Analysis of the Effect of Firm Size, Profitability and Capital Structure on IPO Underpricing on the Indonesia Stock Exchange (IDX)

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Underpricing often occurs in issuers that make IPOs on the IDX (the Indonesia Stock Exchange). Because underpricing is detrimental to the issuer, the study of factors that affect underpricing is very important. The aim of this study is to test the impact of firm size, profitability, and capital structure on underpricing in firms conducting IPOs. The sample of this study is firms that conduct IPOs in 2009-2016 and in the group of non-manufacturing firms. It is hypothesised that firm size and profitability have a negative effect on underpricing while capital structure has a positive effect on underpricing. The findings of this study are as follows: Firm size and profitability as measured by ROA (return on assets) have a significant negative effect on underpricing. However, profitability as represented by EPS (earnings per share) is not supported and has a negative effect on underpricing, and capital structure is also not supported and has a positive effect on underpricing.

Key words: *Capital structure, firm size, profitability and underpricing.*

Introduction

In order to expand its business, a company needs to add funds for expansion. Fulfillment of funds carried out by the firm is based on the capital structure targeted by the firm. By using several theories of capital structure theory, companies can increase capital by offering their shares to the general public, which is called going public.

Prior to the shares being traded on a stock exchange, which is also called the secondary market, the shares are first offered through an Initial Public Offering (IPO) on the primary market. Offering shares in the primary market is one of the relevant issues to be studied,

because in general, IPOs provide positive abnormal returns for investors after these shares are traded in the secondary market (Husnan, 2008). Abnormal returns occur because there is mispricing in the primary market. The form of abnormal return is underpricing. Underpricing in the primary market occurs because the stock price at the IPO is relatively lower than the secondary market price at the start of listing. Situations like this make investors in the primary market get a relatively large profit, but the issuers suffer losses. The undepricing theory according to Habib and Ljungqvist (2001) is that in which underpricing is detrimental to the issuer, because the proceeds from the sale of shares received by the issuer are not optimal.

According to Husnan (2008: 269) abnormal return indicates the difference between the actual rate of return and the expected rate of return. Market efficiency can be examined by looking at abnormal returns that occur. The market is stated to be inefficient if several market participants can enjoy an abnormal return in a long time period. If the return obtained is greater than the expected return, this means a positive abnormal return; this is expected by investors. When the realised return is smaller than the expected return it means that the abnormal return will be negative and is called underpricing (Jogiyanto, 2017).

Many advantages for companies that do IPO. The IPO is useful for issuers to add funds. These funds can be used to develop businesses. Underwriters who help issuers in offering shares will also benefit from an IPO. The more underwriters carry out underwriting for companies that will conduct an IPO, the better the underwriters' reputation. Supporting professions in the capital market also benefit from the IPO. They will get a fee from the issuer such as: public accountants, notaries, legal consultants, and appraisals. The public accountant has the duty to examine the financial statements and provide opinions on the financial statements of the companies that will issue shares. The notary is in charge of making minutes of the General Meeting of Shareholders (GMS) and preparing the statement of the resolutions of the GMS. The firm's decision to go public must obtain the approval of its shareholders. A legal consultant is required for services so that companies that do not issue securities in the capital market are involved in disputes with other parties, and also ensure the validity of firm documents. Appraisal is in charge of evaluating the firm's fixed assets to obtain a fair value (Aini, 2009).

The determination of the share price at the initial offering is determined based on an agreement between the underwriter and the issuer. Because of the asymmetric information, the underwriter generally has more information as regards the demand for the issuer's shares, than the issuer itself (Su, 2004). Therefore, the underwriter will use the information he has to obtain an optimal agreement with the issuer, namely by reducing the risk of having to buy unsold shares at low prices. The result is that issuers must accept low prices on their initial share offer. Thus there will be underpricing, which implies that the determination of

the price of common stock in the primary market is lower than the price of common stock in the secondary market on the same stock. Underpricing conditions are very detrimental to issuers who will go public, because the funds or capital got from the public are not maximum to meet the needs of their expansion (Wicaksono, 2012).

According to the signalling theory, information provided to the public as an announcement will give a signal to investors in creating investment decisions. When the announcement has contents of a positive value, then the market is expected to react when the announcement is obtained by the market (Retnowati, 2013). This is also supported by the findings of Utamaningsih (2012 and 2013) that underpricing is an incentive (reward) to investors for the honesty of the information they disclose. To find out the ideal stock price in the primary market, it is necessary to study the information and factors that can influence underpricing. Knowing the factors that affect underpricing will prevent companies that go public against losses due to underestimating the market value of the shares. There have been several studies regarding the factors that influence underpricing, among other studies which are: Suyatmin & Sujadi (2006), Handayani (2008), Aini (2009), Sari (2011), Alma'wa (2012), Retnowati (2013), and Saputra & Suaryana (2016). This research examines the existing research by taking different samples. This is because various existing studies regarding the factors that influence underpricing have inconsistencies in research results. Some studies use ROA, leverage, firm size, underwriter reputation, EPS, initial share price, percentage of shares offered to the public, IPO time, and firm life as variables that affect underpricing. The author is interested in researching by conducting an evaluation and modification of previous studies that show the inconsistency of the results of the study. For example, Purwanto et al. (2015) hypothesised size firm and ROA had a negative effect on underpricing but the test results did not support the hypothesis. Anggraini (2018) hypothesised that capital structure has a positive effect on underpricing but the proceeds of testing do not support the hypothesis.

Some studies distinguish the factors that influence underpricing into two groups, namely the financial variable group and the non-financial variable group. Financial variables that affect underpricing include firm size, profitability, and capital structure. Non-financial variables that affect underpricing include underwriter reputation, initial stock price, percentage of shares offered, firm life, and time of IPO. In general, researches related to underpricing are non-financial companies and manufacturing companies. In this connection, the study chose research in non-manufacturing companies.

Based on the above problems and limited research time considerations, the authors are interested in carrying out a study of the impact of financial variables on underpricing in non-manufacturing firms listed on IDX. Financial variables that are used as factors that affect underpricing are firm size, profitability, and capital structure. Therefore, the author titled this

research "Analysis of the Effect of Firm Size, Profitability and Capital Structure on IPO Underpricing on IDX."

Mayasari, Yusuf, and Yulianto (2011) examined the impact of profitability on underpiricing in which profitability was measured by return on equity (ROE) and net profit margin (NPM). In this study, the authors measure profitability by return on assets (ROA) and earnings per share (EPS). Based on the background described above, the formulation of the problem in this study are: 1) does the size of the firm affect underpricing? 2) does profitability affect underpricing? and 3) Does the capital structure influence the underpricing? The purpose of this study was to examine whether firm size, profitability, and capital structure influence underpricing.

The proceeds of this research are expected to be used as a reference to further refine subsequent studies that will review the effect of financial variables on underpricing. In addition, issuers are expected to gain useful knowledge in determining a fair price in an IPO, so that the firm will obtain a number of funds or capital at a relatively low cost.

Literature Review

There is mispricing in the determination of share prices in the primary market. One phenomenon that causes mispricing is information asymmetry (Su, 2004). According to Rhodes-Kropf et al. (2005), mispricing can occur because of anomalous investor behaviour. Mispricing can be either underpricing or overpricing. Underpricing is a phenomenon where the price of shares offered on the primary market is lower than the price of shares as traded on the secondary market (Mayasari, Yusuf and Yulianto, 2018). Underpricing is a general phenomenon at the time of an IPO. However, there is no theory that can explain what is the main cause, so now this phenomenon is still controversial. Nevertheless, a number of arguments regarding the phenomenon of underpricing have been put forward to clarify the IPO process. Utamningsih (2012) explains the premises underlying the explanation of the phenomenon of underpicing are: asymmetric information, legal protection, marketing functions, spinning and flipping, liquidity, and behavioural-based premises.

This research aims to test the effect of firm size, profitability, and capital structure on underpricing; the following described the independent variables that affect underpricing: The size of the firm can be measured by the firm's total assets or firm sales. The greater total assets or sales indicate the larger firm size. Profitability shows the firm's ability to get a profit. Profitability can be represented by NPM (net profit margin), ROA (return on asset), ROI (return on equity), and EPS (earnings per share). If these ratios get higher, profitability will get higher too. Capital structure is a corporate funding consisting of debt, preferred stock, and common stock (Ross et al., 2015). The proxy for representing capital structure is

leverage. Leverage can be measured by debt-to-total asset ratio and debt-to-equity ratio. If the debt is greater, it shows the greater leverage (Horne and Wachowich, 2009).

Firm size can represent stock uncertainty. The larger the size of the firm, the larger the level of uncertainty and the lower the stock price. Large-scale firms indicate to be better known to the public. Information or news about the prospects of large-scale companies is more easily obtained by investors than small-scale firms. The degree of uncertainty that will be obtained by potential investors regarding the future of the issuer firm can be reduced when the information obtained is large (Ardiansyah, 2004).

The level of uncertainty of large-scale firms is generally low. Large scale firms tend not to be easily influenced by the market. Conversely it can affect and colour the overall market situation. This condition can be stated as a small level of investment risk in large-scale companies. Whereas small scale companies have a degree of uncertainty in the future and especially in the long run.

Firm size generally can be measured by total assets, number of employees, number of customers, capital, and firm sales. To calculate the firm size the firm's financial statements, the last year before the firm conducted an IPO, are used. Based on the signalling theory, a bigger firm gives a positive signal to the market. The greater the firm's assets will indicate the greater the size of the firm. Companies with higher and bigger economies of scale are considered able to survive for a long time. The firm's assets are increasingly giving a positive signal to the price of common stock in the secondary market. Therefore, firm size has a negative influence on underpicing (Miswanto and Husnan, 1999; Mayasari, Yusuf and Yulianto, 2018). Therefore, the first hypothesis of the study is as follows:

H1: Firm size has a negative effect on underpricing

In this research, profitability is represented by ROA and EPS. Therefore the hypothesis is twofold, the effect of ROA on underpricing and the effect of EPS on underpricing. ROA is one of the profitability ratios to determine the level of return on the total assets of the firm. ROA is taken to measure the effectiveness of a firm in getting profits by utilising its assets. ROA has a negative effect on underpricing. The higher the firm's ROA the lower the level of underpricing because investors will assess the firm's performance better and are willing to buy its first share at a higher price.

There are several studies that link the profitability ratio and the level of underpricing. Aini (2009) and Saputra & Suaryana (2016) found a significant negative relationship between profitability, as presented by ROA, and underpricing. The relationship shows that the higher

the profitability, the lower the underpricing. In contrast, Handayani (2008) and Retnowati (2013) found no significant relationship between ROA and underpricing.

Based on the discussion and previous research, the researcher proposes a hypothesis with a negative directional relationship because some companies have a higher ROA and are considered more attractive by investors. Therefore, the underwriter together with the issuer will be confident to set a higher initial price compared to companies that have lower ROA. Based on the theory and previous research, the authors propose a second hypothesis as follows:

H2: ROA has a negative effect on underpricing.

EPS describes the amount of rupiah obtained for each share of common stock or earnings per share of stock. The amount of profit available to shareholders is profit after deducting income tax. Positive EPS growth gets a greater share of profits in the future for each share owned. According to Ang (1997), Earning Per Share (EPS) is a comparison between earning after tax in one financial year and the number of outstanding shares. The earnings per share variable provides an illustration for investors about the portion of profits that can be obtained in a given period in the number of shares held. The results of research by Handayani (2008) and Retnowati (2013), EPS has a significant negative effect on underpricing. For this reason, the third hypothesis is proposed as follows:

H3: EPS has a negative effect on underpricing.

The findings of the influence of capital structure or leverage are different. Indriani and Marlia (2015) found that leverage has a negative effect on underpricing. However, Su (2004); and Saputra & Suaryana (2016) shows that leverage has a positive effect on underpricing. Meanwhile according to Suyatmin & Sujadi (2006), they show that leverage has no significant effect on the level of underpricing. Leverage shows the proportion of debt to total assets or equity. The higher the firm's leverage, the higher the level of underpricing. Companies with lower leverage indicate better firm quality and the firm will set the IPO price close to intrinsic value, resulting in lower underpricing. Conversely, companies with high levels of leverage indicate poor firm quality. As a result, the firm will set the IPO price far below the intrinsic value to compensate investors for informational risk. For this reason, hypothesis 4 is proposed as follows:

H4: Leverage has a positive effect on underpricing.

Refer to the description above, a summary of the main hypotheses and references and the research model is as follows.

Table 1: Statement of hypotheses and references

Hypotheses	Statements	References
H1	Firm size has a negative effect on Underpricing	Ardiansyah (2004); Miswanto and Husnan, (1999); Mayasari, Yusuf and Yulianto (2018).
H2	ROA has a negative effect on Underpricing	Aini (2009) and Saputra & Suaryana (2016),
H3	EPS has a negative effect on Underpricing.	Handayani (2008) and Retnowati (2013)
H4	Leverage has a positive effect on Underpricing	Su (2004); Suyatmin & Sujadi (2006)

Figure 1. Research Model
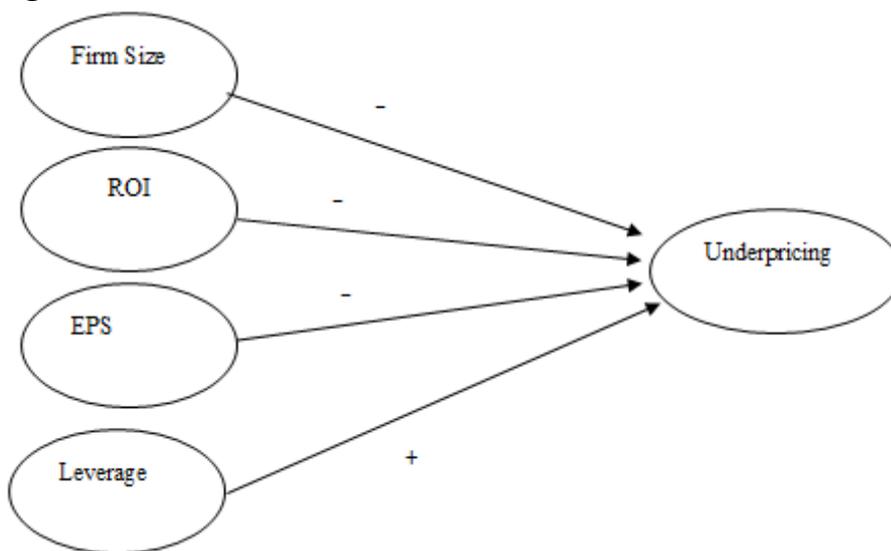
Research Method

The companies studied were non-manufactures listed on the IDX. Sample selection is based on purposive sampling method. The data taken in this research is the cross section data of companies conducting IPO in 2009-2016 accessed from www.idx.co.id. Defining Operations and Measuring Variables in this study are as follows.

Table 2: Defining Operations and Measuring Variables

Variable	Definition
Underpricing (Y)	Measured by the difference between the closing price of shares in the secondary market on the first day with the primary price of shares, then divided by the primary price of shares.
Firm Size (X1)	The firm size is represented by the natural log of the total assets of the last year before the firm conducted an IPO
ROA (X2)	Profitability ratios is measured by EBIT divided by the book value of assets prior to IPO.
EPS (X3)	The profitability ratio that describes the amount of money obtained for each share of common stock or earnings after tax per share of common stock at the time before IPO
Leverage (X4)	This variable is counted by dividing total debt by total assets before IPO.

Descriptive analysis is done first before testing the hypothesis. Testing the hypothesis of this study uses multiple regression, with ordinary least square regression model (OLS). After conducting a descriptive analysis, the next step is to test the classical assumptions. The classic assumption tests performed are tests of normality, multicollinearity, heteroscedasticity and linearity. If the data used has not passed the assumption test, data improvements are made so that it can pass the classic assumption test. Thus, the regression estimation meets the best linear unbias estimator (BLUE) (Ghozali, 2013). The software used to analyse is IBM SPSS version 24. The next steps are testing the hypothesis which includes the t test, the determination test, and the simultaneous test. The research regression equation model is as below:

$$Y = \beta_0 + \beta_1 X1 + \beta_2 X2 + \beta_3 X3 + \beta_4 X4 + e \quad (1)$$

With the t test, H1, H2 and H3 are supported if statistically the coefficient of regression is significantly greater than zero. H4 is supported when statistically the coefficient of regression is significantly smaller than zero.

Findings and Discussion

Before conducting hypothesis testing, descriptive data analysis of existing data is done. Based on the table below, there are 67 companies. The minimum, maximum, average and standard deviation values for the Underpricing variables are 0.009, 0.833, 0.199 and 0.198, respectively. Therefore, all Underpricing variable values are positive. With this value, the primary market price is always lower than the stock price at the first day market price in the secondary market.

Table 3: Results of descriptive statistics data analysis

Variables	N	Minimum	Maximum	Mean	Std. Deviation
Underpricing (Y)	67	0.009	0.833	0.199	0.198
Size Perusahaan (X1)	67	23.82268222	31.700322333	29.06170131	29.73829294
ROA (X2)	67	0.002	0.231	0.065	0.054
EPS (X3)	67	0.168	66.317	21.352	16.616
Leverage (X4)	67	0.032	0.970	0.494	0.264

Source: Data from processed samples

The minimum, maximum, average, and standard deviation of size firm in natural logarithms are 23.82268222, 31.700322333, 29.06170131, and 29.73829294, respectively. If the data is changed to rupiah, the minimum, maximum, average (mean), and standard deviation of the size firm are Rp22,185,000,000, Rp58,516,516,000,000, Rp4,181,542,429,537 and Rp8,225,769,303,823, respectively. Minimum, maximum, average (mean) and standard deviation values for ROA are 0.002, 0.231, 0.065 and 0.054, respectively. All EPS is positive. These values indicate that all companies also make a profit. The minimum, maximum, average (mean), and standard deviation values in EPS are 0.168, 66.317, 21.352 and 16.616. All of ROA and EPS is positive. With this value, all companies make a profit. The minimum, maximum, average (mean), and standard deviation of the leverage values are 0.032, 0.970, 0.494 and 0.264, respectively.

After conducting a descriptive analysis, the next phase is to test the classical assumptions. The classic assumption test is conducted because it uses the ordinary least square (OLS) regression model. Tests carried out are tests of normality, multicollinearity, heteroscedasticity and linearity. The test results indicate that the data used have passed the test of these classic assumptions. Therefore the regression equation obtained is the best linear unbias estimator (BLUE). The next phase is to test the hypothesis by doing the t test. To complete testing the hypothesis, this study also presents calculating the coefficient of determination and simultaneous testing. The test proceeds are showed in the following table.

Table 4: Hypotheses testing results in non manufacturing firms

Direction (+/-)	Regression coefficient (β)	t test		Adjusted R Square	F test		
		t value	p value		F	Sig	
Constant		1.805	3.122	0.003	0.161	2.968	0.026
Firm Size (X1)	-	-0.123	-2.577	0.012			
ROA (X2)	-	-1.166	-1.975	0.053			
EPS (X4)	-	0.001	0.602	0.549			
Leverage (X3)	+	-0.115	-1.175	0.245			

Based on the table above, the proceeds of the regression equation model of this study are as follows.

$$Y = 1.805 - 0.123X1 - 1.166X2 + 0.001X3 - 0.115X4 + e \quad (2)$$

Table 4 shows that the regression coefficient on firm size is negative as expected. The probability value of the regression coefficient which is equal to 0.012 is lower than the significance level of 0.05. In consequence, the first hypothesis which shows that firm size has a negative impact on underpricing is significantly supported. The regression coefficient on ROA is negative as expected. The probability value of the regression coefficient which is equal to 0.053 is lower than the significance level of 0.10. Therefore, the second hypothesis which states that ROA has a negative effect on underpricing is significantly supported. The regression coefficient on the positive EPS is not as expected. The value of probability of 0.549 is greater than the level of 0.10 significance. Therefore, the third hypothesis which states that EPS has a negative effect on underpricing is unsupported. The regression coefficient on negative leverage is not as expected. The probability value of the regression coefficient which is equal to 0.245 is greater than the significance level of 0.10. Therefore, H4 shows that leverage has a positive effect on underpricing is unsupported. Thus the findings of this study are firm size and ROA have a significant negative impact on underpricing. The next finding, EPS and capital structure (represented by leverage) have no effect on underipricing. A summary of supported versus unsupported hypotheses is as follows.

Table 5: A summary of supported versus unsupported hypotheses

Hypotheses	Statement	t test	Supported/ Unsupported
H1	Firm size has a negative effect on Underpricing	Significant with α = 0.05	Supported
H2	ROA has a negative effect on Underpricing	Significant with α = 0.10	Supported
H3	EPS has a negative effect on Underpricing.	Not significant	Unsupported
H4	Leverage has a positive effect on Underpricing	Not significant	Unsupported

Based on descriptive data, all underpricing is positive. Therefore, in the primary market, there is underpicing in all companies. This is consistent with what was stated by Utamaningsih (2012 and 2013) that underpricing is a general phenomenon at the time of an IPO. Underpricing is detrimental for the issuer. However, underpricing can give a positive signal if one day the firm reissues its shares, which is known as seasoned equity offering (SEO) (Gumanti and Alkaf, 2011)

Discussion on the findings of the first hypothesis testing are as follows: Statistical analysis shows that H1 is supported. By having a regression coefficient of -0.123, if the size of the firm increases by one point, then underpricing decreases by 0.123. The firm size is increasingly giving a positive signal to the determination of the price of common stock in the primary market. Thus, an increase in firm size will reduce underpricing.

The findings in the second hypothesis testing that ROA has a negative effect on underpricing are supported. By having a regression coefficient of -1.166, if ROA increases by one point, then underpricing decreases by 1.166. A high level of ROA represents high firm profitability. High profitability is one factor that can increase the firm's positive value in the eyes of investors. Thus, profitability can reduce underpricing in firms when conducting an IPO. The findings of this study support research by Saputra & Suaryana (2016) which proves that ROA has a negative effect on underpricing.

Discussion on the findings that EPS does not affect underpricing are as follows: The insignificant influence shows that EPS cannot show a signal that the magnitude of EPS during an IPO can reduce the risk of uncertainty. Unsupported H3 can be caused because the calculated earning does not fully indicate the firm's financial performance. Firm income statements are often made for specific interests, and certain interests do not always reflect actual financial performance. These findings are consistent with research conducted by Suyatmin & Sujadi (2006) which proves that EPS has no effect on underpricing.

Discussion of the findings that leverage does not have a positive effect on underpricing is as follows: Because leverage represents the capital structure, it is stated that the capital structure has no effect on underpricing. The proceeds of this study support the study conducted by Handayani (2008) which proves DER has no effect on underpricing. The hypothesis is not supported because there are indications that companies in Indonesia use three theories of capital structure together, namely equity market timing, pecking order theory, also trade-off theory, in making capital structure policies (Miswanto, 2015). Therefore, the capital structure policy is not patterned. There are two or more theories that are used together are in accordance with the proceeds of the study conducted by Huang and Ritter (2009) that between one capital structure theory and the other is not mutually exclusive.

In the table above, the coefficient of determination on the model is 16.1%. The results show that there are variations in underpricing variables that can be explained by variables of firm size, ROA, EPS, and leverage of 16.1%. Then the remaining 83.9% variation in underpricing variables is stated by other variables not tested in this study. In the simultaneous test, the significance of 2.6% is lower than 5%. The test results show that variations in the value of underpricing variables can be explained simultaneously by firm size, ROA, EPS, and capital structure variables.

Conclusion and Suggestion

Simultaneously, variations in the value of underpricing variables can be explained by firm size variables, ROA, EPS, and leverage. The coefficient of determination on the model is 16.1%. The results show that there are variations in underpricing variables that can be explained by variables of firm size, ROA, EPS, and leverage of 16.1%. The t-test or partial test, firm size and ROA have a significant negative effect on underpricing. With a partial test also, it finds that EPS and leverage do not have an effect on underpricing. In this connection, investors in investing their funds in the primary market need to pay attention to financial variables, especially on the variables of firm size and profitability. Thus the findings of this study are firm size and ROA have a significant negative impact on underpricing, but EPS and capital structure have no effect on underipricing.

The limitations of this study are as follows: First, the sample used in this research is limited to non-manufacturing firms. Second, the variables used are only limited to the data contained in the prospectus, while in reality there are still many other variables that might impact underpricing. Third, the research period is relatively small, i.e. only vulnerable in 2009-2016. In this case it might be able to influence the results of testing hypotheses that are less than perfect.

Due to the conclusions and limitations mentioned above, the main suggestions for the next research are as follows: Subsequent research needs to re-examine the impact of financial and or non-financial variables on underpricing by linking wider variables, i.e. by adding variables of ROE (return on equity) and current ratio to financial variables and adding several non-financial variables, such as underwriter reputation and firm life. As research conducted by Reber and Fong (2006) also Indriani and Marlia (2015), underwriter reputation influences underpiricng.

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