The Indonesian Capital Market Review

Volume 6
Number 2 *July*

Article 5

7-30-2014

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Recommended Citation

Purwanto, Sugeng (2014) "The Possibility of Manipulated IPO Underpricing and Post-IPO Stock Return: Empirical Study on Jakarta Stock Exchange 2009-2012," *The Indonesian Capital Market Review*: Vol. 6 : No. 2 , Article 5.
DOI: 10.21002/icmr.v6i2.3593
Available at: https://scholarhub.ui.ac.id/icmr/vol6/iss2/5

INDONESIAN
CAPITAL MARKET REVIEW

The Possibility of Manipulated IPO Underpricing and Post-IPO Stock Return: Empirical Study on Jakarta Stock Exchange 2009-2012

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*Ritter and Welch (2002) explain there are two types of IPO firms, namely higher quality firms and lower quality firms. This research propose the third type, namely bad IPO firms which manipulate and force IPO underpricing. Bad IPO firms are subset of lower quality IPO firms that force false signal as higher quality firms. The false signal was hidden by managing post-IPO trading. Trading management are indirectly funded by using balance sheet cash. Hypothesis testing with the empirical model 1 was to confirm the role of CashRatio as the moderating variable that interact DER to affect IPO underpricing which originally was not. The findings support the predictions that interactive variable DER*CashRatio affect IPO underpricing. A managed trading had a non negative profits constraint so that selective post-IPO trading was conducted to cause trading imbalance observable as skewed trading volume (Skewness). Subsequent tests with the empirical model 2 was to confirm the role of Skewness as the moderating variable that interact VolRatio to affect post-IPO stock return (RGM) which originally was not. The findings support the predictions that interactive variable LnVolRatio*Skew affect RGM. Both findings confirm this research predictions on the possibility of manipulated IPO trading in Indonesia IPO 2009-2012.*

Keywords: *CashRatio, DER, Initial Return, Skewness, Underpricing, VolRatio*

Introduction

This research pursue the uniqueness of Indonesia Initial Public Offering (IPO) that can not be accurately explained by previous studies conducted in developed countries. Theories and empirical findings on IPO cover many issues such as asymmetric information (Baron, 1982), shareholders wealth maximization (Aggarwal et al, 2002), asymmetric information and signaling by high quality firms (Ritter and Welch, 2002), decision of percentage of shares to be offered (Zheng et al, 2005), high initial return but low long-run return (Georgen, 2007), and also many other empirical reports. However, this research offers modified approaches to adopt specific Indonesia context.

The discussion of Indonesia IPO is started with how the allotment rules for IPO shares are implemented.[1] The underwriters were allowed to separate issued shares into two kinds of allotments, namely fixed allotment which is a much larger proportion of around 98% of the total new shares, and pooling allotment which is only 2% of the total shares. The fixed allotment shares are usually offered to institutional investors during the book building before the offering period, and the shares of pooling allotment

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[1] See regulator's website "www.bapepam.go.id" Rule IX.A7. Point 3.

would be allocated to retail investors. Fixed allotment would be a guaranteed purchase orders through the underwriters; these are bidding commitments so that the demand for the fixed allotment will be known before the second and final filling to the regulator.

On the contrary, demand by retail investors of pooling allotment shares would only be known after the offering period; it could not be known in advance.

After the offering period, it would also be known whether the number of shares demanded exceed the number of shares allocated on the pooling allotment. At this stage, news of either over-subscribe or under-subscribe will be known by public; which was actually refer to the pooling allotment only. Fixed allotment would not be changed, an order cancellation of the fixed allotment was not an option.

On the other side, new demands by institutional investor was also possible. However, the underwriter would only fulfil the new demands by selling reserves from the fixed allotment if the underwriter had planned to do so. Fulfilment of new demands of institutional investors from the pooling allotment is not preferable because of the risks of decreasing number of public investors.[2]

There are two expected good news of IPOs : (1) Over-subscribe, and (2) IPO underpricing.[2] Logically, an over-subscribe IPO would be followed by an IPO underpricing. But it is not always the case.

It is also important to note that unlike in New York Stock Exchange or other developed stock exchanges, there is no market maker in Indonesia Stock Exchange (IDX).

As explained, pooling account is merely small portion of the IPO. This is the root of opportunity for manipulation why over–subscription along with IPO underpricing can be created as signal of successful IPOs.

If manipulated IPO trading exists, then the funding is needed. There should be role of founder shareholders to force top management of IPO firms to allow indirect utilization of balance sheet cash. Other than this, subsequent manipulation in the form of managed post-IPO trading should be done to hide the false signal of IPO underpricing. But there is a constraint of non-zero profits during the market operations which create certain trading pattern.

With regard to the above preliminary observations, this research name the IPO firms which conducted manipulated trading as bad IPO firms.

The research problem is whether the presence of bad IPO firms can be explained by factors related to balance sheet cash and post-IPO trading volume pattern.

There are two research questions: (1) What factors and whether the ratio of the balance sheet cash to the IPO proceed affect IPO underpricing in Indonesia, and (2) What factors and whether the volume trading skewness affect post-IPO stock return.

The objective of this study is to find the answer of the possible existence of bad IPO firms that manipulated IPO underpricing and managed post-IPO trading.

Basically, the newness and main contributions of this research are : 1). Modification of the IPO firms concept of Ritter and Welch (2002) and raising the concept of so called bad IPO firms, 2). Application of moderating variable related to balance sheet cash that explain IPO underpricing, 3). Application of moderating variable related to post-IPO trading volume that explain post-IPO stock return, 4). A method that bad IPO firms can be empirically observed and explained.

Literature Review

Previous reports of IPO studies consider many important things which are more applicable to the developed capital markets. Some of previous IPO studies are the explanation of percentage of shares to be offered, IPO pricing, and future stock performance. Zheng et al (2005) state that during an IPO, several important factors are considered important which include the percentage of shares offered, IPO pricing, and IPO underpricing. Other than these,

[2] Main board listing: min. 1000 investors; development board: min. 500 investors.
[3] An IPO is underpricing when the offer price is lower than the first-day closing price.

https://scholarhub.ui.ac.id/icmr/vol6/iss2/5
DOI: 10.21002/icmr.v6i2.3593

long-run trading liquidity is one of the founder shareholders objectives. Georgen (2007) reemphasize the past empirical evidences of two main anomalies on the IPO, notably high initial return but poor long-run return.

Other objective of IPO underpricing is the long-run founder shareholders wealth maximization as explained by Aggarwal et al (2002), and Ang and Brau (2003) as cited by Zheng et al (2005).

Empirical studies also provide evidences of IPO underpricing according with finance literature that provide theoretical explanation including asymmetric information as reported by Baron (1982), Rock (1986), Welch (1989), Grinblatt and Hwang (1989), Faulhaber (1989), and Balvers et al (1993). IPO firms deliberately underprice their shares to create signal of a good quality. However, to create signals the IPO firms should bear the cost of underpricing; they sell the shares lower than fair market price.

Booth and Chua (1996) explain IPO underpricing will induce investors to provide information to the IPO firms and eventually will lead to IPO over-subscribing.

Ritter and Welch (2002) explain asymmetric information on IPO that higher quality firms deliberately underprice their shares to deter lower quality firms from imitating their actions. Theoretical framework of this research is built and based on the IPO signaling theory. But modifications are developed to accommodate the Indonesia context. The main difference of arguments of this research compared with Ritter and Welch (2002) is lower quality IPO firms may be able to imitate signal by higher quality IPO firms by creating false signal of manipulated IPO underpricing and managed post-IPO trading. The false signal might not be known by investors during the period of price management and operations.

Aggarwal and Wu (2006) explain variety ways of stock price manipulation that can also be taken by corporate insiders. It is explained how insiders may manage stock price and trading volume with the objective of creating trading profits.

Chen et al (2001) report the relation of stock market return, trading volume, and volatility in nine major stock markets and found that trading volume provides information to the stock index.

The arguments of Ritter and Welch (2002) on IPO underpricing as signaling imply: (1) IPO firms hold superior information relative to the investors regarding the future prospects of the firms, (2) There exist lower quality of IPO firms try mimicking the signal of higher quality IPO firms by IPO underpricing but could not to do so because IPO underpricing is costly.

This research build arguments for signaling concept of IPO underpricing as follow:

1. Higher quality IPO firms send true signal and the investors believe it. This is a real IPO underpricing.
2. Higher quality IPO firms send true signal. But investors do not believe it. IPO underpricing may not exist.
3. Lower quality IPO firms which can not send signal be honest, there is no IPO underpricing.
4. Some lower quality IPO firms send false signal and force IPO underpricing. These types of firms are named bad IPO firms.

Bad IPO firms were able manipulating IPO underpricing by utilizing balance sheet cash indirectly. They manipulate the trading by utilizing founder shareholders shares which is much larger than the pooling allotment shares that only 2% of the total IPO shares. Founder shareholders had to manage and negotiate with investors that hold significant fixed allotment shares not to sell their shares in order to avoid stock price down. In Indonesia case, it is possible if IPO float is not large and the respective investors are within the group of founder shareholders. IPO trading manipulation should be continued until post-IPO to hide the false signal. Funding requirements were facing a non negative profits constraint so that selective post-IPO trading activities had to be employed. This constraint may create trading imbalance observable as skewed post-IPO trading volume. If the investors do not know the signal was actually false, then the trading support by bad IPO firms would be minimal.

The presence of bad IPO firms is confirmed when these two conditions are met, namely

manipulated IPO underpricing and managed post-IPO trading. Lower quality IPO firms are defined as firms with high debt-to-equity ratio (DER) and/ or negative operating cash flow. A bad IPO firms are defined as a subset of lower quality firms with these following additional arguments:

High DER alone may not cause IPO underpricing. But DER moderated by CashRatio will positively affect IPO underpricing. The operational variable is the interactive variable DER*CashRatio to affect IPO underpricing. It is the necessary condition.

VolRatio which is measured as the ratio between first-day trading volume and the mean of post-IPO trading volume may not affect stock return. But VolRatio moderated by post-IPO volume trading skewness may have significant effect to post-IPO stock return. Interactive variable of Volratio*Skew to negatively affect post-IPO stock return. It is the sufficient condition.

Research Methods

Hypotheses of IPO underpricing

IPO underpricing is measured as Initial Return. The main focus of the model 1 is the variable of CashRatio which moderate DER to affect Initial Return. DER should not affect Initial Return; as well as CashRatio should not. But DER moderated by CashRatio should affect Initial Return in order to confirm a manipulated IPO underpricing to exist. Interaction variable of DER and CashRatio, namely DER*CashRatio is predicted to positively affect Initial Return. Mendez (2011) found the higher the floating the lower the underpricing. The higher the IPO underpricing the higher the price-to-earning-ratio (PER) of the IPO firms *ceteris paribus*, so that difference of IPO firms PER and sub-sector PER should positively influence the degree of IPO underpricing. Return on equity (ROE) measures the management performance with respect to the founder shareholders equity; the higher the ROE the better the performance and the higher the firm quality. DER should positively affect initial return.

Habib and Ljungqvist (2001) using Logarithmic age as proxy of ex-ante uncertainty that affect IPO underpricing. Loughran and Ritter (2004) using calendar year of IPO minus calendar year of incorporation as measurement of variable that also affect IPO underpricing. Derrien and Womack (2003) show the effect of market conditions to IPO underpricing.

The alternate hypotheses statements:

$H_{1.1.}$: Debt-to-equity ratio moderated by CashRatio affect Initial Return.
$H_{1.2.}$: Volume of floating affect Initial Return.
$H_{1.3.}$: Difference of price-to-earning-ratio affect Initial Return.
$H_{1.4.}$: Difference return-to-equity affect Initial Return.
$H_{1.5.}$: Sales affect Initial Return.
$H_{1.6.}$: Age of IPO firm affect Initial Return.
$H_{1.7.}$: Listing board affect Initial Return.
$H_{1.8.}$: Five-day market return affect Initial Return.

Hypotheses of post-IPO stock return

Higher quality IPO firms let the liquidity (volume), price, and stock return determined by the market post-IPO trading. On the opposite, bad IPO firms have to continue managing and supporting the post-IPO trading for certain trading period with the objective to continue imitating and confirming signal as higher quality firms. A manipulated but smooth trading may be too costly if not followed by many investors participating in the trading. With non negative profits as the constraint, there will be less liquid post-IPO trading volume relative to the first-day IPO trading. Hence, skewed trading volume may exists. The prediction is that post-IPO stock return is affected by volume ratio which is moderated by volume trading skewness.

Ibbotson (1975) reported negative effect of initial return to long-term performance. However, in the presence of bad IPO firms initial return is the basis of the return management. This research predict initial return positively affect post-IPO return.

Volume of float should negatively affect post-IPO return to guarantee non negative profits because the trading would be more manage-

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DOI: 10.21002/icmr.v6i2.3593

Table 1. Variable definition of model 1

Variable	Explanation	Measurement
IR	First-day of trading return	$[P_1-P_o]/P_o$. P_1: first-day closing price, P_o: offer price
Vfloat	First-day trading liquidity	Ln(first-day trading volume/ IPO floating percentage)
DER*CashRatio	Interactive Variable CashRatio: moderating variable	Debt-to-equity ratio multiplied with CashRatio CashRatio = Pre-IPO cash/ IPO proceed
DPER	Difference of PER	(Firm PER–Subsector PER mean)/Subsector PER mean
DROE	Difference of ROE	IPO book ROE – Previous year ROE
LnSales	Sales	Ln(total sales)
LnMo	Age	Ln(months of Age from incorporation to the date of IPO)
Dboard	Dummy variable for listing	"1" : if the main board, " 0" : if the development board
RM5	Last-week market return	Five-trading-day geometric return up to IPO date

Table 2. Variable definition of model 2

Variable	Explanation	Measurement
RGM	Post-IPO stock return	Geometric mean return of 97-trading-day
IR	Initial Return	[P1-Po]/Po. P1: first-day closing price, Po : offer price
LnVolratio*Skew	Interactive variable Skewness: moderating variable	Ln(VolRatio*Skewness] VolRatio = first-day trading volume/the mean of 97-trading-day trading volume
RMGM	Market Return	97-trading-day geometric mean return of IDX

able to bad IPO firms if the number of stocks issued were smaller.

Pre-IPO balance sheet cash in the form CashRatio had been predicted to affect initial return in model 1. Post-IPO balance sheet cash will also be tested in model 2 whether it affect post-IPO stock return.

Schultz and Zaman (1994) show aftermarket support of an IPO is necessary to avoid stock price decline. Robinson et al (2004) explain the role of underwriters that the greater the stock retention the lower the probability of required after market price support.

The alternate hypotheses statements:

$H_{2.1.}$: VolRatio moderated by skewness affect post-IPO stock return.

$H_{2.2.}$: IPO initial return affect post-IPO stock return.

$H_{2.3.}$: Volume of IPO floating affect post-IPO stock return.

$H_{2.4.}$: Post-IPO cash affect post-IPO stock return.

$H_{2.5.}$: Market return affect post-IPO stock return.

Empirical models

There are two empirical models adopted. Model 1 will be used to test factors that cause IPO underpricing, and model 2 will be used to test factors that cause post-IPO stock return.

Model 1. IPO underpricing

$$IR\,i = \alpha + \beta_1\, DER*CashRatio_i + \beta_2\, Vfloat_i + \beta_3\, DPER_i + \beta_4\, DROE_i + \beta_5\, LnSales_i + \beta_6\, LnMo_i + \beta_7\, Dboard_i + \beta_8\, RM5_i + \varepsilon_i \quad 1)$$

Model 2. Post-IPO stock return

$$RGM\,i = \gamma + \delta_1\, VolRatio*Skew_i + \delta_2\, IR_i + \delta_3\, Vfloat_i + \delta_4\, LnCashPostIPO_i + \delta_5\, RMGM_i + \upsilon_i \quad 2)$$

Result and Discussion

Descriptive statistics, estimation output model 1, and estimation output model 2 are presented in Table 3, Table 4, and Table 5 respectively.

The sample is post financial crisis IPOs listed in IDX of four years 2009-2012. When the financial turmoil facing the US in 2008, many Indonesia IPOs were postponed due to low demand for new issues and low valuation. There were only eight Indonesia firms floating their shares during the difficult year. Financial market began to recover in 2009 so the firms start building confidence toward stock market. The sample is 82 IPO firms consist of 13 IPOs (2009), 23 IPOs (2010), 25 IPOs (2011) and 22 IPOs (2012). There are 46 IPOs listed in the

Table 3. Descriptive statistics of raw data

	Obs	Mean	Median	Max.	Min.	Std. Dev.
IPO firms total assets (trillion)	82	3.82	1.15	48.7	0.22	7.62
IPO firms total sales (trillion)	82	1.14	0.36	12.7	0.03	2.11
IPO firms RoE (%)	82	0.705	0.105	45.28	-0.809	4.991
Pre-IPO cash (billion)	82	443	47.4	8,120	0.481	1.32
IPO floating percentage	82	24.415%	22.10%	3.39%	9.742%	11.303%
IPO proceed IDR (billion)	82	774	298	6.29	30.1	1180
CashRatio	82	0.589	0.185	6.235	0.006	1.193
Firm closing PER at-IPO	82	81.69	24.14	2,486.29	-119.50	286.2
Subsector closing PER at-IPO	82	15.53	14.53	38.29	1.27	7.98
Shares traded at-IPO (million)	82	251	95.206	1,660	0.18	379
At-IPO Trading Volume (million)	82	251	95.2	1,660	0.18	379
Post IPO average daily transaction (million)	82	19.91	5.01	187,000	17.032	28.9
VolRatio	82	42.072	21.101	201.673	0.201	50.566

main board and 36 IPOs in the development board. The fundamental data were found from the IPO prospectus. Transaction data were collected from on-line trading provider.

The first IPO listing date was in 15 January 2009 and the last date was in 19 December 2012. There are 70 IPOs underpricing, 11 IPOs overpricing, and one IPO neither underpricing nor overpricing (Table 3).

A window of 97-trading day is chosen so that the last trading day was in 14 May 2013 of the last IPO in 19 December 2012 IPO.[4]

Diagnostic tests.[5]

Test of multicollinearity for model 1 is conducted by using Variance Inflation Factor defined as VIF = $1/(1-\rho^2)$ with a critical value of 10. There is no multicollinearity in the model 1.

Test of heteroscedasticity for model 1 is conducted by using Glejser heteroscedasticity test with a critical value of $|+/- 1.96|$ at α=5%. There is no heteroscedasticity in the model 1.

There is also no multicollinearity on the model 2. Glejser heteroscedasticity test for model 2 provide the highest *t-value* of 2.72. However, there is no opportunity to take natural logarithm on it because *IR value* could be negative. Other than this, standardization by taking the square root of negative numbers is not defined.[6]

Squared R and F-tests.

On the model 1, The *R squared* is 32.9% so that the variations of the dependent variable are only 32.9% explained by the variations of the independent variables. However, *F-test* of 4.49 is larger than the critical value of *F-table* of ~ 2.10 at α=5% (with degree of freedom of 8 for numerator and 72 for denominator) so that the null hypothesis of altogether $\beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = \beta_6 = \beta_7 = \beta_8 = 0$ should be rejected at α=5%. Model 1 is said to be valid.

On the model 2, the *R squared* is 22.5% so that the variations of the dependent variable are only 22.5% explained the variations of the independent variables; while the other 77.5% are explained by the other factors do not included in the model. However the *F-test* with a null hypothesis of altogether $\delta_1 = \delta_2 = \delta_3 = \delta_4 = \delta_5 = 0$, with the degree-of-freedom of 5 for numerator and 76 for denominator at α=5% give a critical value ~ 2.37. The calculated *F* of 4.43 is larger than the critical value so that the null hypothesis should be rejected. The model 2 is also valid.

Analysis of IPO underpricing

Estimation of model 1 provide evidences IPO underpricing are explained by five explanatory variables. But the other three variables do

[4] 97-trading-day is arbitrary chosen that is sufficient to observe trading manipulations but not too long so that the observed pattern of post-IPO trading may be faded in the longer-term stock price movements.
[5] There is no issue of serial correlation for cross-sectional data. Error is assumed normally distributed because sample is large enough.
[6] Gujarati and Porter (2009), Basic Econometric, 5th edition, McGraw-Hill International Edition: 340, 378-380, 400.

https://scholarhub.ui.ac.id/icmr/vol6/iss2/5
DOI: 10.21002/icmr.v6i2.3593

Table 4. Model 1 estimation output: Test for IPO underpricing

Dependent Variable: IR Observations : 82

Independent Variable	Coefficient	Hypothesis	t-statistic	Prob
DER*CashRatio	0.01	$H_{1.1}$	2.39*	0.02*
Vfloat	-0.04	$H_{1.2}$	-2.81**	0.01**
DPER	0.00	$H_{1.3}$	2.40*	0.02*
DROE	0.07	$H_{1.4}$	1.32	0.19
LnSales	-0.03	$H_{1.5}$	-2.34*	0.03*
LnMo	-0.01	$H_{1.6}$	-0.23	0.81
Dboard	0.11	$H_{1.7}$	2.05*	0.04*
RM5	-0.16	$H_{1.8}$	-0.15	0.87
Constant	1.51	-	4.25	0.00
R-squared	0.33		** Significant at α 1%	
Adjusted R-squared	0.26		* Significant at α=5%	
F-statistic	4.49	Prob (F-statistic)	0.00	

not explain. The hypothesis testing is conducted with null-hypothesis of $\beta_i = 0$ at α=5% provide a critical value of +/-1.96. The calculated t-statistics can be seen in the Table 4.

(a). *DER*CashRatio.* With regard to model 1, this research focus on the possible presence of bad IPO firms by investigating the role of CashRatio as the moderating variable. The estimated coefficient for *DER*CashRatio* is significantly different from zero at α=5%. The conclusion is *DER*CashRatio* positively explain Initial Return as expected. Other regression had been conducted that DER and CashRatio as two separate independent variables each does not explain Initial Return IR.

It is concluded that CashRatio has significant contribution to the causality of DER to Initial Return. *DER*CashRatio* is the interaction variable that affect IR. Test results of model 1 confirm CashRatio as the moderating variable.

The higher the *DER*CashRatio* the higher the IR (underpricing) the more favorable the IPO firms to the investors.

In relation with manipulated IPO underpricing, lower quality IPO firms with high DER without high CashRatio would not be able to force IPO underpricing and could not imitate signal as explained by Ritter and Welch (2002). But bad IPO firms were be able to do so by utilizing the capacity of cash which is sufficiently available in the balance sheet. The higher the *DER*CashRatio* which is in the same direction with the higher the ratio of balance sheet cash to the IPO proceed, the more power and confidence of bad IPO firms to finance the trading against shares from the pooling allotment.[7]

(b). *Vfloat.* The t-test for *Vfloat* is |-2.81| higher than critical value of |-1.96|; the null-hypothesis is rejected at α=5%. The conclusion is *Vfloat* negatively affect initial return; the higher *Vfloat* the lower initial return. Recall that the measurement of *Vfloat* is the natural logarithm of the ratio of the first-day trading volume to the pecentage of IPO floating. The expectation according to the theory is the higher the percentage of IPO float (denominator of the *Vfloat* measurement) the lower the IPO underpricing. However, the result is the opposite. The possible explanation is in the case of bad IPO firms an IPO underpricing is a manipulation. The offer price was not underpriced and the first-day closing price was pushed upward; these activities were to create trading profits. In this case the higher the IPO float the higher the IPO underpricing in order to maximize manipulated trading profits.[8] The results also imply the higher the first-day trading volume (numerator of *Vfloat* measurement) the lower the IPO underpricing. In the case of bad IPO firms, any involvement of fixed allotments investors outside the bad IPO firms group would affect manipulation activities. If the trading participation of these outside in-

[7] It is also assumed that bad IPO firms had communicated with investors of fixed allotment shares with large ownership so that they would not destroy the plan.

[8] Even if floating percentage is large, the total value of issued shares may be low in the case of bad IPO firms so that manipulation management was still possible.

Table 5. Model 2 estimation output: Test of post-IPO stock return

Dependent Variable: RGM Observations : 82

Independent Variable	Coefficient	Hypothesis	t-statistic	Prob
LnVolRatio*Skew	$-4.20.10^{-4}$	$H_{2.1}$	-2.51*	0.01*
IR	$3.14.10^{-4}$	$H_{2.2}$	2.48*	0.02*
Vfloat	$-6.18.10^{-5}$	$H_{2.3}$	-0.29	0.77
LnCashPostIPO	$-6.47.10^{-5}$	$H_{2.4}$	-0.26	0.79
RMGM	0.31879	$H_{2.5}$	1.39	0.17
Constant	0.01	-	0.91	0.37
R-squared	0.23		** Significant at α 1%	
Adjusted R-squared	0.17		* Significant at α=5%	
F-statistic	4.43	Prob (F-statistic)	0.00	

vestors along with pooling allotment investors were low, then the trading profits would be low because outsider participation volume were low. However, it was easier to push the price up to maximize trading profits. If the participation were high which is observable as high first-day trading volume, then the IPO underpricing would be low because it was more difficult to push the price up. However, trading profits of bad IPO firms group might be high because outsider participation volume were high. These are the explanations why Vfloat negatively affect initial return.

(c). *DPER*. Initial Return is positively affected by *DPER* at α=5%. Stock Price is determined by the earnings multiple PER and IPO firms earnings. If bad IPO firms exist, then logically they prefer managing a high PER rather than a high earnings. Earnings management is possible. However, it is risky; earnings figure will be recorded as operating performance of bad IPO firms. On the other hand, a high PER is more subjective and determined by the market so that an upward bias is considered as market valuation.

(d). *LnSales*. The finding shows that *LnSales* negatively affect initial return. IPO underpricing is a signal (Ritter and Welch, 2002). Arguably, sales is also a signal of quality. The higher the sales the better the firms image. The higher the sales the lesser the degree of IPO underpricing required as signal as good firms; *ceteris paribus*. The negative causality of *LnSales* to IPO initital return (underpricing) is as expected.

(e). *Dboard*. The findings show that DBoard positively affect IPO underpricing. Even if there is no specific differences in treatments of trading in the two listing boards in IDX namely main board and development board, the listing in the main board is still considered more bona fide. Actually, to be listed in the main board in IDX is not a challenging task. Three main criteria are the year of incorporation, subsequent positive earnings, and the number of public investors more than one thousand. When considering IPO underpricing as a signal of a good firm quality, a listing in the main board should be preferable. Bad IPO firms prefer pursuing a main board listing to strengthen their false signal. Hence, the positive effect of *Dboard* to Initial Return is as expected.

(f). *DROE*, *LnMo*, and *RM5*. Three independent variables namely : *DROE*, *LnMo*, and *RM5* each do not affect initial return.

Analysis of post-IPO stock return

Hypothesis testing is conducted with significance level α=5% so that the critical value is +/- 1.96 to decide whether each independent variable to affect post-IPO stock return. The estimated t-statistic can be seen in Table 5.

(a). *LnVolRatio*Skew*. The t-test show estimated t-value of |-2.509| is larger than critical value of |-1.96|; the null-hypothesis is rejected at α=5%. The conclusion is that LnVolRatio*Skew negatively affect RGM as expected.

Prior to the estimation of this regression, another estimation was conducted with stock return as dependent variable against independent variables of *VolRatio*, *Skewness*, *Vfloat*, *IR*, *LnCashPostIPO*, and *RMGM*. Two separate independent variables *VolRatio* and skewness each does not affect stock return. The causal-

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DOI: 10.21002/icmr.v6i2.3593

ity of *VolRatio* to stock return is significantly changed when Skewness is included in the form of interactive variable *VolRatio*Skew*. This finding support the prediction of this research. Skewness has significant contingent effect on the causality of *VolRatio* to post-IPO stock return; the role of a moderating variable. When bad IPO firms manage post-IPO trading, they were facing a non negative constraint so that selective trading had to be adopted which cause skewed trading volume as predicted.

(b). *IR*. The results show a t-value of 2.48 so that the null hypothesis of $\delta_2 = 0$ is rejected at at α=5%. Initial *Return IR* positively affect post-IPO stock return; IPO firms which exhibits positive *IR* will continue delivering positive post-IPO return on the medium-term. In the case of bad IPO firms, the trading management will pursue positive post-IPO return to strengthen the false signal of IPO underpricing as long as non negative constraint is met.

(c). *Vfloat*. The result shows *Vfloat* do not affect post-IPO stock return. The indirect effect of Vfloat to medium-term stock return, if any, has already been captured by Initial *Return IR* on the test of model 1.

(d). *LnCashPostIPO* and *RMGM*. The result shows that *LnCashPostIPO* does not affect post-IPO stock return as expected. Stock valuation already consider post-IPO cash, there should be no surprise on this variable. The test on *RMGM* also shows no causality effect of *RMGM* as the control variable to post-IPO stock return.

Combined results of both models

The hypotheses testing of model 1 confirm IPO underpricing is positively affected by DER*CashRatio with CashRatio as the moderating variable.

The hypotheses testing of model 2 confirm post-IPO stock return is negatively affected by *LnVolRatio*Skew*, with Skewness as the moderating variable.

Explanation of *DER*CashRatio* to initial return is the first or necessary condition to the presence of bad IPO firms which employing the power of *CashRatio* to manipulate IPO underpricing. Further, the explanation of *LnVolRatio*Skew* to post-IPO stock return is the second or sufficient condition for the presence of bad IPO firms with skewed post-IPO trading volume to affect stock return.

Conclusion

The position of this research is to propose the concept of the presence of bad IPO firms. The first main finding is bad IPO firms could force IPO underpricing by utilizing the ratio of balance sheet cash to the IPO proceed. The second main finding is non negative managed trading constraint would create skewed post-IPO trading volume which affect post-IPO stock return. The first research questions can be answered that five factors, namely *DER*CashRatio*, *Vfloat*, *DPER*, *LnSales*, and *Dboard* affect IPO underpricing. Particularly, *CashRatio* has significant contribution that interact to debt-to-equity ratio to affect IPO underpricing. The second research question is also can be answered. Two factors, namely *LnVolRatio*Skew*, and *IR* affect medium-term IPO stock return. Particularly, Skewness has significant contribution that interact the ratio of first-day IPO trading volume to the mean of post-IPO trading volume to affect post-IPO stock return. With these two main findings, it can be confirmed the possible existence of bad IPO firms that manipulated IPO underpricing and managed post-IPO trading.

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