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Short Term and Long Term Effect of IPO Firm to Competitor Performance

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Abstract

IPO is an important corporate action that has far-reaching effects from the IPO firms to their competitors. However, there are few empirical studies on how IPO firms affect their rival stock performances in emerging markets. This is the first study that provides empirical studies on the short term and long term effect of IPO firms to their competitor performance in Indonesia. We perform short term and long term event studies and cross section regression with IPO firm competitor stock performance as the dependent variable, IPO firm stock performance as independent variable, and related IPO firm competitor variables as control variables. We cover IPO firm from 2010 to 2017. The sample taken is 152 IPO firms and 8.085 competitors and 38 IPO firms after controlling for contamination effect and 1.715 IPO firm competitors. Our event study finds that both IPO and their competitor stock have positive stock performance in both short and long term. IPO stock performance in the long term is relatively stagnant that enables the IPO firm competitor stock performance to catch up to IPO stock performance. Our regression results only find that IPO stock performance has short term negative effect and positive long term effect toward IPO firm competitors stock performance, both results were drawn after controlling the contamination effect. Our findings imply that the IPO firm provides additional good information to the industry-wide information and no discernible competitive landscape changes are detected.

Keywords: competitive effects, competitor performance, event study, initial public offering, information effects
JEL Classification: D02, G12, G14

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Introduction

An Initial Public Offering (IPO) is an important corporate action that may the change investor's perception toward firm competitive landscape (Akhigbe, Borde, & Whyte, 2003). Investor perception toward IPO firm competitor may become more positive because IPO firm will put considerable effort to provide good news information on top of old information regarding industry good business prospect. Higher media coverage for IPO firms also has a beneficial effect on IPO firm competitors through higher investor attention. Higher investor perception is known as the information hypothesis. The information hypothesis tends to have a short term positive effect on IPO firm competitor stock performance.

However, IPO firm strategies to increase their competitive advantage may reduce the competitors' competitiveness. There are several ways in which the IPO firms may increase their competitive advantage from rejuvenating and adding new strategic assets, debt repayment, growing marketing and sales promotion, and better working capital management (Ben Amor & Kooli, 2017). The IPO related competitive advantage itself has a two-time dimension. First, the perception of higher competitive advantage will have a short term negative effect. Second, the realization of a higher competitive advantage will have a long term negative effect (Spiegel & Tookes, 2016). The competitive effect has a negative effect on IPO firm competitor stock performance.

IPO may force the investors to reduce their portfolio holding in order to invest in IPO stock (Braun & Larrain, 2008). In doing so, investors may have portfolios that resemble more the market portfolio and reduce their portfolio tracking errors relative to the market portfolio. Investors may also reduce their existing stock in order to take advantage of IPO underpricing (Shi, Sun, & Zhang, 2018). Investors' actions to reduce their existing stock holding and invest in IPO stock have negative short term effect which is consistent with the downward sloping demand curve hypothesis.

Empirical research on the effect of IPO firm to IPO firm competitor performance mostly being performed in the US market (Akhigbe et al., 2003; Chod & Lyandres, 2011; Hsu, Reed, & Rocholl, 2010; Spiegel & Tookes, 2016) and in China market (Li,

Sun, & Tian, 2018). Our study tests information effects and competitive effects hypothesis as tested by Akhigbe et al. (2003) in the same context as Li et al. (2018) research object in a high-growing economy. Higher economic growth may mute the negative effect of higher competition among firms, both IPO firms and their competitors. Research to simultaneously test the information effect hypothesis and competitive effect hypothesis in another high growing economy is needed. This study is the first to examine short term and long term effect of IPO firm stock performance relative to IPO firm competitor stock performance in Indonesia. This study's research question is 'do IPO firm stock performances have short term and long term effect toward IPO firm competitor stock performance.'

In this study, we performed a two-stage analysis. First, we performed event study to examine short term effect, t-30 to t+30, t+0 to t+30, t+1 days to t+30 days, with t+0 days as IPO date, and long term effect, t+31 days to t+200 days of IPO firm stock performance and their competitor stock performance. Second, event study results, i.e. cumulative abnormal return (CAR), on IPO firm competitor performance, both short term and long term, are set as the dependent variable, while IPO firm performance is set as the independent variable. We use IPO firm's financial characteristics, i.e. total assets and leverage ratio, current IPO firm competitor valuation, i.e. market to book ratio, and historical IPO underpricing within the same industry for the last two years, i.e. median of historical IPO underpricing, as control variables. We perform two regression analyses based on IPO size. First, 8.085 firms impacted by 152 IPO firms, i.e. all IPO firms excluding financial and miscellaneous sector, and second, 1.715 firms impacted by 38 IPO firm, i.e. we exclude the firms that have larger IPOs in the same industry within one year before and after the event. The exclusion objective is to minimize contamination effect from the earlier IPO stock.

In the short term, investor reacts positively to both IPO firms and their competitors which imply positive effect of additional information from IPO firm to industry-wide information. In the long term, IPO firm stock performance has small positive growth that enables the IPO firm competitor stock performance catch up to IPO

firm stock performance. Our regression analysis using 152 IPO firms shows no statistically significant effect toward IPO stock competitors both in the short and long term. However, regression analysis after controlling for contamination effect using 38 IPO firms finds a statistically significant negative short term effect, i.e. t+1 to t+30 days, and statistically significant positive long term effect on competitor stock performance, i.e. t+31 to t+200 days.

Our significant short term negative results support information hypothesis and positive long term results do not support competitive effect hypothesis from Akhigbe et al. (2003) and Li et al. (2018). These findings imply in the short term IPO stock that provides positive new information to industry-wide information and in the long term, the IPO firm fails to materialize their expected competitive advantage or no discernible competitive landscape changes are detected.

In section 2, the literature review discusses (1) theories about the strategic group dynamics and their effect on the firm systematic risk, (2) how IPO firms may change their competitive advantage and competitor systematic risk, and (3) our hypothesis is developed using discussed theories. In section 3, we provide information regarding our methodology, i.e. data selection and method to test the hypothesis. In section 4, we provide our findings and discussion. Finally, in section 5 we conclude and discuss implications for future research.

2. Literature Review and Hypothesis Development

2.1. Literature Review

The strategic group comprises of firms that have relatively similar key strategic competitive advantage variable or when they are serving relatively in the same market (Porter, 1979). Measure of key strategic competitive advantage are (1) standard industrial classification (SIC) code with level of specificity 3 or 4 digit and (2) cluster analysis based on firm characteristics such as firm products, firm financial condition, and customer served, etc. (Zúñiga, de la Fuente, & Suárez, 2004). The former focuses on the similarity of products while the latter focuses on a unique combination of several key strategic competitive variable that able to fulfill customer needs.

Firms' with closer proximity to the same key strategic competition advantage variable belongs to the same strategic group (Ferguson, Deephouse, & Ferguson, 2012).

There are three theories about the strategic group. First, the industrial organization theory discusses the strategic group from macro-level perspectives. The industrial organization emphasizeson the Structure Conduct Performance (SCP) paradigm. Each strategic group has a unique combination of key strategic competitive variables that create a unique firm structure. It may explain different firm performance in different strategic groups (Martínez & Toral, 2010). The unique combination of key strategic competitive variables act as an entry and exit barrier for the firm within the strategic group.

Second, strategic management theory that explains the strategic group from meso level perspectives. Strategic management theory emphasizes the similarity of firm strategic intent rather than key strategic competitive variables (Porter, 1979). Similar products or services can be offered using a different combination of key strategic competitive variables. For instance, infrastructure and standard operating procedures for mobile payment services provided by banks, fintech, and techfin are different but perform the same function, speed, and security. Firms strategic intent mostly would be mimicking and, if possible, an improvement in winning characteristics of products offered by leaders (De Lillo, Dolfin, & Fioriti, 2018). A firm with market leadership acts as a significant driver for competitor mimicking activity.

Third, cognitive or behavioural bias theory that explains the strategic group from micro-level perspectives. Cognitive or behavioural bias theory emphasizes on the similarity of manager competence. It defines expected competition among firms (Peteraf & Shanley, 1997). Managers tend to compete based on their competence rather than what is needed by the customer.

All three theories above suggest a strategic group relatively stable when there is no external shock. From a macro-level perspective, the relatively same firm structure, as predicted by SCP, makes it difficult for the firm to overcome other firms. From a meso level perspective, relatively same strategic intent and mimicking the

leader manifest in firms cannot maintain their competitive advantage for long. From a micro-level perspective, relatively the same manager limitation also makes it difficult to overcome each other. The stability came in the form of firm influence within a strategic group relatively stable or firm market share within a strategic group is relatively stable. The stability also came in the form of strategic group boundaries rarely change, i.e. two or more strategic group merges or one strategic group separates into two or more strategic groups.

Comparison between three competing theories on strategic group is summarized in table 1 below.

Table 1
Comparison of Strategic Group Theory

Description	Industrial Organization	Strategic Management	Cognitive/Behavioural Bias
Level of Analysis	Macro Level	Meso Level	Micro Level
Key strategic competitive variable	Structure conduct performance	Leader strategic intent	Manager competencies
Key differences	Entry and exit barrier	Mimicking leader capabilities	Manager limitations
Key similarity	Firm influence stability within strategic group Strategic group boundary stability		

Source: Martínez and Toral (2010), Porter (1979), and Peteraf & Shanley (1997).

External shock can change the dynamics within and inter strategic group. Porter (1979) suggests 4 forces that are able to change the dynamic within and inter strategic group. First, the new entrants bring new perspectives and capabilities to serve the buyers. For example, Gojek as a ride-hailing company, entered the transportation industry, i.e. taxi and logistics industry. In doing so, boundaries between the taxi and logistic strategic groups are merging. Second, suppliers may enable firms to compete more

effectively within the strategic group. For instance, firms seek additional financing, i.e. IPO, debt financing, etc., to rejuvenate and increase their competitive advantage relative to their competitor within the same strategic group. Third, buyers that change their preferences will force firms to alter their capabilities to serve the new buyer preferences. For example, WeWork provides a flexible solution for agile start-up companies that grow rapidly but do not want to be burdened by managing working space, from space required to services and the infrastructure needed. Fourth, a substitute may provide superior product offers that lure the buyers away from the firm. For example, thepiratebay.org, i.e. it is illegal, enables the buyers to download file, i.e. books, music, computer program, etc., for free or very cheap. Existence of substitute change Bangtan Boys (BTS), a Korean Boy Band, business model from music royalties as the main source of revenue to fans loyalties as the main source of revenue. BTS music and videos are vastly downloaded for free. However, BTS fans, called ARMY, strive to buy original music and videos and attend the BTS concert when they have money. So the fans mostly have two versions of music, i.e. illegal and legal. Although illegal may not be the correct word since BTS management does not call it illegal.

2.2. Hypothesis Development

Level of competition among the firms determines mostly that whether or not they belong to the same strategic group. Competition within the strategic group is higher than inter strategic group because firms serve relatively same customers and using relatively same strategies, business models, and business structures. Competition among the firms reaches an equilibrium when their market share in their strategic group is relatively stable. Market share stability occurs whether they are induced by output as explained by Cournot or price competition as explained by Bertrand (Puu & Tramontana, 2019).

Firms' competitive position within a strategic group will remain in equilibrium until an important and significant event happens. In Initial Public Offering (IPO) literature, IPO is one of the significant firm events that may change the firm’s competitive position that has a far-reaching effect to their competitor competitiveness within the

strategic group (Akhigbe et al., 2003). Capital supplier provides a means to enable the firm to grow faster than its historical growth path. Capital supplier provides fund through IPO mechanism for firms to (1) restructure their capital structure, (2) invest to rejuvenate or increase firm strategic assets, (3) grow marketing and advertising capabilities, (4) increase their working capital, (5) streamlines business process.

IPO fund enables the firm to pay its debt to banks or bondholders. After the firm pays its debt, the firm's short term cash flow pressure, i.e. to pay principal and interest, subsides. Hence the firm may shift their focus from short term debt payment to entrepreneurial activities. Entrepreneurial activities can be categorized into value creation and value appropriation (Wang, Dass, Arnett, & Yu, 2019). Value creation activities are a firm investment to rejuvenate or increase firm strategic assets, create an innovative product, etc. Value appropriation activities focusing to capture the value created by the firm through marketing and advertising activities. As the firm's sales increases, higher working capital is required to provide larger account receivable for their customer, higher inventory level to provide uninterrupted product for the customer, both inbound and outbound logistics, and pay the supplier on time to maintain a good business relationship. The perception of the negative effect of changing the competitive landscape within a strategic group, triggered by IPO, will increase investor risk aversion and reduce demand for IPO firm competitor stock. This hypothesis is called the competitive effect hypothesis (Hsu et al., 2010).

Since the IPO firm and its underwriter put considerable effort to provide additional positive new information to induce an investor to buy the IPO stock. This hypothesis is known as information effect hypothesis (Akhigbe et al., 2003). Additional positive new information has a positive impact on updating the investor's information set on both IPO stock and their competitor stocks.

Based on the competitive effect hypothesis and information effect hypothesis, the hypothesis offered is:

H1: IPO stock short term performance has effect on IPO firm competitor stock short term performance.

As mentioned earlier, a firm may use funds obtained for IPO to increase their competitive advantage. IPO fund may be used to pursue several strategic initiatives simultaneously. Some firms will succeed and some firms may fail. The most obvious reason for firm failure in pursuing their strategic initiatives will be that the firm's strategic initiatives are larger than firm's resources available. The less obvious but maybe the real reason of firm failure is firm inabilities or failure to manage their collection of strategic initiatives (Kunisch, Keil, Boppel, & Lechner, 2019). The firm treats each strategic initiative as an independent project. The firm does not see their collection of strategic initiatives as a portfolio of strategic initiatives. When firms do not manage strategic initiatives as a portfolio, confusion and conflict will arise within the firm. Confusion and conflict consumed a lot of IPO funds available without discernible effects. Based on IPO firm success or failure to realize their competitive advantage, the hypothesis offered is:

H2: IPO stock long term performance have effect to IPO firm competitor stock long term performance.

IPO firm short term and long term effects on their competitor are influenced by competitor asset size, competitor age, competitor leverage, and industry valuation cycle. This variable will be treated as control variables. Market share is proportional to firm asset size. Higher market share will result in higher firm asset size. IPO firms will exert their effort to obtain additional market share from firms with higher market share. Hence, we expect that the IPO firm will have a more negative effect on firms with higher asset size (Hsu et al., 2010). Competitor age represents firm experience and ability to deal with a different kind of competition. Hence, we expect that IPO firms will have a negative effect on the younger competitors. Firm leverage level determines the ability to add additional investment to thwart threats from other firms. When firm leverage is higher, firm ability to obtain additional funding will be limited. Hence, we expect firms with higher leverage levels will more negatively be impacted by IPO.

Stock performances are influenced by the internal factor, i.e. firm fundamentals, and external factors, i.e. market valuation. Since market valuation will affect expected stock return, controlling for

market valuation effect to IPO firm competitor stock performance effect is important. We identify two market valuation indicators that control for industry effect, i.e. industry market to book ratio, and historical IPO return effect, i.e. median of IPO underpricing for the last 2 years.

When investor degree of risk aversion is low, the market valuation will be higher, expected stock performance will be lower, and vice versa. Hence, we expect that a higher market valuation will have a negative effect on the competitor's stock performance. When the expected return from investing in IPO stock is higher, investors will have more reason to sell competitor stock and buy IPO stock. Hence, we expect that a larger historical IPO underpricing will have a higher negative effect on competitor stock performance.

The investor may overreact to IPO underpricing. This overreaction makes IPO stock becoming overvalued in the short term and has a negative return in the long term (Loughran & Ritter, 1995). An investor may take advantage of selling overvalued IPO stock and invest in competitor stock. Hence, we expect that a higher IPO short term return will have a positive effect on competitor stock performance.

Our hypothesis model is summarized in table 2 and picture 1.

Table 2
Summary of Hypothesis

No.	Independent Variable	Competitor Short Term Effect	Competitor Long Term Effect
1	Higher IPO Firm Performance	-/+	-/+
No.	Control Variable	Short Term Hypothesis	Long Term Hypothesis
1	Larger competitor asset size	-	-
2	Younger competitor age	-	-
3	Higher competitor leverage	-	-
4	Higher industry	-	-

No.	Independent Variable	Competitor Short Term Effect	Competitor Long Term Effect
	valuation		
5	Higher historical IPO underpricing	-	-
6	Higher IPO firm competitor short term stock performance		+

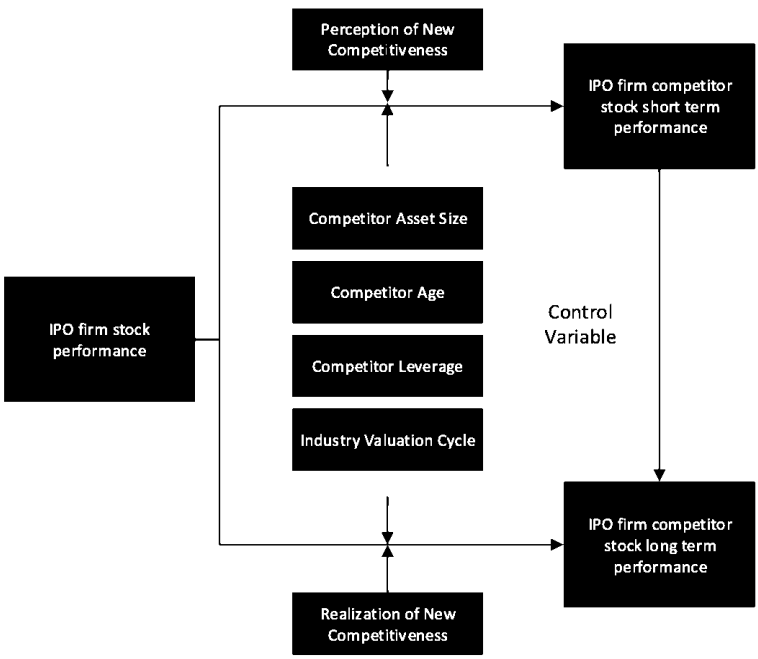

Figure 1. Hypothesis research model

3. Methodologies

3.1. Data

We focus our analysis on the Indonesia market. We collect IPO related data from Bloomberg Terminal. The data are (1) IPO firms for 2010 to 2017 totalled 192 firms, 152 firms after excluding financial and miscellaneous sector, and 38 firms after excluding firms that have larger IPO in the same industry within one year before and after the event to minimize contamination effect

(Akhigbe et al., 2003), (2) daily stock price from 01 January 2009 to 31 December 2018 for IPO firm and their competitors, (3) competitor data, i.e. competitor asset size, age, leverage, and (4) industry valuation cycle, i.e. market to book value ratio and average IPO underpricing for the last 2 years.

3.2. Methodology

3.2.1. Rival firm selection. Since IPO firm and their competitors compete in a relatively same market and using relatively same key strategic competitive advantage variable, i.e. financial condition, business model, etc., IPO firm and their competitor stock will react to the same external influences. Hence, IPO firms and its competitor stock price will be categorized within the same sector based on JASICA classifications. Our final data is 152 IPO firm with 8.085 corresponding competitors and 38 IPO firms with 1.715 corresponding competitors.

3.2.2. Abnormal return methods in event study. Method to calculate stock abnormal return differ in the benchmark used. Constant mean return model uses firm historical return as a benchmark. The market model uses a firm historical return relative to the market return as a benchmark. Market return model uses matched market return as the benchmark. Market model mostly used as a benchmark for calculating the stock abnormal return. However, market model's main advantage is also their main limitation. Market model is bound by historical data which is not available for IPO firm. To overcome historical data limitation and have a consistent measure, this study using the market return model and the firm's sector return as the benchmark. The market return model is:

$$AR_{it} = R_{it} - R_{mt}$$

Where:

AR_{it} is abnormal return for firm i at time t.

R_{it} is stock i return for time t.

R_{mt} is market return for time t.

Event windows used are as follows:

Table 3
Event Window Used for Event Study

No.	Time (days)	Event Window	Event Study	Cross Sectional Regression
1	t-30 to t+30	Short	yes	no
2	t+0 to t+30	Short	yes	yes
3	t+1 to t+30	Short	no	yes
4	t+31 to t+200	Long	no	yes

Abnormal return usually accumulated within event windows on consideration price needs time to reveal new fundamental value. This method is called Cumulative Abnormal Return (CAR).

3.2.3. Cross sectional regression model. This study examined IPO firm stock performance effect to short term, i.e. t+1 to t+30, and long term, i.e. t+31 to t+200, IPO firm competitor stock performance moderated with several control variables. IPO firm is represented by symbol i, IPO firm competitor is represented by symbol j, while market control variable is represented by m. Empirical model used for short term model is:

$$CARRIV_{jt} = \beta_0 + \beta_1 CARIPO_{it} + \beta_2 Asset_{jt} + \beta_3 Age_{jt} + \beta_4 Leverage_{jt} + \beta_5 IndustryValuation_{mt} + \beta_6 IPOUnderpricing_{mt} + \varepsilon_{jimt}$$

Where

$CARRIV$ = Cumulative Abnormal Return of Rival Firm j at event window t.
$CARIPO$ = Cumulative Abnormal Return of IPO Firm i at event window t.
$Asset$ = Logarithm of the total value of competitor assets.
Age = Difference between the IPO date of the company under study and the date of the competitor's IPO.
$Leverage\ Ratio$ = Ratio of long-term debt to market adjusted value of assets.

$IndustryValuation$ = Median of the Market to Book ratio from competitor firms in the same industry as the IPO firm.
$IPOUnderpricing$ = Median of all IPO underpricing of within 2 years before the IPO date.

While empirical model used for long term model are:

$$CARRIV_{jt} = \beta_0 + \beta_1 CARIPO_{it} + \beta_2 CARRIVST_{jt} + \beta_3\, Asset_{jt} + \beta_4 Age_{jt} + \beta_5 Leverage_{jt} + \beta_6 IndustryValuation_{mt} + \beta_7 IPOUnderpricing_{mt} + \varepsilon_{jimt}$$

Where

$CARRIV$ = Cumulative Abnormal Return of Rival Firm j at event window t.
$CARIPO$ = Cumulative Abnormal Return of IPO Firm i at event window t.
$CARRIVST$ = Competitor's short term performance measured by cumulative abnormal return at event window t+1 to t+30
$Asset$ = Logarithm of the total value of competitor assets.
Age = Difference between the IPO date of the company under study and the date of the competitor's IPO.
$Leverage\ Ratio$ = Ratio of long-term debt to market adjusted value of assets.
$IndustryValuation$ = Median of the Market to Book ratio from competitor firms in the same industry as the IPO firm.
$IPOUnderpricing$ = Median of all IPO underpricing of within 2 years before the IPO date.

We perform standard normality test such as Saphiro Wilk. From the test, we can conclude that the data are not normally distributed. Since the data is large, we can assume the data is normally distributed. We find heteroschedasticity from control variables which cannot be corrected even after we remove the variables. Since heteroschedasticity problem occurs from the control variable and is statistically not significant, we decided to ignore it and report the regression results.

4. Results and Discussion

4.1.1. Descriptive statistics result. Table 4 and 5, describe the results of the descriptive statistics of 152 IPO firms with 8.085 rival firms and 38 IPO firms with 1.715 rival firms respectively. The data presented has been corrected for outliers by winsorize 2.5% data on top and bottom. IPO CAR based on 152 IPO firms for period t+0 to t+30 days is 46.70% with almost half of the performance obtained in t+0 to t+1 days. While rival firm's performance is 0.55% with almost 7% or 0.04% is obtained in t+0 to t+1 days. IPO CAR based on 38 IPO firm for period t+0 to t+30 days is 8.73% and t+0 to t+1 days CAR is 9.11%. While rival firm's performance is 0.98% and t+0 to t+1 days CAR is -0.36%. IPO CAR based on 152 IPO firms and their competitor for period t+31 to t+200 days is 6.78% and 7.17%. IPO CAR based on 38 IPO firms and their competitor for similar period is 6.85% and 6.77%.

Table 4
Descriptive Statistics for 152 IPO and 8.085 Competitor Firm

	Mean	Min	Max	Standard deviation	Skewness	Kurtosis
Event Window (t+0 to t+1)						
IPO Firms	19,26%	-99,59%	74,89%	32,77%	-46,55%	1,21
Rival Firms	0,04%	-33,59%	887,92%	10,89%	66,45	5.128
Short Term (t+0 to t+30)						
IPO Firms	46,70%	-76,31%	123,21%	79,43%	1,59	2,42
Rival Firms	0,55%	-27,72%	334,15%	11,92%	0,74	1,14
Long Term (t+31 to t+200)						
IPO Firms	6,78%	-133,53%	182,56%	44,41%	-0,14	1,93
Rival Firms	7,17%	-64,03%	128,28%	33,13%	0,85	1,04

Table 5
Descriptive Statistics for 38 IPO and 7.015 Competitor Firm

	Mean	Min	Max	Standard deviation	Skewness	Kurtosis
Event Window (t+0 to t+1)						
IPO Firms	9,11%	-76,72%	106,41%	26,45%	0,68	6,89
Rival Firms	-0,36%	-7,60%	9,73%	2,69%	0,50	1,40
Short Term (t+0 to t+30)						
IPO Firms	8,73%	-78.51%	123,21%	32,97%	0,71	3,66
Rival Firms	0,98%	-26,32%	44,84%	11,78%	0,74	1,16
Long Term (t+31 to t+200)						
IPO Firms	6,85%	-58,44%	77,89%	28,69%	0,14	0,43
Rival Firms	6,77%	-63,78%	129,10%	32,24%	0,68	0,78

Table 6 and table 7 report descriptive statistics for control variable. Average asset for 152 IPO firm competitors is relatively larger than 38 IPO firm competitors. Other control variables such as competitor age, industry valuation, leverage ratio, and industry underpricing are relatively the same.

Table 6
Descriptive Statistics for 152 IPO Control Variable

	Mean	Min	Max	Skewness	Kurtosis
Asset	4.792.196	0,698	179.611.000	6,765	428,40
Age	13,45	0,53	114,35	0,627	9,68
Industry Valuation	1,594	0,488	16,42	7,69	36,97
Leverage Ratio	12,03%	0,00%	100%	2,18	5,08
Industry Underpricing	21,06%	-8,00%	70,00%	1,07	0,54

Table 7
Descriptive Statistics for 38 IPO Control Variable

	Mean	Min	Max	Skewness	Kurtosis
Asset	5.281.482	0,699	190.508.000	6,490	62,90
Age	13,198	0,50	35,93	0,13	-1,08
Industry M/B Ratio	1,592	0,66%	3,25	0,50	-0,50
Leverage Ratio	10,20%	0,00%	149,11%	2,34	7,52
Industry Underpricing	19,20%	-7,69%	70,00%	1,10	12,93

4.1.2. Event study results. Figure 2 and figure 3 report short term event study for 152 IPO firm and 8.085 competitors and 38 IPO firms and 7.015 competitors respectively. Performance differences between IPO firms and their competitors are higher for 152 IPO firms than 38 IPO firms. However, there are consistent patterns which evidence that IPO competitor performance tend to have positive CAR prior to IPO event and the trend persists until 30 days.

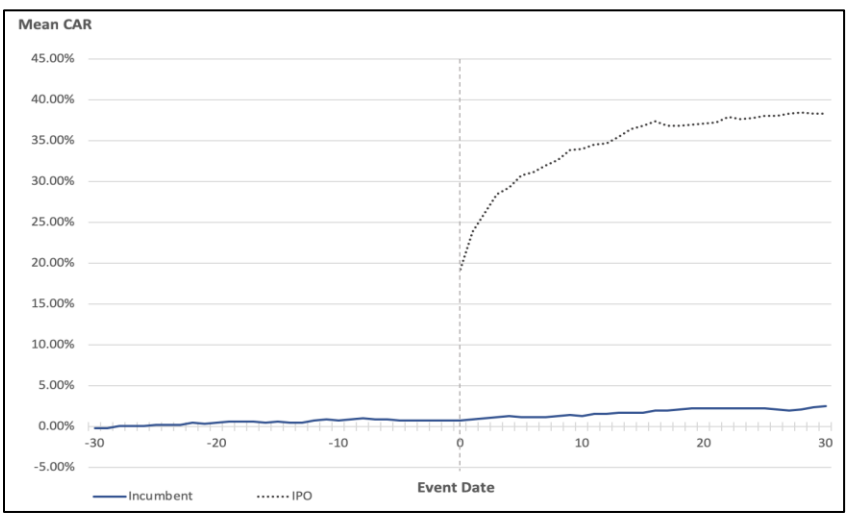

Figure 2. Mean CAR of 152 IPO Firms and 8.085 Competitor Firms 30 days preceding and following an IPO event

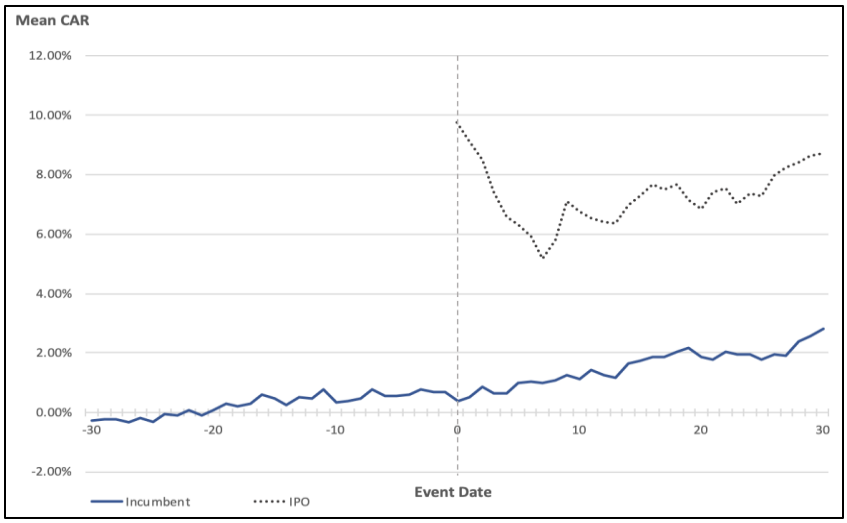

Figure 3. Mean CAR of IPO 38 Firms and 1.715 Competitor Firms 30 days preceding and following an IPO event

Figure 4 and figure 5 report long term event study results for 152 IPO firms and 8.085 competitors and 38 IPO firms and 7.015 competitors respectively. IPO firm stock performance has lower growth while competitor stock performance has higher growth that results in narrower stock performance differences. In figure 5 we can see that performance differences completely disappear.

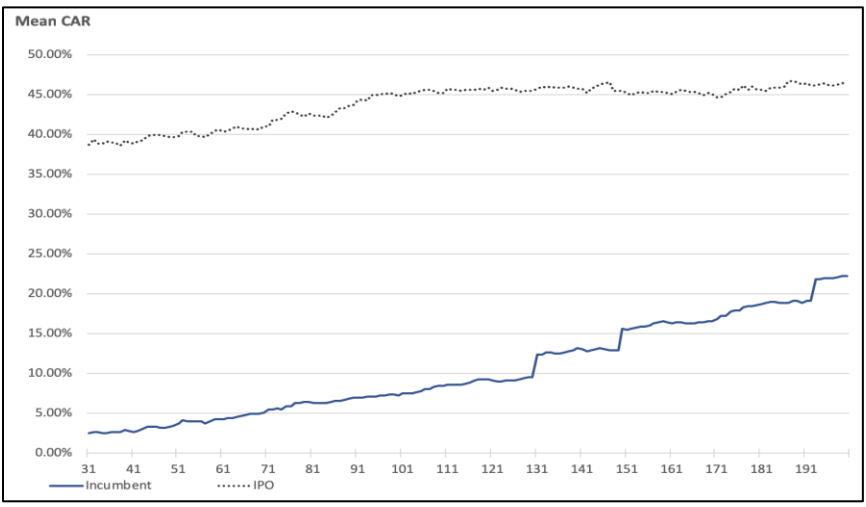

Figure 4. Mean CAR of 152 IPO Firms and 8.085 Competitor Firms 31 to 200 days following an IPO event

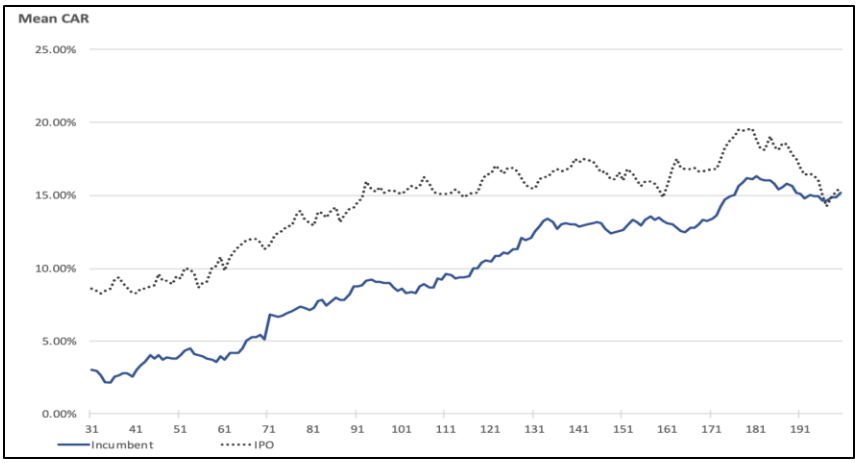

Figure 5. Mean CAR of 38 IPO Firms and 1.715 Competitor Firm 31 to 200 days following an IPO event

4.1.3. Cross section regression results. In table 8, we present cross-section regression results from 152 IPO and 8.085 IPO firm competitor CAR as the dependent variable and IPO firm CAR as an independent variable. Our study finds that IPO firm stock performance does not have significant effect both in short-term period and long-term period. This non-significant finding may result from contamination effect that has been found by Akhigbe et al. (2003). Control variable in the short term is not significant. However, in the long term effect study, we find that the control variable is mostly able to explain IPO firm competitor stock performance.

Table 8
Summary of Cross-section Regression Result (152 IPO)

Description	Short Term				Long Term	
	Period (0,30)	Period (0,30)	Period (1,30)	Period (1,30)	Period 31,200)	Period (31,200)
CARIPO	-0,344 (-0,001)	-0,082 (0,000)	0,041 (0,000)	0,133 (0,000)	0,969 (-0,008)	-0,550 (-0,005)
CARRIV (1,30)						-1,464 (-0,026)
Log(Asset)		-0,015 (-0,001)		-0,214 (-0,19)		-4,296*** (-1,107)

Description	Short Term				Long Term	
	Period (0,30)	Period (0,30)	Period (1,30)	Period (1,30)	Period 31,200)	Period (31,200)
Log (Age)		-0,159		0,295		2,443**
		(-0,059)		(0,108)		(2,524)
Leverage		-1,001		-0,869		-0,861
Ratio		(-0,725)		(-0,618)		(-1,761)
Industry		2,999**		1,625		-0,698
Valuation		(0,748)		(0,397)		(-0,483)
Industry		-1,120		-1,103		2,510**
Under-pricing		(-0,009)		(-0,008)		(0,053)
Constant	3,744	-0,392	4,609	0,354	19,376	5,235
	(0,576)	(-0,291)	(0,643)	(0,258)	(7,221)	(10,742)
R^2	0,000	0,002	0,000	0,001	0,000	0,004

Notes: ***, **, * means statistically significant for alpha 1%, 5%, and 10% Number in parentheses represents unstandardized beta

In table 9, we present cross-section regression results after controlling for contamination effect. We find IPO firm stock performance has negative effect toward competitor in short term period, i.e. t+1 to t+30 days with alpha 10%. In the long term period, IPO firm stock performance have positive effect to competitor stock performance. Control variable for 152 IPO and 38 IPO is relatively the same except in industry valuation and industry underpricing. Industry valuation is significant after controlling for contamination effect while industry underpricing is significant without controlling for contamination effect.

Table 9
Summary of Cross-section Regression Result (38 IPO)

Description	Short Term				Long Term	
	Period (0,30)	Period (0,30)	Period (1,30)	Period (1,30)	Period (31,200)	Period (31,200)
CARIPO	0,491	-0,220	-0,948	-1,801*	3,014**	3,366**
	(0,004)	(-0,002)	(-0,14)	(-0,031)	(-0,077)	(0,088)
CARRIV (1,30)						0,882 (0,029)
Log(Asset)		-0,537		-0,815		-1,772*

Description	Short Term			Long Term		
	Period (0,30)	Period (0,30)	Period (1,30)	Period (1,30)	Period (31,200)	Period (31,200)
		(-0,113)		(-0,168)		(-0,988)
Log (Age)		-0,432		-0,607		3,740***
		(-0,336)		(-0,465)		(7,804)
Leverage		0,797		1,156		-1,182
Ratio		(1,518)		(2,177)		(-6,059)
Industry		1,716*		1,570		-
Valuation		(0,816)		(0,815)		3,289***
						(-4,130)
Industry		-		-		-1,321
Underpricing		2,831**		3,45***		(-0,066)
		(-0,052)		(-0,062)		
Constant	3,179	1,037	4,601	1,636	7,572	3,043
	(0,940)	(1,510)	(1,294)	(2,379)	(6,109)	(11,646)
R^2	0,000	0,007	0,001	0,010	0,005	0,026

Notes: ***, **, * means statistically significant for alpha 1%, 5%, and 10% Number in parentheses represents unstandardized beta

5. Discussion and Research Limitation

Our event study and regression results on the effect of IPO firm performance to their rivals using 152 IPO firms as samples show no significant results suggesting the existence of contamination effect. However, when 38 IPO firms are used as samples, both event study and regression show different results. Event study shows both IPO firms and their rivals experience positive abnormal returns. Overall this finding implies that IPO firm activities provide good novel information to the industry. IPO firms and their rivals' return trajectory are different. In the short term, IPO firm has higher return trajectory induced by IPO underpricing. Our findings on IPO underpricing is relatively lower than previous study on IPO underpricing in Indonesia (Ritter, 2003). Lower underpricing shows that Indonesia's IPO market is becoming more mature and both firm and investor have more reasonable return expectation.

Positive competitor stock performance has two possibilities. First, the competitor is able to neutralize most IPO firm additional competitive advantage. Second, IPO firm needs more time to utilize

new additional competitive advantage more effectively. The fact that both IPO firm and competitor experience positive stock performance support the first possibilities. The fact that IPO firm competitor stock performance has steeper trajectory that implies that IPO firm needs more time to utilize new additional competitive advantages.

Based on the results and discussion, we can identify several research limitations. First, our model yields very low explanation power, i.e. r-square below 3%. Second, we do not conduct further research on whether positive stock performance of IPO firm and their competitor results from positive general stock market performance or this study is performed in bull market period.

6. Conclusion and Implication for Future Research

In this study, we examine the short term and long term effects of IPO firm to their competitor performance. The IPO firm effect to their competitor is assessed through stock performance. When IPO firm stock performance is positive, while IPO firm competitor stock performance is negative, we can conclude that IPO firm performance has negative effect to competitor performance. When IPO firm stock performance is positive, while IPO firm competitor stock performance is also positive, we can have two conclusions. First, information effect hypothesis is more dominant than competitive effect hypothesis. Second, competitive effect does not have negative effect both IPO firm and their competitor.

We perform event studies and cross section regression. Event studies find support for information effect hypothesis in the short term because both IPO and their competitor stock performance is positive. Event studies in the long term need more research because both IPO and their competitor positive stock performance may imply neutralization of competitive threat and increase the industry competitive advantage.

Cross section regression relatively does not give clear results because both short term and long term effect is significant but with different sign and statistically significant results came after controlling for contamination effects. In the short term, IPO firm has negative effect to competitor stock performance. In the long term,

IPO firm has positive effect to competitor stock performance. Information effect hypothesis is mostly dealt with short term effect and has positive sign. Competitive effect hypothesis dealt with short term and long term effect and has negative sign. The regression results are difficult to be interpreted.

Based on several limitations mentioned earlier, we propose further research on the effect of IPO firm on their rivals by considering the change in both IPO firms and their rivals' competitive advantage. We believe that further research will have significant contribution to literature on IPO firm effect to their competitor performance.

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