



UNDERPRICING AND NUMBER OF RISK FACTORS OF INITIAL PUBLIC OFFERINGS IN INDONESIA

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Abstract. This study examines the effect of number of risk factors, use of proceeds for investment, size of issue and the level of ownership retained on initial returns of firm making Initial Public Offerings (IPOs) in Indonesian capital market. A sample of 290 Indonesia IPOs that went public between 1989 and 2005 were examined. The number of risk factors is found to be positively related to the level of average positive initial returns (underpricing). The level of ownership retention has negative but insignificant relationship with the level of underpricing. Firms that use the proceeds from the offering for investment or expansion purposes are less underpriced than their counterparts that use the funds for operating purposes. Size of issue is negatively associated with the level of underpricing.

Keywords: number of risk factors, ownership retention, use of proceeds, size of issues, level of underpricing, IPO.

JEL Classification: M10, M13.

Introduction

A prospectus shall be issued by a company prior to making an initial public offering (IPO). It offers data about many facets of the issuing firm that contains amongst others a brief chronicle of the firm's business, information related to past financial performance, ownership details, use of proceeds, the firm's long term strategic plans, and the hazards associated with the firm business. It is a legal document because it is the written proof that provides all the material facts related to the offering and both issuers and insurance agent are taking full responsibility for its accuracy. Data contained in a prospectus are often seen as the first window to a potential investor or so the firm's past and its projected future performance.

Ritter (1984, 1991) asserts that there are three anomalies inherent in the IPO setting, namely short term underpricing, cycle in volume, and long-term underperformance. Loughran et al. (1994) confirm that underpricing, a

condition where the aftermarket price of stock is on average higher than the offering price, is a world-wide phenomenon and not specific to one equity market or to a particular time-period. A number of theories have been proposed to explain why there is underpricing.

There have been extensive studies exploring the variables that could explain the variation of underpricing. Anderson et al. (1995) contend that the success of examining the factors depends on the success in selecting the proxies. Not surprisingly, there are various factors that have been found to be consistently associated with the level of underpricing. These include, amongst other, the level of debt, year of operation, size, the prestige of the underwriter or auditor, gross proceed, the number of risk factors mentioned in the issue prospectus, use of proceeds from the issue, the portion of ownership retained by the issuers, or market condition.

Katti and Phani (2016) review the existing IPO literature and assert that many factors are related to the uncertainty of

IPO pricing. They conclude that the level of underpricing is dynamic and there is simultaneous interaction of various market forces that determine the pricing variation of IPO. In addition, Chemmanur and Paeglis (2005) contend that the level of underpricing is determined by various firm specific attributes. These implicit and explicit attributes that could reflect the firm future prospect amongst others include ownership structure, industry membership, length in operation, size of the firm, issue size, reputation, the quality of management, etc.

This study focuses on non-accounting variables, namely the number of risk factors mentioned in the issue prospectus, the portion of ownership retained by the issuers, use of proceeds from the issue for investment or expansion purposes, and the size of the issue. Four hypotheses related to the determinants of the level of underpricing are examined, namely number of risk factors is expected to have a positive effect, ownership retention is predicted to have a negative effect, use of proceeds for investment or expansion is expected to have negative effect, and size of the issue is predicted to have a negative effect. This study examines a sample of 290 Indonesian IPOs for the periods 1989–2005. The results of the study confirm that number of risk factors, use of proceeds, and offer size have significant effect of the level of underpricing, but not for the ownership retention.

1. Literature review and hypotheses development

A number of signals have been identified empirically to be associated with the level of riskiness of the IPO and thus the level of underpricing. The associated factors can be classified into *ex ante* factors and *ex post* factors. Since *ex post* factors can only be identified after the offering, it is arguable that the *ex-ante* factors are more representative in determining the level of underpricing. The *ex-ante* factors could be in terms of financial and non-financial indicators. Yet, previous studies have found inconsistency on the effect of the examined variables. Given there are many proxies for *ex ante* uncertainty, researchers shall be selective in choosing the most appropriate proxies (Anderson et al. 1995).

The literature suggests that there are several reasons regarding the underpricing of IPOs. They are mainly divided into two major categories, namely underpricing due to asymmetric information and underpricing due to factors other than asymmetric information (Ritter and Welch 2002). The asymmetric information theory surrounding IPO valuation suggests that greater uncertainty has amplified the IPO mispricing (Ritter 1984, Beatty and Ritter 1986, Rock 1986). However, uncertainty without the initial market imperfection would not warrant the persistent of average underpricing. There is a large block of empirical studies that documents a positive relationship between initial return and proxy measures for uncertainty. Jenkinson and Ljungqvist (2001) categorize uncertainty and their corresponding

proxy measures into: (1) issuing firm attributes, (2) offer characteristics, (3) prospectus disclosure, (4) third-party certification, and (5) aftermarket characteristics. The current study focuses on the first three characteristics, namely the number of risk factors, the level of ownership retained by the issuers, the intended use of proceeds from the issue, and the size of the issue.

1.1. Number of risk factors and underpricing

Previous studies seem to largely ignore the importance of the number of risk factors available in the issue prospectus as one important variable in determining the riskiness of an IPO. Although there seems to be no existing theory on how the information about the number of risk factors is related to the level of underpricing in IPO, one should be aware that looking at the potential risk inherent to the issuing firm is merit attention. Clarkson (1994) and Clarkson and Merkley (1994) could be the first who examine such possibility.

The importance of the number of risk factors as one of potential sources of information in the valuation of an IPO is advocated by the Indonesian capital market governing body (the Otoritas Jasa Keuangan or OJK, formerly named Bapepam-LK). It requires firm to disclose either internal or external risk factors to the firm under the Bapepam-LK's Decision number 23/PM/1991. This requirement is stated in the guidance on the form and content of prospectus in response to the Ministry of Finance's decision Number 1548/KMK.013/1990 concerning Capital Market. Bapepam-LK has explicitly mentioned on the requirement that the issuing firm should disclose its analysis of risk factors. The issuing firm should analyze, among others, risk related to competition, raw material, other countries and international regulations, or government policy.

The variation of the number of risk factors among Indonesian IPOs is high. The number of risk factors mentioned in the prospectus ranges from one to 24 (Gumanti and Niagara 2006) and four to 63 (Gumanti et al. 2015). This high variation is interesting to examine, as being a public firm, the management has the obligation to disclose information relevant to the investor valuation purposes. Thus, every firm has its own reasons to disclose the risks. It must be certain reasons for a firm to disclose few risk factors, while the other voluntarily disclose many risk factors.

Previous studies have examined the importance of risk factors as the determinant of underpricing (Clarkson 1994, Clarkson and Merkley 1994, Hensler et al. 1997, Gumanti and Niagara 2006, Yatim 2011, Gumanti et al. 2015). Yet, the findings seem to contradict with the expectation. Clarkson (1994) finds negative and significant relationship between number of risk factors and the level of underpricing on a sample of 420 IPO firms that went public in the USA from 1976 to 1985. Similar finding is reported by Hensler

et al. (1997) when they examine 741 US IPOs that went public during 1975–1985. This negative relationship is also supported by Yatim (2011) who examines Malaysian IPOs. Gumanti et al. (2015) find negative and significant effect of number of risk factors on the level of underpricing on a sample of 63 firms that made IPO in Indonesian stock exchange from 2007–2012. Clarkson and Merkley (1994), find negative but insignificant relationship between number of risk factors and the level of underpricing of 180 IPOs that went public in Canada for periods of 1984–1987. Gumanti and Niagara (2006) interestingly reported positive relation between number of risk factors and the level of underpricing in Indonesia IPOs.

Following theoretical argument, the following hypothesis is proposed:

H₁: the number of risk factors is positively related to the degree of underpricing.

1.2. Retained ownership and underpricing

The firm will face problem associated with asymmetric information when approaches capital market for the first time. This affects the initial valuation and the size of initial return, i.e., underpricing. Two factors work to mitigate such risks. First, the process itself is strictly supervised by the regulator, i.e., OJK, that defines a wide range of disclosure requirements. The second mitigating factor is the ability of the new firm to signal its quality to the market that could be in terms of accounting or non-accounting information. Teoh et al. (1998) assert the usefulness of accounting information to discriminate among issuers in IPO of common stock markets. Unlike accounting information that is easily approached, non-accounting information should be carefully inferred. However, certain information has been perceived to be influential in the IPO markets.

Leland and Pyle (1977) assert that the greater the percentage of ownership retained by the issuers the higher is the quality of the IPO. Ownership retention could serve as a signal of information about the future prospects of the firm. Leland and Pyle's model, however, does not directly predict that the level of ownership retention is a signal of IPO initial returns. In this respect, Grinblatt and Hwang (1989), Allen and Faulhaber (1989), and Welch (1989) show that the level of underpricing could be used as a signal of IPO quality via the level of ownership retained by the initial owners. High quality firm uses the underpricing as a means of obtaining a greater price in the subsequent offerings.

Ownership structure of the issuing firm would have an impact on the agency costs which in turn affect the valuation of the firm. Going public could be used to reduce the monitoring cost by other shareholders (Pagano and Roell 1998). When combined with other factors, they could provide meaningful information for valuation purpose. Thus, the combination of ownership structure and other factors

would have an impact on decreasing or emphasizing the extent of information asymmetry in the IPO setting.

The structure of the equity ownership immediately after the IPO would be of the principal sources of agency risks. Original owners holding high percentage of equity could be interpreted as a positive signal in that the present owners do not want to dilute their ownership significantly. Another possible interpretation of this is that one might view the arrangement as one where the original majority insiders would exploit the new minority incoming shareholders. In such a situation, the new shareholders will require the issue to be underpriced to compensate them for these potential costs. Ownership retention is usually expressed in terms of the ratio of shares held by the initial owners (issuers) after the issue.

The argument stated above implies that the higher the ownership retained by the issuers, the higher the quality of the firm and accordingly the firm is regarded as less risky. This means that the expected initial return in the secondary market will be lower for a firm with high ownership retention than a firm with lower ownership retention. Thus, there will be a negative relationship between ownership retention and the level of underpricing.

The empirical evidence seems to be inconclusive on the relationship between retained ownership and underpricing. For example, Hedge and Miller (1996), Lee et al. (1996b), Efrata (2008), and Bhattacharya et al. (2010) find negative relationship, whilst Keasey and Short (1992), Lee et al. (1996a), Aggarwal et al. (2002), Bradley and Jordan (2002), Loughran and Ritter (2004), Johnston and Roten (2015), and Dell'Acqua et al. (2015) report significant positive relationship. Studies using Indonesian IPO relating to retained ownership have also been inconclusive. Gumanti (2000) reports the level of ownership retention has a positive relationship with the first 15 days initial returns. Siti Nurhidayati and Nur Indriantoro (1998) and Setiobudi et al. (2011) document negative but insignificant relationship. Venkatesh and Neupane (2006) find positive but insignificant relationship between retained ownership and underpricing of IPOs in Thailand for which initially they predict the coefficient would be negative given the nature of the Thai emerging market.

Thus, consistent with previous studies, the following hypothesis is proposed;

H₂: Ownership retention is negatively related with the degree of underpricing.

Two control variables were examined, namely the intended use of the proceeds from the issue and the size of the issue. We argue that the intended use of funds generated from the issue could serve as a signal for the quality of an IPO. There are two major components in the plan of utilization of proceeds that can be identified, namely capital expenditure and operating expenditure. In the case of

an IPO in Indonesia, capital expenditure can be shaped into two components, namely the purchase of machinery (investment purposes) and business expansion. Operating expenditures could be in the form of strengthening working capital or paying debt.

If the proceeds from the issue are used for capital expenses, such action can be considered as direct costs for the company, where for low quality company it could be very costly to do so (Welch 1989). For companies with good quality business management, capital expenditure can be regarded as an effort to improve the quality of the firm by increasing production capacity. If the proceeds are used for investment purposes, investors can assume that the quality of the company is good, so it should have a low level of underpricing. That is, there is an inverse relationship between the use of IPO proceeds for investment and the level of underpricing. Kim et al. (1993) find that the use of IPO proceeds for investment is negatively related to the level of underpricing in Korea. McGuinness (1993) uses the number of the utilization of the proceeds and finds a negative relationship with the level of underpricing. McGuinness does not explicitly explain whether these funds are dedicated for investment or not.

Referring to the review of the above arguments, it is predicted that there is an inverse relationship between the use of funds for investment (capital expenditure) and the level of underpricing. In this study the dummy variable is used to measure the use of proceeds from the IPO. The IPO firm will be scored 1 if the proceeds are used partly for investment purposes and zero otherwise.

Previous studies seem to agree that the size of the issue is negatively related with the level of underpricing. Ritter (1984) argues that large IPO size is perceived to be less risky than small IPO size. Larger IPO is also associated with high quality IPO and thus less risky which will lead to a lower initial return. The issue size appears to be consistently and negatively related to the degree of underpricing (Hedge and Miller 1996, Buckland and Davis 1990, Bhattacharya et al. 2010, Kayani and Amjad 2011, Sahoo and Rajib 2011, Francis 2017). Gumanti (2000) also finds a negative relationship on his study of Indonesia IPOs from 1989–1996.

Based on the aforementioned arguments, the study proposes two other hypotheses:

H₃: The use of funds from the IPO for investment purposes is negatively related to the degree of underpricing.

H₄: The size of the IPO is negatively related to the degree of underpricing.

2. Research methods

The population of the study cover all Indonesian IPO firms that went public from 1989 to 2005. During the periods of analysis, there were 378 IPOs and 290 IPOs met the selection criteria. A univariate test and multiple regression

are used to analyze the data. The following model is used to test the proposed hypotheses.

$$IR_i = b_0 + b_1NRF_i + b_2OR_i + b_3UP_i + b_4OS_i + \varepsilon_i$$

where IR is initial return, NRF is number of risk factors, OR is ownership retention, UP is use of proceeds, and OS is offer size.

3. Results

This study examines 290 IPO firms. These 290 firms represent about 83% of the population, that is, firms making IPO for the periods 1989–2005. Table 1 presents the descriptive statistics of the variables examined in this study. As shown in Table 1, the average initial return, calculated as the percentage difference between the first day closing price and the offering price, is 22.89%. Not reported in the table, the t-test for mean different shows that the average initial return is significantly different from zero. This indicates that on average the new issues are underpriced almost a quarter of their offering price.

Out of 290 firms, 29 firms are overpriced, 34 firms with an unchanged closing price, and the rest 237 or 81.72% experience underpricing. This figure is considered to be high when compared to some of Indonesian studies showing an underpricing level of around 10%. For example, Nasirwan (2002) documents an underpricing of 9.00%. One company was underpriced by as much as 480%, which is considered to be extraordinary. Gumanti et al. (2015) report an average underpricing of 25.32 percent on their study of 63 IPOs that when public from 2007 to 2012. Overall, this finding confirms that on average Indonesian IPOs are underpriced.

The number of risk factors ranges from 1 to 24 with an average of 7.20. Looking at the standard deviation of 3.21, we may argue that most of the issuing firms have relatively similar number of risk factors. A close examination of the risk factors indicates that competition, exchange rate fluctuation, and government regulation are the most frequently cited. This implies that most of the issuing firm perceived that the exchange rate is a risk that needs to be carefully

Table 1. Descriptive statistics of variables

Variable	Mean	Median	Standard Deviation	Minimum	Maximum
Initial return (%)	22.89	7.14	47.45	-32.56	480.00
Number of risk factors	7.20	7.00	3.21	1.00	24.00
Ownership retention (%)	76.21	77.04	10.07	45.96	97.37
Offer size	24.69	24.60	1.23	22.11	30.22

looked after. This also indicates that Indonesia Rupiah is regarded as a volatile currency that needs special attention.

The average ownership retention is 76.21% with a minimum of 45.96% and a maximum of 97.37%. The average of ownership retention is comparable to Gumanti (2000), or Clarkson and Merkle (1994) of Canadian IPOs or Wang and Iqbal (2006) of US IPOs. A maximum ownership retention of 97.37% means that there is a firm that sells only a very small fraction of ownership, i.e., only 2.63% of the total outstanding shares. This figure is interesting given that the issuers do not disperse their ownership an indication of high level or high quality firm, *ceteris paribus*.

The issue size varies significantly, from the lowest of IDR4.0 billion to the largest of IDR13,365.0 billion. The mean issue size is IDR52.8 billion. Not reported in Table 1, out of 290 sample firms, there are 85 firms or 29.31% that use the proceeds of the offering for non-expansion related activities. In other words, 205 firms dedicate most of the proceeds of the issue for expansion or investment purposes.

The results of regression analysis are presented in Table 2. The coefficients of all variables are as expected. Number of risk factors are positively related to the level of underpricing ($t = 3.2906$; $p < 0.01$). This positive correlation is as expected and thus accepts the hypothesis that the higher the number of risk factors exhibited in the issue prospectus the higher is the level of underpricing. The finding reported here is in contrast to Clarkson (1994), Hensler et al. (1997), Yatim (2011), and Gumanti et al. (2015).

To compare with, the finding of this study is different with Gumanti et al. (2015). Gumanti et al. (2015) examine more recent IPOs, from 2007–2012. They report the average number of risk factors of 21.51 ranging from 4 to 63 risk factors. The current study employs the data of IPOs from 1989–2005 with the average number of risk factors of 7.20 ranging from 1 to 24 items. It seems that the IPO firms in the more recent period are willing to disclose more risk factors than those in the older time. Is the willingness to disclose more risk factors be the cause for this difference? We might argue that in the spirit of good corporate governance,

disclosing more information, in this case is the risk factors, may be judged to have better openness and thus better valuation that could lead to lower the riskiness of the firm.

We note here that there is one important implication of the positive correlation between the number of risk factors depicted in the issue prospectus and the level of underpricing. Investors in IPO market would perceive that firms exhibiting larger number of risk factors are more risky than those with less number of risk factors. This has made them to demand higher expected return as indicated by, on average, higher level of underpricing. So, the tradeoff between risk and return in the case of the number of risk factors and initial return in Indonesia IPO markets for period 1989–2005 is evidenced.

To check whether firms with higher number of risk factors significantly have higher levels of underpricing, the sample is divided into two groups based on the median value of the number of risk factors. As shown in Table 3, the mean initial return of firms with larger number of risk factors is significantly higher than the initial returns of firms with lower number of risk factors of 33.21% compared to 12.57% ($t = -3.7891$; $p < 0.01$). Thus, the finding supports the initial findings of positive correlation between the number of risk factors and the level of underpricing.

Ownership retained by the issuers does not affect significantly the level of underpricing although the coefficient is in the predicted sign. This finding does not support Leland and Pyle (1977) who argue that issuers of high quality firms will use the ownership proportion as a signal of good future prospect. Potential investors will assign this firm with higher expected return because issuers are perceived to have good prospects. A high percentage of equity retained by the original owners could be interpreted as a good and positive signal, in that, the present owners do not want to dilute their ownership significantly.

The negative relation between ownership retention and the level of underpricing reported here is similar as shown in Nasirwan (2002), Nurhidayati and Indriantoro (1998), and Setiobudi et al. (2011). This negative relationship is merit for attention, because investors would perceive that firms sell more portions of shares in the IPO market will be judged to have better quality compared to those that sell less portions of the shares. To ascertain that this negative correlation is not a coincidence, a t-test for mean difference is performed by dividing the sample into two groups based on the level of ownership retention. As reported in Table 3, the mean underpricing of firms with lower ownership retention is 26.47%, whilst for firms with higher level of ownership retention is 15.75% ($t = 1.2882$). This finding does support an initial finding of negative correlation between the level of ownership retention and the level of underpricing. However, given there is no significant relationship, the second hypothesis cannot be accepted. In other words, the

Table 2. Results of regression analysis

Variable	Predicted sign	Coefficient	t-value	R ² (Adj.R ²)
Intercept		2.5707	4.3336***	7.905 (6.613) F = 6.116 (p = 0.000)
Number of risk factor	+	0.0312	3.2906***	
Ownership retention	-	-0.3501	-1.2327	
Use of proceeds	-	-0.1027	-1.7244**	
Offer size	-	-0.0902	-3.6990***	

Note: ***, ** denote significant at 1% and 5% levels, respectively.

level of ownership retention is not associated with the level of underpricing.

The use of funds generated from the IPO for investment and/or expansion purposes is found to be negatively related to the level of underpricing. This finding is similar to the studies of Korean IPOs by Kim et al. (1993) and Indonesian IPOs by Kristiantari (2013). Table 2 shows that this variable has negative and significant effect on the level of underpricing. The result of the univariate test does support the regression analysis (Table 3). Thus, it can be concluded that IPO firm that uses the fund mainly for investment and/or expansion purposes will be judged to be high quality firm so it must be related to less risk and consequently less underpriced than its counterpart that uses the funds for supporting its operational expenses.

Similar to previous studies, the study finds that larger IPO firms in terms of the size of the issue, measured as the gross proceeds, will be judged as high quality and less risky than smaller IPO firms. The univariate test also confirms the result reported in Table 2, that larger IPOs are less underpriced than smaller IPOs. The mean initial return for larger IPOs is 15.73%, while smaller IPOs have a mean of 30.04% ($t = 2.5935$). Thus, it is almost certain that smaller IPOs are perceived to be riskier than larger IPOs so that investors demand higher expected returns. This finding supports the size anomaly in the IPO market (Ritter 1984).

Conclusion and further study

This study examines whether the number of risk factors available in the issue prospectus explain the variation of the level of underpricing. As predicted, it finds that the number of risk factors is positively related to the level of underpricing. This means that the riskier the IPO firm as indicated by the number of risk factors indicated in the prospectus, the higher is the level of underpricing. It documents that the level of ownership retained by the issuers is not related to the level of underpricing. IPO firms that use the proceeds from the issue for investment or expansion purposes are less underpriced than those that use the proceeds for operational purposes. It also documents that larger IPOs are underpriced less than smaller ones.

This study has two limitations. First, it does not control for the effect of industry characteristic relating to the uncertainty on the level of risk factor. We might argue that certain industry may have unique characteristics and thus the level of risk. This risk difference could lead to a different judgment of the investors' risk analysis of the IPO. The second limitation relates to the unit of analysis. This study does not differentiate the sample based on a number of classifications, such as the year of IPO or differentiating between pre and post economic crisis. The Indonesia economy has severely been hit by economic crisis between

Table 3. Results of univariate tests on mean difference number of risk factors, retained ownership, use of proceeds, and size of IPOs

Variable	Mean	Mean Difference	t-value (one-tailed)
Lower number of risk factors	0.1257	-0.2064	-3.7891***
Higher number of risk factors	0.3321		
Lower retained ownership	0.2647	0.0717	1.2882
Higher retained ownership	0.1575		
Non expansion/ investment use of proceeds	0.3036	0.1057	-1.7323**
Expansion/investment use of proceeds use of proceeds	0.1979		
Smaller IPO size	0.3004	0.1431	2.5935***
Larger IPO size	0.1573		

Note: *** and **, denote significant at 1% and 5%, respectively.

1998 and 2002 that would affect the market participants in dealing with the new issue market. Thus, further study may analyze whether industry membership could differentiate the level of underpricing after controlling for the number of risk factors or by comparing the period of analysis between pre and post economic crisis.

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