Likert scale[1] to gather informant opinions[2] about the importance of IC disclosure in the IPO prospectus. Then, we do a checklist and score on each prospectus company. The IC disclosure level is calculated by the formula below:

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

remarks:
ICD: The level of IC disclosure,
$D_{item}$: Total score of IC disclosure in the prospectus and
$AD_{item}$: Numbers of items in the index of IC disclosure.

**Control variables:** The control variables which are used in this study are company-specific characteristics and IPO characteristics, which consist of company age, return on equity (ROE),

leverage, ownership concentration and auditor quality. Company age was calculated based on the numbers of days since the firm was established until the effective date in the IDX. ROE was calculated by dividing year-end net income by total equity. Leverage is calculated by dividing total debt by total assets of the company. The concentration of ownership is a dummy variable which is measured by giving score 1 if there are institutions or individuals owning more than 50 per cent of the company stock and 0 for others. Quality of auditor is a dummy variable, measured by giving score 1 if the firm is audited by a public accountant office affiliated with the big four (Big 4) public accounting firms and 0 for the others. To avoid extreme data variance and heteroscedasticity, the value of the firm variable was transformed to the natural logarithm.

## Analysis

We analysed the data of 189 companies which did IPOs in 2000–2014. In 2000, Indonesia revised the accounting standards, especially in the Statement of Financial Accounting Standards (PSAK) no. 19 on intangible assets. In addition, research on intellectual capital had begun developing in Indonesia during that period. The result of data analysis in Table 1 shows that the average of IC disclosure in IPO prospectus is 43 per cent. The highest disclosure is 62 per cent and the lowest is 20 per cent. The highest-weighted disclosure item is a statement about the quality of the company performance, followed by position detail and job description of the employee in the second position and a description of future plans and strategies in the third position. These three items are the most important which need to be disclosed according to the company stakeholders.

Research hypothesis testing is conducted using multiple linear regression analysis. Here is a research model which is used to test the hypothesis.

Table 1. Statistic Descriptions and Correlations

| | UNDP | ICD | Age | Lev | ROE | Own_Cont | Auditor |
|---|---|---|---|---|---|---|---|
| Min | −0.90 | 0.20 | 431 | 0.00 | −1.82 | 0.00 | 0.00 |
| Max | 1.92 | 0.62 | 32.970 | 7.41 | 6.36 | 1.00 | 1.00 |
| Mean | 0.29 | 0.43 | 6.650 | 0.51 | 0.16 | 0.66 | 0.36 |
| SD | 0.37 | 0.09 | 1.699 | 0.91 | 0.53 | 0.47 | 0.59 |
| UNDP | 1.000 | | | | | | |
| ICD | −0.379 | 1.000 | | | | | |
| Age | −0.209 | 0.108 | 1.000 | | | | |
| Lev | 0.255 | −0.130 | −0.011 | 1.000 | | | |
| ROE | −0.038 | 0.097 | 0.019 | 0.117 | 1.000 | | |
| Own_Cont | 0.101 | 0.303 | −0.084 | −0.032 | −0.222 | 1.000 | |
| Auditor | −0.105 | 0.114 | 0.047 | −0.001 | −0.005 | −0.186 | 1.000 |

Source: The authors.

Note: UNDP = Underpricing; ICD = intellectual capital disclosure; Age = firm age; Lev = leverage; ROE = return on equity; Own_Cont = ownership concentration; Auditor = auditor quality.

$$UNDP = \alpha_0 + \beta_1 ICD + e \quad (1)$$

$$UNDP = \alpha_0 + \beta_1 ICD + \beta_2 LnAge + \beta_3 Lev + \beta_4 ROE + \beta_5 Own\_Cont + \beta_6 Auditor + e \quad (2)$$

remarks:

UNDP: underpricing,
ICD: intellectual capital disclosure,
LnAge: the natural logarithm of the firm age,
Lev: leverage,
ROE: return on equity,
Own_Cont: ownership concentration,
Auditor: quality of auditor and
*e*: error term.

The average underpricing of companies which did an IPO is 29 per cent. If these results are compared with the research result which is done in Malaysia and Singapore, it can be said that the average of underpricing level in Indonesia is relatively higher. The statement is based on the research results of Too et al. (2015) in Malaysia and Singh and Van der Zahn (2007) in Singapore which showed that the average underpricing levels are 23 per cent and 27 per cent, respectively. A high underpricing level is a representation of the costs which are underwritten by the company owner at IPO. The inability of companies to reduce the asymmetry information level with potential investors and ineffectiveness company quality and prospect signalling mechanisms which is delivered at IPO is likely became a cause of high level of underpricing in Indonesia. Underpricing is a representation of wealth transfer from stakeholders (previous investors) to investors or is commonly referred to as 'money left on the table' (Ritter, 2015). Table 1 also shows results which support early assumptions with IC disclosure which have a negative correlation with underpricing.

The hypothesis testing result of the research in Table 2 shows evidence that intellectual capital disclosure affects underpricing negatively. Furthermore, the analysis results show consistency after control variables were added into the research model. The results of this study provide support for signalling theory which states that the disclosure extent can reduce asymmetry information and can assist potential investors in analysing the company quality and prospects which are appropriate with the characteristics of the signalling theory, intellectual capital disclosure is an expensive (high-cost) signalling mechanism and difficult to duplicate by other companies. That cost is related with publication of the company's private information. It can be seen on the disclosure index item which contains strategic information, so it can be easily recognized by competitors (e.g., customer name, marketing strategy, corporate innovation and corporate strategic planning). In addition, there are also items that are specific and difficult to imitate by other companies (e.g., organizational culture, customer relationships and customer satisfaction).

Table 2. Regression Results

AQ: 4

| Variable | Equation (1) | | Equation (2) | |
|---|---|---|---|---|
| | Coeff. | t-Value | Coeff. | t-Value |
| Constant | 0.926 | 8.035*** | 1.299 | 4.589*** |
| Main variable | | | | |
| ICD | −1.468 | −5.605*** | −1.318 | −5.043*** |

*(Table 2 Continued)*

| Variable | Equation (1) | | Equation (2) | |
|---|---|---|---|---|
| | Coeff. | t-Value | Coeff. | t-Value |
| Control variables | | | | |
| LnAge | | | −0.062 | −1.993** |
| Lev | | | 0.090 | 3.283*** |
| ROE | | | −0.020 | −0.427 |
| Own_Cont | | | 0.095 | 1.783* |
| Auditor | | | −0.032 | −0.619 |
| $R^2$ | | 0.144 | | 0.226 |
| Adj. $R^2$ | | 0.139 | | 0.201 |
| *F*-value | | 31.416 | | 8.869 |
| Sig | | 0.000 | | 0.000 |
| *N* | | 189 | | 189 |

Source: The authors.

Note: *, ** and *** indicate significance at 10%, 5% and 1% levels, respectively. ICD = Intellectual capital disclosure; LnAge = natural logarithm of firm age; Lev = leverage; ROE = return on equity; Own_Cont = ownership concentration; Auditor = auditor quality.

Table 2 also shows that the company's age affects negatively on underpricing. The company age represents the company's specific risk. High corporate life demonstrates the company's experience and existence in competition and thereby will reduce the company's risk (Bukh, Nielsen, Gormsen, & Mouritsen, 2005; Rimmel, Nielsen, & Yosano, 2009). High leverage can reflect a high level of company's risk (Singh & Van der Zahn, 2007). Thus, the leverage level can be

expected to reduce the level of investor confidence in the quality of the company and its prospects in the future, thus increasing the underpricing 68 he IPO. Except for age and leverage, ownership concentration has a positive effect on underpricing. The ownership concentration reflects the right to company control. In this case, the controller may elect the board of directors and determine the company's strategic policy (Du & Dai, 2005; Sanjaya, 2010). One of the problems that often arise as a result of control right which is owned by controlling stakeholders is the increased expropriation or self-maximizing efforts with wealth distribution from others (Claessens, Djankov, Fan, & Lang, 1999). Therefore, potential investors see that companies which have concentrated ownership structure will have a bad performance in the future, thus providing a lower rating on the company.

Table 3 shows the results of the influence analysis per disclosure category on underpricing. The most influential category (highest regression coefficient) to the underpricing level is human resources (HR), while the least significant is information technology (IT). These results indicate the importance of human resource information for stakeholders (especially potential investors). Human resources are the most important resources in the company's business processes. Creation of added value and competitive advantage of the company are strongly influenced by the quality of human resources. Competent human resources will produce innovative and quality products, so as to improve company performance (Darroch, 2005; Jimenez & Valle, 2011). Therefore, many research results proved that human resources management practices have a positive effect on company performance (see Guest, 1997).

Table 3. Regression Results per Categories of IC Disclosure

| Variable | Coeff. | t-Value | Coeff. | t-Value | Coeff. | t-Value | Coeff. | t-Value | Coeff. | t-Valu |
|---|---|---|---|---|---|---|---|---|---|---|
| Constant | 1.114 | 3.788*** | 1.039 | 3.552*** | 0.906 | 3.109*** | 1.130 | 4.114*** | 1.064 | 3.721** |
| Main variable | | | | | | | | | | |
| HR | −0.732 | −2.761*** | | | | | | | | |
| Costumer | | | −0.444 | −2.199** | | | | | | |
| IT | | | | | −0.039 | −0.577 | | | | |
| Process | | | | | | | −0.661 | −5.199*** | | |
| R&D | | | | | | | | | −0.284 | −3.353* |
| Strategic | | | | | | | | | | |
| Control variables | | | | | | | | | | |
| LnAge | −0.066 | −2.034** | −0.079 | −2.438** | −0.078 | −2.326** | −0.068 | −2.200** | −0.088 | −2.737* |
| Lev | 0.101 | 3.531*** | 0.102 | 3.548*** | 0.108 | 3.699*** | 0.091 | 3.343*** | 0.120 | 4.234* |
| ROE | −0.028 | −0.573 | −0.043 | −0.878 | −0.046 | −0.940 | −0.015 | −0.326 | −0.052 | −1.09 |
| Own_Cont | 0.072 | 1.301 | 0.079 | 1.413 | 0.062 | 1.104 | 0.083 | 1.585 | 0.070 | 1.286 |
| Auditor | −0.062 | −1.154 | −0.048 | −0.862 | −0.064 | −1.152 | −0.078 | −1.518 | −0.060 | −1.12 |
| $R^2$ | | 0.153 | | 0.141 | | 0.119 | | 0.232 | | 0.169 |
| Adj. $R^2$ | | 0.126 | | 0.112 | | 0.091 | | 0.207 | | 0.142 |
| *F*-value | | 5.502 | | 4.975 | | 4.124 | | 9.170 | | 6.186 |
| Sig | | 0.000 | | 0.000 | | 0.001 | | 0.000 | | 0.000 |
| *N* | | 189 | | 189 | | 189 | | 189 | | 189 |

Source: The authors.

Note: *, ** and *** indicate significance at 10%, 5% and 1% levels, respectively. HR = Human resource; IT = information technology; R&D = research and development; Strategic = strategic statement; LnAge = natural logarithm of firm age; Lev = leverage; ROE = return on equity; Own_Cont = ownership concentration; Auditor = auditor quality

## Robustness Checks

We also did some additional tests to ensure that the results are robust and consistent. In addition, this additional test is also to anticipate endogenous problems, especially measurement error and simultaneity. As presented in Table 4, we re-tested with different measurements of IC disclosure variables (unweighted methods). The analysis result shows the consistency of the negative influence of IC disclosure on underpricing.

Then, we did a Hausman test to prove a simultaneous relationship between IC disclosure and underpricing. The Hausman test results in Table 5 indicate a simultaneous relationship. Therefore, we use the two-stage least-square (2SLS) method to solve the problem. Based on the study of theory and the previous research results, we chose the ownership retention variable and proceeds as instrumental variables (IVs). 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. Sargan test and weak instrument test in Table 5 indicate that the used instrumental variable is valid. Furthermo 59 2SLS analysis result shows that the IC disclosure has a negative effect on underpricing. Therefore, based on the whole analysis results, it can be concluded that the research hypothesis, which states that the wider company in disclosing intellectual capital in the IPO prospectus has lower underpricing level, is supported.

Table 4. The Regression Result of Measurement Error Test

| 42 Variable | Weighted | | Unweighted | |
|---|---|---|---|---|
| | Coeff. | t-Value | Coeff. | t-Value |
| Constant | 1.299 | 4.589*** | 1.308 | 4.639*** |
| Main variable | | | | |
| ICD | −1.318 | −5.043*** | −1.385 | −5.195*** |
| Control variables | | | | |
| LnAge | −0.062 | −1.993** | −0.063 | −2.025** |
| Lev | 0.090 | 3.283*** | 0.091 | 3.329*** |
| ROE | −0.020 | −0.427 | −0.019 | −0.419 |
| Own_Cont | 0.095 | 1.783* | 0.098 | 1.844* |
| Auditor | −0.032 | −0.619 | −0.031 | −0.593 |
| $R^2$ | | 0.226 | | 0.232 |
| Adj. $R^2$ | | 0.201 | | 0.207 |
| *F*-value | | 8.869 | | 9.162 |
| Sig | | 0.000 | | 0.000 |
| *N* | | 189 | | 189 |

Source: The authors.

Note: *, ** and *** indicate significance at 10%, 5% and 1% levels, respectively. ICD = Intellectual capital disclosure; LnAge = natural logarithm of firm age; Lev = leverage; ROE = return on equity; Own_Cont = ownership concentration; Auditor = auditor quality.

Table 5. The Result of Simultaneity Test Regression

| Variable | Ordinary Least Square (OLS) | | Two-stage Least Square (2SLS) | |
|---|---|---|---|---|
| | Coeff. | t-Value | Coeff. | t-Value |
| Constant | 1.298 | 4.589*** | 1.683 | 4.675*** |
| Main variable | | | | |
| ICD | −1.318 | −5.043*** | −2.641 | −3.624*** |
| Control variables | | | | |
| LnAge | −0.062 | −1.993** | −0.044 | −1.273 |
| Lev | 0.090 | 3.283*** | 0.071 | 2.281** |
| ROE | −0.019 | −0.426 | 0.005 | 0.109 |
| Own_Cont | 0.094 | 1.783* | 0.128 | 2.156** |
| Auditor | −0.032 | −0.619 | 0.003 | 0.059 |
| Hausman test | | | | $\chi^2$ = 4.689 (0.030) |
| Sargan test | | | | $\chi^2$ = 0.595 (0.440) |
| Weak instrument test | | | | *F*-statistic (2.181) = 15.551 |
| $R^2$ | | 0.226 | | 0.203 |
| Adj. $R^2$ | | 0.201 | | 0.177 |
| *F*-value | | 8.868 | | 6.246 |
| Sig | | 0.000 | | 0.000 |
| *N* | | 189 | | 189 |

Source: The authors.

Note: *, ** and *** indicate significance at 10%, 5% and 1% levels, respectively. ICD = Intellectual capital disclosure; LnAge = natural logarithm of firm age; Lev = leverage; ROE = return on equity; Own_Cont = ownership concentration; Auditor = auditor quality.

## Conclusion

We analyse the role of intellectual capital disclosure in reducing underpricing in IPOs. The literatures show that intellectual capital disclosures may be used by the company as a quality signalling mechanism to reduce information asymmetry between issuers and potential investors. Conceptually, underpricing arises from information asymmetry between the issuer and the potential investor. When there is information asymmetry, it will lead to an uncertainty of the potential investor's perception about the prospects and quality of the company. It will affect the assessment of potential investors on the company stock price.

The analysis results show that the intellectual capital disclosure extent can reduce the underpricing level. It indicates that intellectual capital disclosure can assist potential investors in analysing and assessing the company quality and prospects. In addition, intellectual capital disclosure can facilitate potential investors in distinguishing good quality and poor quality companies. This study result provide support for the signalling theory and the results of some research which states that the disclosure extent is a mechanism which can reduce information asymmetry level and can further reduce the underpricing of companies which did IPO (Beatty & Ritter, 1986; Jog & McConomy, 2003; Megginson & Weiss,

1991; Ritter, 1984; Schrand & Verrechia, 2004; Widarjo et al., 2017). This study provides an overview of the importance of intellectual capital in business practices in developing countries, especially in IPO settings. In addition, this study also provides an overview of the economic benefits of information disclosure about intellectual capital for the company owner. The expansion of intellectual capital disclosure has been proven to reduce the IPO's cost of capital. In other words, the expansion of intellectual capital disclosure can reduce the IPO's money left on the table.

Furthermore, the analysis results also show that the human resource category in the disclosure index is the category which has the strongest influence in reducing underpricing level when it is compared with other disclosure categories. It provides an overview to the owners and the company management to continue in developing the capacity and capability of human resources, so that it increases investor confidence in quality and aspects of company performance in the future. These research results support the previous literatures that human capital is the lifeblood in intellectual capital, because human capital is a source of innovation and improvement for the company (see Sawarjuwono & Kadir, 2003). Human resource is a strategic asset that can create value add and competitive advantage. Value added can be given by employees in competence development to achieve company goals, innovation, transfer of knowledge from employees to the company and changes in management culture that will provide sustainable revenue in the future for the company (Mayo, 2000).

This research still has some limitations. First, this research has not been able to explain all the factors that influence the underpricing level. This means that there are still factors that are likely to affect underpricing other than intellectual capital disclosure. Therefore, further research needs to add other variables that can influence underpricing, such as corporate governance (Darmadi & Gunawan, 2013) and issue characteristics such as underwriter reputation (Dhamija & Arora, 2017; Sundarasen et al., 2017) and auditor quality (Albring, Elder, & Zhou, 2007; Titman & Trueman, 1986). The second limitation is the underpricing measurement method that has not considered market returns. Therefore, further research can develop the underpricing measurement method by considering market returns.

## Acknowledgement

The authors are grateful to the anonymous referees of the journal for their extremely useful suggestions to improve the quality of the article. Usual disclaimers apply.

## Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

## Funding

The author(s) received no financial support for the research, authorship and/or publication of this article.

## Notes

1. 1 = not important to disclose; 2 = little importance to disclose; 3 = moderately important to disclose; 4 = very important to disclose; 5 = extremely important to disclose.
2. The informants consist of three financial analysts from investment companies, two directors, two auditors and two academics who are experts in disclosure and finance.

## References

Albring, M. S., Elder, R. J., & Zhou, J. (2007). IPO underpricing and audit quality differentiation within non-big 5 firms. *International Journal of Auditing*, *11*(2), 115–131.

Baron, D. P. (1982). A model of the demand for investment banking advising and distribution services of new issues.
*The Journal of Finance*, 2 ), 955–976.
Bea 12 R. P., & Ritter, J. R. (1986). Investment banking, reputation and the underpricing of initial public offerings. *Journal of Financial Economics*, 15(1–2), 213–232.
Benveniste, L. M., & Spindt, P. A. (1989). How investment bankers determine the offer price and allocation of new 34 issues. *Journal of Financial Economics*, 24(2), 343–361.
Bontis, N. (2000). Intellectual capital and business performance in Malaysian industries. *Journal of Intellectual Capi* 57 1(1), 85–100.
Bottazi, L., & Da Rin, M. (2016). *Voluntary information disclosure at IPO*. Retrieved from http://papers.ssrn.com/ 8 sol3/papers.cfm?abstract_id=2810847
Bukh, P. N., Nielsen, C., Gormsen, P., & Mouritsen, J. (2005). Disclosure on information intellectual capital in 41 Danish IPO prospectuses. *Accounting, Auditing and Accountability Journal*, 18(6), 713–732.
Carter, R., & Manaster, S. (1990). Initial public offerings and underwriter reputation. *The Journal of Finance*, 45(4), 11 1045–1067.
Certo, S. T., Covin, J. G., Daily, C. M., & Dalton, D. R. (2001). Wealth and the effects of founder management 21 among IPO-stage new ventures. *Strategic Management Journal*, 22(6), 641–658.
Claessens, S., Djankov, S., Fan, J. P. H., & Lang, L. H. P. (1999). Expropriation of minority shareholders: Evidence 13 from East Asia (Working Paper). Washington, DC: The World Bank.
Claesse 29 S., & Fan, J. P. H. (2003). Corporate governance in Asia: Asurvey. *International Review of Finance*, 3(2), 71–103. Darmadi, S., & Gunawan, R. (2013). Underpricing, board structure, and ownership: An empirical examination of
38 Indonesian IPO firms. *Managerial Finance*, 39(2), 181–200.
Darroch, J. (2005). Knowledge management, innovation and firm performance. *Journal of Knowledge Management*,
1 9(3), 101–115.
Dhamija, S., & Arora, R. K. (2017). Impact of quality certification on IPO underpricing: Evidence from India. 20 *Global Business Review*, 18(2), 428–444.
Du, J., & Dai, Y. (2005). Ultimate corporate ownership structures and capital structures: evidence from East Asian 45 economies. *Corporate Governance*, 13(1), 60–71.
Ghozali, I. (2016). *Aplikasi Analisis Multivariate Dengan Program SPSS*. Edisi Kedelapan. Semarang: Badan 37 Penerbit Universitas Diponegoro.
Grinblat 19 ., & Hwang, C. Y. (1989). Signalling and the pricing of new issues. *The Journal of Finance*, 44(2), 393–420.
Guest, D. E. (1997). Human resource management and performance:Areview and research agenda. *The International*
*Journal of Human Resou e Management*, 8(3), 263–276.
Gumanti, T. A., & Alkaf, N. (2011). Underpricing dalam penawaran umum saham perdana dan penawaran saham 26 susulan. *Jurnal Akuntansi dan Keuangan Indonesia*, 8(1), 21–35.
Gumanti, T. A., & Niagara, M. N. (2006, August 23–26). *Ownership retention, number of risk factors and* 35 *underpricing in Indonesian initial public offerings*. Padang: Simposium Nasional Akuntansi IX.
Guo, R. J., Lev, B., & Zhou, N. (2004). Competitive costs of disclosure by biotech IPOs. *Journal of Accounting Research*, 42(2), 319–355.
52 Hartono. (2006). *Analisis retensi kepemilikan pada penerbitan saham perdana sebagai sinyal nilai perusahaan*
28 (*Disertasi*). Universitas Gadjah Mada.
Jimenez, D. J., & Valle, R. S. (2011). Innovation, organizational learning, and performance. *Journal of Business*
40 *Research*, 64(4), 408–417.
Jog, V., & McConomy, B. J. (2003). Voluntary disclosure of management earnings forecasts in IPO prospectuses.

*Journal of Business, Finance and Accounting, 30*(1/2), 125–167.

Leon, A. J., Rock, S., & Willenborg, W. (2007). Disclosure of intended use of proceeds and underpricing in initial public offerings. *Journal of Accounting Research, 45*(1), 111–153.

Ljungqvist, A. (2005). *IPO underpricing*. In B. E. Eckbo (Ed.), *Handbook of corporate finance: Empirical corporate finance* (pp. 375–422). North Holland, The Netherlands: Elsevier.

Logue, D. (1973). On the pricing of unseasoned equity issues, 1965–69. *Journal of Financial and Quantitative Analysis, 8*(1), 91–103.

Loughran, T., & Ritter, J. (2004). Why has IPO underpricing changed over time? *Financial Management, 33*(3), 5–37. Mayo, A. (2000). The role of employee development in the growth of intellectual capital. *Personnel Review, 29*(4), 521–533.

Megginson, W., & Weiss, K. A. (1991). Venture capitalist certification in initial public offerings. *Journal of Finance, 46*(3), 879–903.

Rashid, A. A., Ibrahim, M. K., Othman, R., & See, K. F. (2012). IC disclosures in IPO prospectuses: Evidence from Malaysia. *Journal of Intellectual Capital, 13*(1), 57–80.

Rimmel, G., Nielsen, C., & Yosano, T. (2009). Intellectual capital disclosure in Japanese IPO prospectuses. *Journal of Human Resource Costing & Accounting, 13*(4), 316–337.

Ritter, J. R. (1984). The 'hot issue' market of 1980. *Journal of Business, 57*(2), 215–240.

———. (2015). *Money left on the table in IPOs by firm*. Retrieved from https://site.warrington.ufl.edu/ritter/files/2015/08/Money-Left-on-the-Table-in-IPOs-by-Firm-2015-08-04.p

Rock, K. (1986). Why new issues are underpriced. *Journal of financial Economics, 15*(1–2), 187–212.

Sahoo, S., & Rajib, P. (2009, September). Investment bank prestige and IPO underpricing: An empirical study. *IIMB Management Review, 21*(3), 189–214.

Sanjaya, P. S. (2010, October 13–14). *Efek Entrechment dan Alignment pada manajemen laba*. Purwokerto: Simposium Nasional Akuntansi XIII.

Sawarjuwono, T., & Kadir, A. P. (2003). Intellectual capital: Perlakuan, pengukuran dan pelaporan (sebuah library research). *Jurnal Akuntansi & Keuang* 5(1), 35–57.

Schrand, C., & Verrechia, R. E. (2004). Disclosure choice and cost of capital: Evidence from un pricing in initial public offerings (Working Paper). Philadelphia, PA: The Wharton School, University of Pennsylvania.

Sihotang, P., & Winata, A. (2008). The intellectual capital disclosures of technology-driven companies: Evidence from Indonesia. *International Journal Learning and Intellectual Capital, 5*(1), 63–82.

Singh, I., & Van der Zahn, J.-L. W. M. (2007). Does intellectual capital disclosure reduce an IPOs cost of capital: The case of underpricing. *Journal of Intellectual Capital, 8*(3), 494–516.

Sundarasen, S. D., Khan, A., & Rajangam, N. (2018). Signalling roles of prestigious auditors and underwriters in an emerging IPO market. *Global Business Review, 19*(1), 69–84.

Tandon, K., Purohit, H., & Tandon, D. (2016). Measuring intellectual capital and its impact on financial performance: Empirical evidence from CNX nifty companies. *Global Business Review, 17*(4), 980–997.

Titman, S., & Trueman, B. (1986). Information quality and the valuation of new issues. *Journal of Accounting and Economics*, *8*(2), 159–172.

Too, S. W., Fadzilah, W., & Yusoff, W. (2015). Exploring intellectual capital disclosure as a mediator for the relationship between IPO firm-specific characteristics and underpricing. *Journal of Intellectual Capital*, *16*(3), 1–26.

Ulu I., Ghozali, I., & Chariri, A. (2008, July 23–26). *Intellectual capital dan kinerja keuangan perusahaan: Suatu analisis dengan pendekatan partial least squares*. Pontianak: Simposium Nasional Akuntansi XI.

Welch, I. (1989). Seasoned offerings, imitation costs, and the underpricing of initial public offerings. *Journal of Finance*, *44*(2), 421–449.

Welker, M. (1995). Disclosure policy, information asymmetry, and liquidity in equity markets. *Contemporary Accounting Research*, *11*(2), 801–827.

Widarjo, W., & Bandi. (2018). Determinants of intellectual capital disclosure in the IPOs and its impact on underpricing: Evidence from Indonesia. *International Journal of Learning and Intellectual Capital*, *15*(1), 1–19.

Widarjo, W., Rahmawati, B., & Widagdo, A. K. (2017). Underwriter reputation, intellectual capital disclosure, and underpricing. *International Journal of Business and Society*, *18*(2), 227–244.

Widiyan N. W., & Kusuma, F. D. (2013, September 25–28). *Analisis informasi akuntansi dan non akuntansi terhadap initial return saham pada perusahaan yang melakukan IPO di bursa efek Indonesia*. Manado: Sim ium Nasional Akuntansi XVI.

Yi, A., Davey, H., Eggleton, I. R. C., & Wang, Z. (2015). Intellectual capital disclosure and the information gap: Evidence from China. *Advances in Accounting, Incorporating Advances in International Accounting*, *31*(2), 179–187.

Yosano, T., Nielsen, C., & Rimmel, G. (2015). The effects of disclosing intellectual capital information on the long-term stock price performance of Japanese IPO's. *Accounting Forum*, *39*(2), 83–96.

# Underpricing and Intellectual Capital Disclosure: Evidence from Indonesia

ORIGINALITY REPORT

| 21% | 16% | 11% | 11% |
|---|---|---|---|
| SIMILARITY INDEX | INTERNET SOURCES | PUBLICATIONS | STUDENT PAPERS |

PRIMARY SOURCES

| | | |
|---|---|---|
| 1 | Submitted to Charles Sturt University<br>Student Paper | 1% |
| 2 | jonathanstray.com<br>Internet Source | 1% |
| 3 | ecojoin.org<br>Internet Source | 1% |
| 4 | mmi.fem.sumdu.edu.ua<br>Internet Source | <1% |
| 5 | www.nottingham.ac.uk<br>Internet Source | <1% |
| 6 | www.manu-ao.ac.nz<br>Internet Source | <1% |
| 7 | sinta3.ristekdikti.go.id<br>Internet Source | <1% |
| 8 | ijssb.com<br>Internet Source | <1% |
| 9 | Santhanamery, T., and T. Ramayah. | |

| | | |
|---|---|---|
| | "Understanding the Effect of Demographic and Personality Traits on the E-Filing Continuance Usage Intention in Malaysia", Global Business Review, 2015.<br>Publication | <1% |
| 10 | Submitted to The Hong Kong Polytechnic University<br>Student Paper | <1% |
| 11 | Marketing Intelligence & Planning, Volume 31, Issue 2 (2013-05-27)<br>Publication | <1% |
| 12 | Valérie Revest, Alessandro Sapio. "Financing technology-based small firms in Europe: what do we know?", Small Business Economics, 2010<br>Publication | <1% |
| 13 | Yenpao Chen. "The impact of related party transactions on the operational performance of listed companies in China", Journal of Economic Policy Reform, 12/2009<br>Publication | <1% |
| 14 | iscn.com<br>Internet Source | <1% |
| 15 | Submitted to Skyline High School<br>Student Paper | <1% |
| 16 | maaw.info<br>Internet Source | |

| | | |
|---|---|---|
| | | <1% |
| 17 | www.ametuniv.ac.in<br>Internet Source | <1% |
| 18 | kau.diva-portal.org<br>Internet Source | <1% |
| 19 | Submitted to Icon College of Technology and Management<br>Student Paper | <1% |
| 20 | Fang Wang, Hong Zhou. "Types of guarantees and their relation to external auditing：Evidence from the Chinese bond market", China Journal of Accounting Studies, 2014<br>Publication | <1% |
| 21 | www.87994.com<br>Internet Source | <1% |
| 22 | www.docstoc.com<br>Internet Source | <1% |
| 23 | www.jurnal.ar-raniry.ac.id<br>Internet Source | <1% |
| 24 | healthfinancejournal.com<br>Internet Source | <1% |
| 25 | www.mobilecongress.com<br>Internet Source | <1% |

| | | |
|---|---|---|
| 26 | Submitted to University College London<br>Student Paper | <1% |
| 27 | www.mdx.ac.uk<br>Internet Source | <1% |
| 28 | www.abacademies.org<br>Internet Source | <1% |
| 29 | m.scirp.org<br>Internet Source | <1% |
| 30 | apira2010.econ.usyd.edu.au<br>Internet Source | <1% |
| 31 | people.sabanciuniv.edu<br>Internet Source | <1% |
| 32 | doaj.org<br>Internet Source | <1% |
| 33 | www.aabri.com<br>Internet Source | <1% |
| 34 | ir.lib.nthu.edu.tw<br>Internet Source | <1% |
| 35 | Journal of Intellectual Capital, Volume 7, Issue 2 (2006-09-19)<br>Publication | <1% |
| 36 | Submitted to Queen Mary and Westfield College<br>Student Paper | <1% |

| | | |
|---|---|---|
| 37 | Tim Baldenius, Xiaojing Meng. "Signaling firm value to active investors", Review of Accounting Studies, 2010<br>Publication | <1% |
| 38 | Jong Beom Jin, Choon Seong Leem, Choong Hyun Lee. "Research issues and trends in industrial productivity over 44 years", International Journal of Production Research, 2015<br>Publication | <1% |
| 39 | International Journal of Accounting and Information Management, Volume 21, Issue 3 (2014-03-28)<br>Publication | <1% |
| 40 | center.uvt.nl<br>Internet Source | <1% |
| 41 | Steven Dolvin. "Venture Capitalist Certification of IPOs", Venture Capital, 2005<br>Publication | <1% |
| 42 | lib.dr.iastate.edu<br>Internet Source | <1% |
| 43 | publisher.unimas.my<br>Internet Source | <1% |
| 44 | www.accountancy.smu.edu.sg<br>Internet Source | <1% |

| | | |
|---|---|---|
| 45 | ejournal-polnam.ac.id<br>Internet Source | <1% |
| 46 | Submitted to University of New York in Tirana<br>Student Paper | <1% |
| 47 | www.york.ac.uk<br>Internet Source | <1% |
| 48 | muhariefeffendi.net<br>Internet Source | <1% |
| 49 | Submitted to Universitas Islam Indonesia<br>Student Paper | <1% |
| 50 | Yi-Ju Lo, Tung Min Hung. "Inter-organizational relationships and firm performance: A study of the US equity underwriting market in the investment banking industry", Journal of Management & Organization, 2015<br>Publication | <1% |
| 51 | www.adda.edu.az<br>Internet Source | <1% |
| 52 | Submitted to Politeknik Negeri Bandung<br>Student Paper | <1% |
| 53 | jois.eu<br>Internet Source | <1% |
| 54 | Monika Singla, Shveta Singh. "Board monitoring, product market competition and firm | <1% |

performance", International Journal of Organizational Analysis, 2019
Publication

| | | |
|---|---|---|
| 55 | psasir.upm.edu.my<br>Internet Source | <1% |
| 56 | staging.carleton.ca<br>Internet Source | <1% |
| 57 | Submitted to HELP UNIVERSITY<br>Student Paper | <1% |
| 58 | Kam C. Chan, Yung Ling Lo. "Credit ratings and long-term IPO performance", Journal of Economics and Finance, 2010<br>Publication | <1% |
| 59 | Submitted to Universitas Trunojoyo<br>Student Paper | <1% |
| 60 | Submitted to Wright State University<br>Student Paper | <1% |
| 61 | Review of Accounting and Finance, Volume 12, Issue 4 (2013-10-19)<br>Publication | <1% |
| 62 | cear.gsu.edu<br>Internet Source | <1% |
| 63 | "Family Businesses in the Arab World", Springer Science and Business Media LLC, 2017<br>Publication | <1% |

| | | |
|---|---|---|
| 64 | Sandi Mann. " Intellectual Capital: The New Wealth of Organizations19991Thomas A. Stewart. . London: Nicholas Brealey Publishing 1998. , ISBN: ISBN 1-85788-183-4 Paperback £12.99 ", Leadership & Organization Development Journal, 1999<br>Publication | <1% |
| 65 | top25.sciencedirect.com<br>Internet Source | <1% |
| 66 | le.uwpress.org<br>Internet Source | <1% |
| 67 | Inaya Sari Melati, Fitri Andriani Setyowati. "An Investigation of How Basic Education Level Explains the Phenomena of Unemployment Differently in Urban and Rural Areas", KnE Social Sciences, 2020<br>Publication | <1% |
| 68 | www.iiste.org<br>Internet Source | <1% |
| 69 | www.imes.boj.or.jp<br>Internet Source | <1% |
| 70 | Valentina Beretta, Maria Chiara Demartini, Sara Trucco. "Tone at Top in Integrated Reporting: The Role of Non-Financial Performance", Emerald, 2020<br>Publication | <1% |

| | | |
|---|---|---|
| 71 | www.postkeynesian.net<br>Internet Source | <1% |
| 72 | Submitted to President University<br>Student Paper | <1% |
| 73 | Lurdes Silva, Ana Maria Rodrigues, María Del Pilar Muñoz. "Os determinantes da divulgação de informação sobre o capital intelectual: estudo da banca em Portugal", Revista de Contabilidade e Organizações, 2014<br>Publication | <1% |

| | | | |
|---|---|---|---|
| Exclude quotes | Off | Exclude matches | Off |
| Exclude bibliography | Off | | |

# Underpricing and Intellectual Capital Disclosure: Evidence from Indonesia

GRADEMARK REPORT

FINAL GRADE

/0

GENERAL COMMENTS

**Instructor**

PAGE 1

PAGE 2

PAGE 3

PAGE 4

PAGE 5

PAGE 6

PAGE 7

PAGE 8

PAGE 9

PAGE 10

PAGE 11

PAGE 12

PAGE 13

PAGE 14

PAGE 15

PAGE 16

PAGE 17

PAGE 18

PAGE 19

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

| | | | | |
|---|---|---|---|---|
| Judul Karya Ilmiah (artikel) | : | Underpricing and Intellectual Capital Disclosure: Evidence from Indonesia | | |
| Jumlah Penulis | : | 4 Orang (Wahyu Widarjo, Rahmawati, Bandi, **Ari Kuncara Widagdo)** | | |
| Status Pengusul | : | ~~Penulis pertama~~ / penulis ke 4 / ~~penulis korespondasi**~~ | | |
| Identitas Jurnal Ilmiah | : | a. Nama Jurnal | : | **Global Business Review. Scopus Q3** |
| | | b. Nomor ISSN | : | **0972-1509** |
| | | c. Volume,nomor,bulan,tahun | : | **First Online 6 Oktober 2019** |
| | | d. Penerbit | : | **SAGE Publications** |
| | | e. DOL artikel (jika ada) | : | |
| | | f. Alamat web Jurnal | : | https://repository.feb.uns.ac.id/lihatpdf.php?lokasi=publikasi&kode=856 |
| | | 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 | | | 3.7 |
| b. | Ruang lingkup dan kedalaman pembahasan (30%) | 12 | | | 11.3 |
| c. | Kecukupan dan kemutahiran data/informasi dan metodologi (30%) | 12 | | | 11.5 |
| d. | Kelengkapan unsur dan kualitas terbitan/jurnal (30%) | 12 | | | 11.5 |
| **Total = (100%)** | | **40** | | | **38** |
| **Nilai Pengusul = (40% x 38)/3= 5.06 (Penulis Keempat)** | | | | | |

**Catatan Penilaian artikel oleh Reviewer :**

a. Kelengkapan dan kesesuaian unsur isi artikel: Unsur artikel ini sesuai dan lengkap. Artikel mempunyai pendahuluan, review literatur, tujuan, metode penelitian, analisis, dan kesimpulan. Daftar pustaknya juga disusun secara sistematis dan mencakup referensi yang cukup.

b. Ruang lingkup dan kedalaman pembahasan :
Pembahasan dalam artikel ini sudah baik. Penulis membahas hasil dari tiap output regressi dari pengujian hipotesis dan memberikan argumen-argumen penjelasnya. Selain itu, penulis juga menguji dan membahas potensi terjadinya endogenitas yang disebabkan *simultaneity*.

c. Kecukupan dan pemutakhiran data/informasi dan metodologi:
Pengamatan mencakup periode yang panjang (2000-2014). Selain itu, penulis membangun indeks pengungkapan intelektual tersendiri. Penulis menggunakan metode regresi untuk menguji hipotesis. Lebih lanjut, penulis juga menggunakan 2LS regressi untuk menguji kemungkinan terjadinya endogeneitas. Oleh karena itu, data dan metodologi artikel ini adalah baik.

d. Kelengkapan unsur dan kualitas terbitan:
Kualitas jurnal adalah baik, karena terindeks di SCOPUS (Q3). Selain itu, jurnal ini juga diterbitkan penerbit yang bereputasi, yaitu SAGE publishing.

e. Indikasi Plagiat: Artikel ini tidak memiliki indikasi plagiat, karena memiliki tingkat kemiripan sebesar 21 persen.

f. Kesesuaian bidang ilmu: Topik penelitian ini merupakan bagian dari akuntansi, yaitu akuntansi keuangan. Oleh karena itu, artikel ini sesuai dengan bidang ilmu penulis.

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

2.6

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

| | | | | |
|---|---|---|---|---|
| Judul Karya Ilmiah (artikel) | : | Underpricing and Intellectual Capital Disclosure: Evidence from Indonesia | | |
| Jumlah Penulis | : | 4 Orang (Wahyu Widarjo, Rahmawati, Bandi, **Ari Kuncara Widagdo**) | | |
| Status Pengusul | : | ~~Penulis pertama~~ / penulis ke 4 / ~~penulis korespondasi**~~ | | |
| Identitas Jurnal Ilmiah | : | a. Nama Jurnal | : | **Global Business Review. Scopus Q3** |
| | | b. Nomor ISSN | : | **0972-1509** |
| | | c. Volume,nomor,bulan,tahun | : | **First Online 6 Oktober 2019** |
| | | d. Penerbit | : | **SAGE Publications** |
| | | e. DOL artikel (jika ada) | : | |
| | | f. Alamat web Jurnal | : | https://repository.feb.uns.ac.id/lihatpdf.php?lokasi=publikasi&kode=856 |
| | | 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 | | | 3,5 |
| b. | Ruang lingkup dan kedalaman pembahasan (30%) | 12 | | | 10,8 |
| 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** | | | 36,8 |
| **Nilai Pengusul = (40% x 36,8 )/3= 4,91. (Penulis Keempat)** | | | | | |

**Catatan Penilaian artikel oleh Reviewer :**

a. Kelengkapan dan kesesuaian unsur isi artikel : Unsur artikel ini lenghap dan sesuai. Penulis telah menyajikan dengan baik mengenai pendahuluan, landasan teori, metodologi, hasil dan kesimpulan.

b. Ruang lingkup dan kedalaman pembahasan : Ruang lingkup pembahasan artikel ini baik dan mendalam. Penulis menggunakan argumentasi yang baik mengenai dampak underpricing terhadap pengungkapan modal intelektual pada perusahaa yang melakukan penawaran saham perdana.

c. Kecukupan dan pemutakhiran data/informasi dan metodologi : Data yang digunakan dalam artikel ini cukup dan mutakhir. Penulis juga menggunakan metodologi yang tepat dan juga melakukan pengujian robustness untuk memperkuat hasil penelitian.

d. Kelengkapan unsur dan kualitas terbitan :
Kualitas jurnal ini baik sehingga terindeks Scopus Q3. Jurnal ini juga diterbitkan oleh publisher yang baik yaitu SAGE.

e. Indikasi Plagiat :
Artikel ini tidak terindikasi plagiasi. Hal ini dapat dilihat pada nilai similarity sebesar 21% dengan menggunakan software turnitin.

f. Kesesuaian bidang ilmu :
Artikel ini sesuai linier dengan bidang ilmu akuntansi.

Surakarta, .....05 JUN 2020.....

Reviewer ½ **

**Prof. Doddy Setiawan., SE.,MSi,. Ph.D, Ak**
**NIP. 197502182000121001**
Jabatan : Guru Besar
Pangkat,Gol Ruang : Pembina Tingkat I / IV/b
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