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Do Investor Overreact and Overconfidence? The Evidence from Initial Public Offering in Indonesia

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Study on a phenomenon of underpricing and the declining performance of underpriced stocks are still unresolved. This research explains the causation of underpricing and it performance at a long time later. The results of this study confirm the behavioral finance theory on the dynamic capital market, especially confirm Overreaction Hypothesis (OH) on Initial Public Offering (IPO) activity. Underpricing at IPO activity caused by the overconfidence of investor, in which it behavior stimulate the overreaction investor's demand on offered stocks. The high demand for stocks will increase stocks' price above it intrinsic value. Therefore, it the price will be corrected in a long time later, it is proven by the declining long-run performance of underpriced stocks.

Keywords: IPO, Underpricing, Overconfidence, Overreaction

INTRODUCTION

Many scholars have examined on Initial Public Offering (IPO), the one of the many phenomenon on IPO is underpricing. Underpricing is a phenomenon if the price of initial offering lower than the price of first market trading. In other words, in the case of underpricing, investors got positive initial return if they bought stocks at IPO (F Bamisch et al, 2011). Many researchers argue that underpricing occurs because a logical consequence in bearing more risk due to the asymmetric information (F Bramsich et al., 2011; Husnan, and Triaryati, 2004; Michaely, and Shaw, 1994; Dong, Michel, and Pandes, 2011; Su, and Bangassa, 2011; Kim, Krinsky, and Lee, 1995; Gasbarro, Bundo, and Zumwalt, 2003). According to the efficient market theory, the information will rapidly absorbed by the market, therefore it adjusted in its prices. In the context of the IPO, the price of the IPO will quickly adjust to reflect the availability of information (Husnan, Triaryati, 2004). In other words, despite the abnormal return at the time of the IPO, it did not break the efficient market hypothesis. Because as soon as possible market will adjust the information then the price

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that produced abnormal return will be coreccted rapidly.

However, some researchers in behavioral finance provide different pastures. Based on behavioral finance perspective at the time of the IPO, underpricing occurs because the irrationality of investor. It caused investor had imperfect information due to the fundamental of asymmetric information. The asymmetry information will happen in a long time, it is different from the hypothesis of efficient market..

Based on Rock (1986), investors are divided into two (2) types, namely uninformed investors and informed investor. Informed investors are investor who have better information than uninformed investor. Those who controlled the information better off than those who do not master the information because of its ability to interpret the information signal issued by the company at the time of the IPO. So when investors know that the price of the shares offered is underpriced, then he will buy the shares. Cornelli, Goldreich, and Ljungqvist (2003) states that the parties did not control the information will tend to be irrational. One of the properties owned by the irrational investor is overreact. It cause in investors' assessment of the stocks of companies that did IPOs too high. Finally, informed investors will gain initial return due to the fault of uninformed investor in the aftermarket (Cornelli, Goldreich, and Ljungqvist, 2003).

INVESTOR PSYCHOLOGY

In last few years, academic attention and research on behavioral finance show enhancement. Basu (1978) in his research found stocks with low P / E have superior returns than stocks with high P / E. It is implicitly showed a discrepancy of investors in response to the information, as a rational investor would prefer a good stock than a bad stock. It results show the evidence of market anomaly. Thereby, efficient market hypothesis' approach in which assume investor are always rational in decision making less relevant to understand and elaborate market anomalies. DeBondt and Thaler (1985, 1987, 1990) specifically states that in order to understand and explain the dynamics of the share price movement of individual behavioral approach is necessary. Thus, understanding of psychological dimension of investor will give a deep explanation about the condition of the capital market completely (Dreman, and Lufkin, 2000). This research will use the behavioral finance framework to describe the phenomenon of long-term performance of underpriced stocks. Within the framework of the behavioral finance theory, Cornelli, Goldreich, and Ljungqvist (2006) states that underpricing occurs when retail investors, uninformed investors are overconfidence and stocks overreact when the shares were first traded on the exchange. Uninformed investor difficult to distinguish between good and bad information, because they have not good enough ability for it. Therefore, uninformed investor used information from informed investor's analysis of investment decisions (Agarwal, Liu, and Lee, 2008). They always follow and overconfidence to the decision of informed investors, who has good ability to analyze the potential of initial public offering. The behavior of overconfidence will make stocks overreact and go up much from its intrinsic value. Perilaku overconfidence secara detail dijelaskan oleh Brunnermeir, Papakonstantinou, dan Parker (2016). First, the agent has anticipatory utility, so if he believes the task to be easy, he is happier in the present because he anticipates less work in the future. This ingredient provides an anticipatory benefit of optimistic beliefs. Second, the agent chooses optimal actions given his beliefs, so if he has optimistic beliefs, he does little work in the present and ends up poorly smoothing work over time.

In the context of this research, the informed investor buying behavior causes the uninformed investor overconfidence and overreact in the purchase of stocks. The uninformed investor considers an accurate analysis of informed investors, so they no longer need to perform in-depth analysis when buying stocks. Investor overconfidence, besides resulting overreact at the time of the purchase of stocks, the behavior of underreact occur towards public information when the purchase decision has occurred. Daniel, Hirshleifer, and Subrahmanyam (1998), states that the company's stock price above intrinsic value takes a long time to adjust back to the intrinsic

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value. One of the compelling reasons why it happens Because The information in the market is fundamentally asymmetric (Li, McInish, Wongchoti, 2005). The asymmetrical condition worsened with investor underreact to information available so the stock price will be corrected to the intrinsic value in the long time period (Daniel, Hirshleifer, and Subrahmanyam, 1998; Brunnermeir, Papakonstantimou, and Parker, 2016). Ritter (1991) stated in his research that the company's stock price at the time of the IPO underpricing suffered will be corrected within a period of 3 years, some previous studies have also expressed the same opinion (Yi, 2001; Ajlouni, Albazie, 2009; Choi, Lee, and Megginson, 2010; Chan and Lo, 2010; Chorruk, and Worthington, 2010; Chan, and Yung, 2011; Dong, and Pandes, 2011). In this research use trading volume to capture the behavior of investor overconfidence. It also imply that more trading volume mean investor overreact to realize his beliefs.

CONCEPTUAL MODEL

As indicated across the paper, the purpose of this study is to investigate the effect of trading as proxy of investor overreaction, and long-term performance of underpriced stocks

<u>**FIGURE 1 HERE**</u>

Main hypothesis: The relationship between trading volume and long-term performance of underpriced stocks is negatively significant .

RESEARCH METHODOLOGY

This research use Initial Public Offering (IPO) data in Indonesia at 1995 to 2007. Thereafter, from those data we calculate the initial return (IR), and choose which stocks that underpriced on IPO activity then calculate the monthly stocks performance 3 years after IPO as a proxy of long-term performance. Based on our data, 78% of the IPO activity in Indonesia underpriced. Table.1 show the detail of the data in IPO activity in Indonesia.

<u>**TABLE 1 HERE**</u>

The sum of IPO activity in 1995 to 2007 are 184 firms, like I said above that 78% of it are underpriced. The average initial return from 1995 to 2007 are 29% in unstandardized and 3% in standardized initial return. This research exclude firms which delisted from Indonesian Stock Exchange at the period of long-term performance calculation. The delisted firms are 32 firms, thereafter this research use 111 firms to calculate long-run performance

DATA ANALYSIS

Buy and Hold Abnormal Return (BHAR) is used to calculate 3 years performance of underpriced stocks (Chorruk, and Worthington, 2010). We use firms which are in the same industry to benchmark performance of underpriced stocks.

$$BHR = \left[\prod_{t=1} (1+r_{it}) \right] - 1$$

$$BHR_{bench} = \left[\prod_{t=1} (1+r_{bench}) \right] - 1$$

$$BHAR = BHR_{it} - BHR_{bench}$$

$$ABHAR = \frac{1}{n} \sum_{i=1}^{n} BHAR_{it}$$

$$BHAR(t\text{-}stat) = ABHAR / (\sigma(BHAR)/\sqrt{n})$$

where,

r_{it} = initial return of underpriced stock

r_{bench} = return of benchmark firms

$BHAR_t$ = abnormal return at t

BHAR = buy and hol abnormal return

ABHAR = adjusted buy and hold abnormal return

BHAR (t-stat) = the significant test of BHAR

TABLE 2 HERE

Consider to Table. 2, in average the results of long-run performance of underpriced stocks are declining. Stocks which at IPO have superior performance will decline it performance for 3 years after IPO activity.

FIGURE 2 HERE

Table. 2 and Figure. 2 explain the underperform of underpriced stocks started from 2nd month to 36th month after IPO activity. It results consistent with the several previous kinds of research (Ritter, 1991; Yi, 2001; Li, McInish, and Wongchotti, 2005; Ajlouni, Albazie, 2009; Chambers, and Dimson, 2009; Choi, Lee, and Megginson, 2010; Chan and Lo, 2010; Chorruk, and Worthington, 2010). It evidences extremely important to elaborate why the performance was declining.

To capture the behavior of overreaction, this research introduce the simple regression analysis in which analyze the relation between long-term performance and trading volume of underpriced stock at first day trading in Indonesian Stock Exchange. The more trading volume of underpriced stock at first day trading implied the high demand of stocks, and the higher demand of stocks implied the behavior of overconfidence and overreaction.

$$LONG\_RUN\ PERF_i = \beta 1 + \beta 2.\ TRADE\_VOL_i + \varepsilon_i$$

LONG_RUN PERF is the monthly return of underpriced stocks 3 years after IPO. TRADE_VOL is the trading volume of underpriced stocks at first day trading.

TABLE 3 HERE

Table. 3 shows the relationship between trading volume and 3 years performance after IPO activity. Agarwal, Liu, and Rhee (2008) used trading volume as an investor demand reaction on offered stocks. In the other said, the more trading volume means the investor overreaction demand on offered stocks. The relation of trading volume on long-run performance is negatively significant, it means high investor demand on underpriced stocks exacerbates the long-run performance of its stocks. This results consistent with the other previous research (Agarwal, Liu, and Rhee, 2008). Table. 2 and Table. 3 are explain and elaborate the phenomenon of underpricing and the declining performance of underprices stocks at IPO activity. Underpricing caused by the investor overconfidence on one of the stocks, then the overconfidence will stimulate the overreaction demand on its stocks (Gao, Mao, and Zang, 2009). The negative relation between trading volume and the long-run performance of underpriced stocks imply that the investor overconfidence and then overreaction on the demand of stocks will cause the declining performance at a long time later. This results strengthened the explanation of behavioral finance in the dynamic of the capital market. In which said that the psychological aspects of investor are extremely important for getting more explanation and elaboration on the development of capital market (Olsen, 1998). Neglect of deep understanding of its aspects will bring on an incomplete picture of the capital market phenomenon. Therefore, it will affect on the bias of decision making as a whole.

DISCUSSION AND CONCLUSION

This research gives more emphasis on the behavioral theory perspective for gaining deep understanding the phenomenon of underpricing and the declining long-run performance of it stocks. The overreaction hypothesis (OH) said that underpricing at IPO activity caused by investor overreaction to their beliefs on the prospects of stock returns. It could be proven by the high demands on preferred stocks. Therefore, the overconfidence of their beliefs made them underreact to public information, it could impact on delayed correction of stocks to intrinsic value. In the other said, the price of stock needs a long time to got back into its intrinsic value. It’s the main explanation why underpriced stocks always been declining on performance at long-time later. Daniel, Hirshleifer, and Subrahmanyam (1998) given a good picture to illustrate the existing of both.

Daniel, Hirshleifer, and Subrahmanyam (1998) explain the existing of the overreaction behavior in the capital market. Investor overconfidence on the information in which categorized as a favorable signal for them, then their beliefs will have affected on overreaction to expected price of preferred stocks. In the other said, the price of preferred stocks will have raised from it intrinsic value when investor are overconfidence on a favorable signal. The expected price then will be corrected in the long-time later gradually. The late of the correction to it intrinsic value because the investor underreact to public information in which categorized as an unfavorable signal. Like we have seen on Figure. 2 that the line of expected price will move closer to rationally expected price at long-time later. This research strengthened it hypothesis by it result in which investor overconfidence on preferred stocks at the IPOs activity, and it behavior made stocks underpricing at aftermarket initial trading activity. It could be proven by more trading volume on underpriced stocks and the negative relation of it to the performance at 36th month later. This research also make evidence the investor underreact to public information in which categorized as an unfavorable signal for them. As we have seen the result of this research on Picture. I, the move of expected price of underpriced stocks will make a close movement to rationally expected price at long-time later gradually.

Study on behavioral aspects of decision maker such as investor is extremely important to capture irrational choice of the decision maker. It could gain more perspective to minimize the bias of decision making. For future research, it is extremely interesting for introducing experimental design to capture the occurring process of overconfidence and overreaction. Experimental research design will give more detail on why and how it occurred.

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APPENDIX

Table 1: The Initial Return of IPO in Indonesia

Year	IPO Activity	Initial Return
1995	17	9,40%
1996	14	13,50%
1997	21	37,60%
1998	-	-
1999	19	68,30%
2000	11	46,10%
2001	28	174,40%
2002	12	59,60%
2003	9	14,00%
2004	12	25,20%
2005	7	43,00%
2006	12	34,30%
2007	22	41,20%

Figure 1 : Conceptual Model

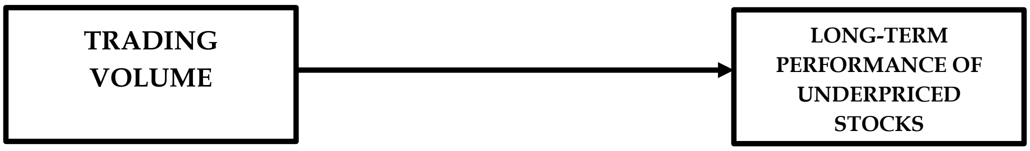

Figure 2 : Long-term Performance of Underpriced Stocks

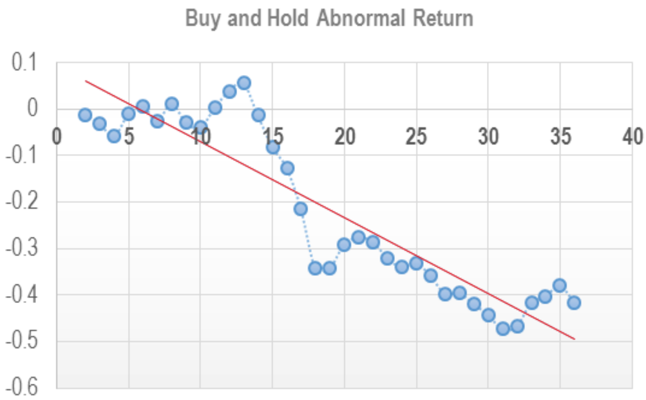

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Table 2 : The Monthly Return of Underpriced Stocks

Month	**2nd**	**3rd**	**4th**	**5th**	**6th**	**7th**	**8th**	**9th**	**10th**	**11th**	**12th**	**13th**
ABHAR	-0,012	-0,031	-0,058	-0,011	0,007	-0,026	0,012	-0,029	-0,040	0,003	0,039	0,056

Month	**14th**	**15th**	**16th**	**17th**	**18th**	**19th**	**20th**	**21st**	**22nd**	**23rd**	**24th**	**25th**
ABHAR	-0,013	-0,081	-0,126	-0,215	-0,343	-0,343	-0,291***	-0,276***	-0,285***	-0,320***	-0,340***	-0,331***

Month	**26th**	**27th**	**28th**	**29th**	**30th**	**31st**	**32nd**	**33rd**	**34th**	**35th**	**36th**	
ABHAR	-0,358***	-0,397***	-0,395***	-0,419***	-0,442***	-0,473***	-0,468***	-0,417***	-0,403***	-0,380***	-0,415***	

***** significant at 5%**

Table 3 : The regression of two variable, TRAD_VOL means trading volume on underpriced stock, and LONG_RUN PERF means long-run performance of underpriced stock in 3 years after Initial Public Offering (IPO).

	LONG_RUN PERF
TRAD_VOL	-0,010*** (-2,13)

***** significant at 5%**