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Initial Returns, After Market Performance and the Speed of First Seasoned Equity Offerings in Indonesia: A Quantile Regression Approach

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Abstract

This study aims to identify signalling theory and market feedback theory as asymmetric information proxies in Indonesia's capital market to analyse the relationship between IPO and FiSEO using OLS and quantile regressions approach. The authors conducted this study based on the idea that it is more meaningful and relevant to investigate the determinant of the speed of FiSEO at different distribution points rather than covering the overall distribution. OLS and quantile regression analysis was applied to 128 samples of IPO companies in IDX during the period 1990–2013. The results show that signalling theory can explain the speed of conducting FiSEO in the Indonesian Stock Exchange (IDX). Testing with quantile regression explains that under-pricing is only able to explain the implementation of FiSEO, which happened not long after the IPO time (that is up to a period of 3.26 years or Q50). Age as a life cycle proxy is also able to explain the speed of implementing FiSEO.

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Received: 29 August 2018
Accepted: 18 September 2018
Published: 11 November 2018

Publishing services provided by Knowledge E

Selection and Peer-review under the responsibility of the ICOI-2018 Conference Committee.

1. Introduction

The research phenomenon surrounding the IPO event attracts many researchers. One of the interesting topics is linking IPOs with the issuer's plan to do seasoned equity offering (SEO) (Chang et al., 2004; Hertszel et al., 2012; Allen and Faulhaber, 1989; Ibbotson, 1975; Welch, 1989; Gumanti and Alkaf, 2011; Slovin et al., 1994; Welch, 1996). The main reason companies do an IPO is to access the capital market. According to sequential financing theory, in the period prior to the IPO, the company planned all of its investment fund needs. Part of the funding needs will be collected through IPO mechanisms, the remaining funding needs will be met through the mechanism of seasoned offerings (Allen et al., 1989).

The first seasoned equity offerings (FiSEO) activity can cause the company to encounter high uncertainties. In relation to capital market conditions, the new publicly traded company has not been able to fully estimate the efficiency of the capital market. Asymmetric information will be greater in markets with low efficiency. Considering such limitations, the FiSEO issuer should really consider the timing of FiSEO implementation.

This research was conducted to analyse factors around the IPO event which become determinant of the speed of the company in doing FiSEO. A quantile regression approach was used as a complement to multiple linear regression (OLS). The study also used several control variables such as the quality of underwriters, ROA, the company's age at the IPO, total assets of the company, and capital expenditure.

2. Literature Review

There are several opinions related to the under-pricing phenomenon of IPOs, one of which is the asymmetric information in the distribution of information between market participants during an IPO. Market participants with interests in under-pricing at the time of IPOs are companies, underwriters, and investors (De Lorenzo and Fabrizio, 2001; Al-Shammari et al., 2013). The offering price of stocks in the primary market is determined based on an agreement between the issuer and the underwriter. As a party in need of financing, the issuer wants a high initial price. On the contrary, the underwriter seeks to minimise the risks incurred.

Asymmetric and adverse selection information has been investigated and associated with many events. Both of these can also be viewed from several points of view. In the investment field, asymmetric information can be linked to asset selection as well as funding policy. Asymmetric information, which often occurs in the capital market, is the ownership of information about the company by managers or agents that is not owned by outside parties. Based on these considerations, as a manager, an agent has an interest in providing a signal regarding the condition of the company to stakeholders including shareholders as investors and potential investors. Potential investors should know well the stocks to be bought before the investor makes an investment. This means investors will seek information about stocks in a complete and precise way in order to get capital gains in the future. Lambert et al. (2012) state: Because of information asymmetries, differentially informed traders will choose to hold different portfolios of securities. Therefore, Merton (1987) states that asymmetric information leads to the cost of obtaining and processing data and costs of channelling information from one party to another.

Signalling is done by a company since going public, by offering shares at prices below their intrinsic value, known as under-pricing. The under-pricing of IPO shares is indicated as a signal from the issuer to potential investors (Allen and Faulhaber, 1989; Jegadeesh, 1991). This signalling is expected to be acceptable and well perceived by investors. The signal deployment is done because prospective investors and the market generally do not know the condition of the company before going public. After the first day of trading, information about the company will be more open so that the market will react to the information with a marked increase in stock market prices after trading in the secondary market. Conversely, for the less good companies, there can be a different market reaction; namely a decline in market prices after trading in the secondary market. However, the more frequent phenomenon in many capital markets in the world is under-pricing.

Under-pricing in the primary market is indicated to be the basis for determining the company's policy of when it will again raise funds from the capital market. The under-pricing level is expected to be a reference to the decision of when to do a seasoned offering. This decision relates to the speed with which companies are refinancing from the capital market since the IPO. Being a public company through an IPO will increase the company's access to funds from the capital market by issuing new shares, bonds and hybrid financing such as convertible bonds, stocks with warrant and so on. According to Jenkinson (1990), a discounted IPO price will have 'left a good taste in investors' mouths'. This impression will be useful to increase investor interest whenever a company seeks future equity financing. According to Jenkinson (1990), a company that does not immediately return to the stock market does not under-price its share price. Supporting the signalling theory, Jegadeesh (1991) and Jegadeesh et al. (1993) state that there is a positive relationship between the level of under-pricing and the possibility of companies refinancing by issuing securities or doing seasoned offerings. Companies that get less funds from the IPO (high under-pricing) will carry out capital increase more quickly. The higher the initial returns, the higher the trend of seasoned equity offering within three years after the IPO. Hertzel et al. (2012) even stated that many companies recognise that the funds collected during the IPO are not enough to fund the expected investment in the future; therefore, a return to the stock market is anticipated. This is the reason that staging (sequential financing), despite increasing issuing costs, becomes a central decision when the company decides to conduct an IPO.

The theory of market feedback (Jegadeesh et al., 1993; Levis, 1995; Hill and Hillier, 2007) suggests that after market returns are more likely to demonstrate the possibility of FiSEO. According to this theory, under-pricing is done to encourage regular investors to disclose real corporate value information. Therefore, after the IPO, the market will make a correction on the fair price of the stock. If the price formed after the IPO is profitable, the issuer will consider doing FiSEO for funding needs. The realisation of the value of the issuer will actually appear on the 20th or 40th day after the stock's first trading day (Jegadeesh et al., 1993). According to Jegadeesh et al. (1993) and Jiang et al. (2015), the performance of the stock market price after the IPO is positively related to the probability, speed and size of FiSEO.

3. Methods

3.1. Data

Based on the record of the Indonesia Stock Exchange (IDX), there were 128 IPOs during the period 1990 to 2013 which led to FiSEO. IPO-related information – including the name of the issuer, asset value, age at the time of conducting the IPO, as well as the name of the underwriter – is obtained from the prospectus of stock offerings available at the Indonesian Capital Market Directory (ICMD) and Indonesia Capital Market Electronic Library (ICamel). Daily stock price information is obtained from Indonesian Capital Market Directory. The final sample size was 128 companies that conducted IPO during the 1990–2013 period.

3.2. Measures

The speed of FiSEO is the time interval between the day of the IPO and the FiSEO is calculated in units of years. IPOs under-pricing is calculated using Market Adjusted Initial Returns, which uses the formula:

$$IR_i = \frac{P_{i1} - P_{IPO}}{P_{IPO}} \quad (1)$$

and

$$MAIR_i = IR_i - Rm_1, \quad (2)$$

where P_{i1} is the closing price of first trading day IPO stock, $P_{IPO}$is IPO price, and $Rm_1$is the market returns on the first trading day of IPO stock. The after-market performance of IPOs is measured by Cumulative Abnormal Returns (CAR) a few days after the first trading day of IPO stocks. In this article CAR is measured at 20 and 40 days after IPO, so it is written as CAR20 and CAR40 and calculated using the formula:

$$AR_{it} = R_{it} - -Rm_t \quad (3)$$

and

$$CAR20/40 = \sum_{t=1}^{20/40} AR_{it}, \tag{4}$$

where AR_{it} is the abnormal returns of stock *i* in period *t* and Rm_t is the market returns in period *t*.

Other variables are used to examine the determinants of the speed of FiSEO, which are: underwriter reputation (UW), computed as the total IPO value backed by a particular underwriter divided by total IPO value in the market over a period of time; issuer's profitability, measured by the issuer's ROA one year prior to FiSEO; company's position in the life cycle stage, as a proxy of risk, is measured by company's age (AGE); size of the firm, measured by the natural logarithm of total assets one year before IPO (LnTA); and CAPEX, calculated as changes in the net property, plant, equipment of company *i* in the IPO year, compared to the previous year.

OLS and quantile regressions are used in testing the relationship between initial returns and after market performance, as well as the determinants of the speed of FiSEO, using the following model:

$$\begin{aligned}\text{SPEED}_{FiSEOi,t} &= \alpha + \beta_1 MAIR_{i,t} + \beta_2 CAR20_{i,t} + \beta_3 CAR40_{i,t} + \beta_4 UW_{i,t} \\ &\quad + \beta_5 ROA_{i,t--1} + \beta_6 Age_{i,t} + \beta_7 Size_{i,t} + \beta_8 CAPEX_{i,t} + \varepsilon_{i,}\end{aligned} \tag{5}$$

We use the quantile regressions developed by Koenker and Bassett (1978) and Koenker (2005). This method was chosen with the consideration that the OLS regression may not be appropriate in dealing with extreme values and outliers in the distribution of the dependent variables. By using OLS some interest groups may be ignored. Estimation with quantile regressions as a complement to ordinary least square regression gives an opportunity to compare the marginal effect of independent variables across the conditional distribution of dependent variables. In addition, better than OLS regression, the estimated coefficients of the quantile regression are not sensitive to outliers of the dependent variable.

Considering (yi, xi) *i* = 1,......, N is a sample derived from a population, where xi is a Z × 1 vector of independent variables and yi represents the dependent variable, a quantile regression model is specified as follows:

$$y_i = x_i \beta_{(q)} + \epsilon_{i(q)} \tag{6}$$

For a given quantile of $0 < q < 1$ the value of $\beta(q)$ is obtained by minimising the average weighted distance of y_i and y_i' as follows:

$$\beta_{(q)} = avg \min \left(q \sum_{y_i \geq x_i' \beta_{(q)}} \left| y_i - x_i' \beta_{(q)} \right| + (1-q) \sum_{y_i < x_i' \beta_{(q)}} \left| y_i - x_i' \beta_{(q)} \right| \right) \quad (7)$$

4. Results and Discussion

4.1. Descriptive

Table 1 shows descriptions of 128 IPO companies for the period 1990–1913. The mean of MAIR (market adjusted initial returns) during the study period is 22.64% (t-stat 7.402). The positive average value of initial returns in the Indonesian equity market is the same as in many world capital markets where, on average, the closing price on the first trading day is higher than the stock's offering price at IPO, that is, under-pricing.

Indonesian firms go public on average at the age of 16.14 years, with a standard deviation of 14.12. This shows that the company's age range in Indonesia when conducting IPO is very wide; from two to 30 years. This enormous age difference of corporations is unique in the Indonesian capital market, given that many studies show that the firm's age will affect risk (Ritter, 1984; Hensler et al., 1997; and Shultz, 1993).

Table 1: Descriptive for IPO companies.

Descriptive								
Variable	Q1	Median	Q3	Mean	Standard Deviation	MAD	Min.	Max.
MAIR (%)	1.5728	6.4536	25.8047	22.6438	49.7767	10.1701	−69.0842	254.1755
CAR20 (%)	−2.6071	10.1989	34.0575	27.3993	56.8294	21.5603	−59.6422	249.3739
CAR40 (%)	−8.0776	1.9719	10.1648	2.3687	17.7945	13.0271	−57.8903	65.2892
UW (%)	1.1484	2.7091	6.7634	6.3525	9.2787	2.6261	0.0604	46.3239
ROA (%)	1.6678	4.3468	8.5084	4.532	9.72	4.3358	−50.1474	43.3702
AGE (Years)	8.0753	13.0877	19.3233	16.1447	14.124	8.2863	2.1479	85.4438
LnTA	24.5785	25.5965	26.7573	25.6002	2.6079	1.5333	23.0289	30.2459
CAPEX	0.0338	0.236	0.9781	1.367	4.7297	0.4	−0.5778	37.5528
SPEED (Years)	2.2849	3.2603	6.7712	5.256	4.9374	2.4534	0.8959	25.2356
LNSPEED	0.7952	1.1805	1.9126	1.3195	0.797	0.7638	−0.1099	3.2283

The average speed of the company performing FiSEO is 5.26 years, with a standard deviation of 4.94 and a median of 3.26. This large standard deviation suggests that although some companies are refinancing in the stock market in less than a year, there are also some which return after more than 10 years. In general, it can be said that the time range to conduct refinancing from the stock market is quite long for Indonesian companies.

Table 2 shows there are three variables that are able to explain the speed of performing FiSEO, that is, MAIR, Age, and ROA. MAIR, which is a measure for signalling theory, which can explain FiSEO better than CAR 20 and CAR 40, which are the proxy of market feedback theory. Quantile analysis shows that MAIR is able to explain FiSEO, which is implemented up to 3.26 years post IPO (Q50). These results indicate that the initial returns are still relevant in considering the decision of FiSEO for a period of less than four years. After that period the initial returns are no longer relevant, as indicated by its insignificant influence on the FiSEO decision. This is due to the increasing amount of material information released in the market, with the increasing distance of time from the time of IPO.

Table 2: Regression result for speed of FiSEO.

	OLS	Q10	Q25	Q50	Q75	Q90
(Constant)	1.3257**	0.2500	0.3753	1.8883	4.0349	3.8279
	(2.20)	(0.36)	(0.47)	(1.53)	(1.55)	(1.12)
MAIR	0.0040**	0.0068**	0.0056*	0.0059**	0.0019	−0.0002
	(2.20)	(2.48)	(2.67)	(2.55)	(0.80)	(−0.06)
CAR20	−0.0009	−0.0005	−0.0016	−0.0027	−0.14	−0.0003
	(−0.64)	(−0.25)	(−1.11)	(1.36)	(0.889)	(−0.08)
CAR40	−0.00161	−0.0010	−0.0032	−0.0050	0.0000	−0.0020
	(−0.42)	(−0.13)	(−0.56)	(1.03)	(0.00)	(−0.33)
UW	−0.0026	0.0071	0.0012	−0.0017	0.0061	0.0030
	(−0.33)	(0.36)	(0.11)	(−0.17)	(0.43)	(0.12)
ROA	0.0159**	0.0037	0.0096	0.0189***	0.0177	0.0289
	(2.24)	(0.31)	(0.89)	(1.68)	(1.33)	(1.55)
AGE	0.0152***	0.0153***	0.0131**	0.0176**	0.0185**	0.0108
	(3.07)	(1.93)	(2.00)	(2.27)	(2.19)	(0.94)
LnTA	−0.0141	−0.0082	0.0035	−0.0419	−0.1047	−0.0696
	(−0.54)	(−0.32)	(0.11)	(−0.87)	(−1.00)	(−0.50)
CAPEX	−0.00509	−0.0028	0.0077	−0.0039	−0.0179	0.0050
	(−0.35)	(−0.05)	(0.17)	(−0.14)	(−0.28)	(0.04)

Table 2 reports the results from OLS and quantile regressions of LnSpeed during the period 2009–2013. *T*-statistics are in parentheses. *, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 2 also shows that age affects the speed of FiSEO up to Q75 or 8.6 years from the IPO time. The ability of an age to explain the speed of doing FiSEO even up to 8.6

years from IPO time is due to age. As described in many studies, age is a proxy of risks (Ritter, 1984; Hensler, Rutherford and Springer, 1997; and Shultz, 1993). The older the company's age, the more experience, so that the possibility of failure is smaller. The relationship between age and initial returns along the quantile of dependent variables is consistent with the prediction, which is increasing in line with the quantile. The results of this study also support previous findings related to the age relationship with the speed of FiSEO (Meidiaswati, 2017), where the age of the company at the time of IPO consistently has a positive effect on the speed of FiSEO. The results of this test indicate that with the approach of quantile regression the speed of FiSEO can prove the signal theory applies in the Indonesian capital market. This proof is obtained using the initial returns, as measured by MAIR.

ROA, as a measure of profitability, affects the speed of FiSEO in testing with OLS. However, the tests with quantile regression found the only relationship of the two variables in Q50. These results indicate that the consistency of ROA as a firm speed predictor of FiSEO is very weak.

5. Conclusion

This study aims to identify the relationship between initial returns and after market performance and the speed of the FiSEO of IPOs in the Indonesian Stock Exchange during the period 1990–2013. In addition to looking for these relationships, the study also investigates control variables such as UW, ROA, age, total assets, and CAPEX. To get a better explanation, the analysis was done using OLS and quantile regressions methods.

Tests with quantile regressions explain that under-pricing can only happen to immediate FiSEO, that is, up to a period of 3.26 years post IPO (Q50). This can happen because with a longer IPO and FiSEO time span, initial returns are no longer relevant when considering FiSEO decisions, as more information can affect FiSEO decisions. Age as a life cycle proxy can explain the implementation of FiSEO up to 6.8 years post IPO period (Q75). Age affects the decision of FiSEO for a longer period of time because age, as mentioned in many studies, is a proxy risk (Ritter, 1984; Hensler, Rutherford and Springer, 1997; Shultz, 1993). The older the company's age, the more experience, so that the possibility of failure is smaller. The results of this study also support previous findings related to the age relationship with the speed of FiSEO (Meidiaswati, 2017), where the age of the company at the time of IPO consistently has a positive effect on the speed of FiSEO.

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