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INDONESIAN CAPITAL MARKET REVIEW

The High-Low Intraday Performance of Initial Public Offerings during Global Financial Crisis: Evidence from Malaysian Stock Market

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This study investigates the high-low intraday Performance of Initial Public Offering (IPO) during Global Financial Crisis (GFC) from January 2006 to December 2011. Models comprise of hierarchical and dummy variable regressions are evaluated. Our results show: Firstly, it can be observed that intraday IPOs performance are generally lower due to the GFC; Secondly, investors receive 7 to 30 percent IPO intraday returns on average in the first trading day of pre-GFC, -5 to 11 percent during GFC, and -4 to 14 percent in the post-GFC; and thirdly, the GFC does not act as a moderator that worsens the relationship between intraday IPO performance and oversubscription ratio. As for implication, this study dispels the notion that investors should totally shun IPO during GFC period as there are still positive intraday returns among the IPOs.

Keywords: Global Financial Crisis; Intraday IPO Performance; Oversubscription Ratio; Offer-to-High; Offer-to-Low

JEL classification: E22; G01; G11; G24

Introduction

Market sentiment for IPO was at its worst period during the Global Financial Crisis (GFC). The collapse of the sub-prime mortgage market in the U.S. triggered by the fall of property price in 2007, followed by the bankruptcy of Lehman's brother on 15 September 2008 of which had sent the shock wave to the global financial markets. As a result, issuers of new IPO opt to postpone their new listing during the crisis period.

Bad market sentiment caused investors to

lose their confidence to subscribe to the new IPO. For instance, in the case of Malaysia, the total number of new IPOs declined from 57 to 22 as compared between crisis and pre-crisis periods. Similarly, the IPO returns also decreased sharply from 30 to 11 percent. However, after the market has started to recover from April 2009, it is reported by Bloomberg that Malaysian stock market was able to raise USD 7.56 billion from IPOs in 2012 with prominent IPO issues like Felda Global Ventures (FGV) and IHH Healthcare Bhd and Astro Malaysia Holdings Bhd.

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¹ Refer to "Milestone Year for IPOs", accessed on 20 September 2017 <http://www.theedgemarkets.com/article/milestone-year-ipos>

While finance literature has recorded the incidence of underpricing on the first day of IPO debut. This may not be the case during the GFC when the price is traded below the offer price. This certainly affects the investor demand as well as the sentiment in the trading activities. Hence, it is a common practice that underwriters attempt to stabilize the IPO price on the first day of trading.

As market sentiment changes along the day, investors dispose the IPO issue at the highest price or lowest price on the first trading day. Hence, liquidity in trading activities is essential for IPO. The trading activities of IPO are more active when investors are able to dispose of the highest price or potential investors are able to buy at the lowest price.

If the stock market offers greater transparency in terms of IPO trading information, the market will be able to attract more investors and provide lower liquidity risk. For instance, international financial hubs such as Tokyo and London are more transparent in terms of trading information and hence, more companies are interested to do their IPOs in these markets, especially in the post-crisis period when the global economy is recovering.

According to World Federation Exchanges, European stock markets were the top IPO performer among the global stock markets in 2014, followed by the US stock markets and Asia-Pacific stock markets.² However, Malaysian IPO performance is affected by numerous factors such as the decline in crude oil prices, volatility of crude palm oil prices and the depreciation of Ringgit Malaysia against US dollars.

Albeit the above discussion, the corporate action of an IPO is still the most important factor. For instance, higher subscription of an IPO allows an investor to obtain abnormal returns as the IPO offer price is set below the intrinsic value by the issuer. In addition, investors may liquidate the share on the first day of trading to gain a quick profit (Chambers and Dimson, 2009; Kerins, Kutsuna and Smith, 2007; Kim, Krinsky and Lee, 1993; Koh and Walter, 1989; Krishnamurti and Thong, 2008; Ljungqvist, 2007; Loughran and Ritter, 2004; McDonald

and Fisher, 1972; Mohan and Chen, 2001; Ritter, 1984).

The study of intraday IPO performance is pertinent because investors are allowed to dispose of their share in the highest or lowest price on the first trading day. This study addresses how the GFC affects the intraday IPO performance (offer-to-high) and (offer-to-low). This study also investigates the moderating role of the global financial crisis that affects the relationship between IPO performance and subscription ratio.

In this study, the intraday IPO performance is measured based on initial returns (offer-to-high) and (offer-to-low). In this respect, the two relationships are measured: First, intraday IPO performance (offer-to-high) and GFC; and Second, intraday IPO performance (offer-to-low) and GFC. This study presents new ideas on intraday IPO performance amidst the GFC in the context of emerging market. It will contribute to the extant literature of IPOs as a valuable source of reference based on the empirical findings.

The remainder of the paper is organized as follows. Section two reviews the past literature followed by data and methodology. Section four discusses the results. The last section concludes the study.

Literature Review

Numerous studies have examined the relationship of IPO performance in various capital markets such as the US and Asian countries (Chang, Chiang, & Ritter, 2017; Ibbotson, Sindelar & Ritter, 1994; Ritter & Welch, 2002). For instance, according to Loughran, Ritter, and Rydqvist (1994), a study of 25 Asian countries in 1990, they reported the highest IPO performance with 80.3 percent in Malaysia, 78.1 percent in Korea, 45 percent in Taiwan, 32.5 percent in Japan, 27 percent in Singapore, 17.6 percent in Hong Kong.

The primary aim for IPO is to raise capital as the funding is vital for business expansion and investment. In this respect, a good IPO performance helps the issuer to obtain better

² World Federation of Exchanges, as accessed on 01 January 2016

bargaining power in a new project in the competitive market. However, the IPO performance can be affected by various factors such as initial aftermarket trading volume (Aggarwal, 2003; Bayley, Lee & Walter, 2006; Ellis, Michaely, & O'Hara, 2000; Ellis, Michaely, & O'Hara, 2002; Miller & Reilly, 1987; Schultz & Zaman, 1994), underwriter reputation (Carter & Manaster, 1990; Carter, Dark, & Singh, 1998; Chemmanur & Fulghieri, 1994; Dunbar, 2000; Nanda & Yun, 1997), capital structure and liquidity (Brennan & Frank, 1997), market conditions (Carey & Steen, 2006; Ellis, 2006; Ibbotson, Sindelar & Ritter, 1994; Ritter, 1984; Ritter, 1991).

According to Carey and Steen (2006), Ellis (2006), Ibbotson, Sindelar, and Ritter (1994), Ritter (1984), and Ritter (1991), they study the various market conditions such as hot market and cold market that provide different liquidities in the stock market. In this respect, hot issue market is defined as the period with a huge number of IPOs listed and with a better IPO performance as liquidity increases (Ritter, 1991).

In contrast, issuer feels more difficult to sell the stock at any price even at a very low return as liquidity decreases during cold issue market (Ibbotson, Sindelar & Ritter, 1994). Carey and Steen (2006) study the Hong Kong IPO from August 1995 to July 1999, the result shows there is a significant relationship between the IPO performance and market conditions. Therefore, they suggest that cold issue market is most probably to exist during the financial crisis when investor's confidence level is at the bottom.

Moreover, since the investor's confidence level is at the bottom, they are more pessimistic about the future market conditions as the environment become worst when uncertainty increase, especially the IPO market (Chudik & Fratzscher, 2011; Syllignakis & Kouretas, 2011). For instance, according to Bartman and Bodnar (2009), Billio and Caporin (2010), Chudik and Fratzscher (2011), Dooley and Hutchison (2009), and Syllignakis and Kouretas (2011), they study the impact of the financial crisis on stock performance and reported higher volatility of the stock market during the

financial crisis.

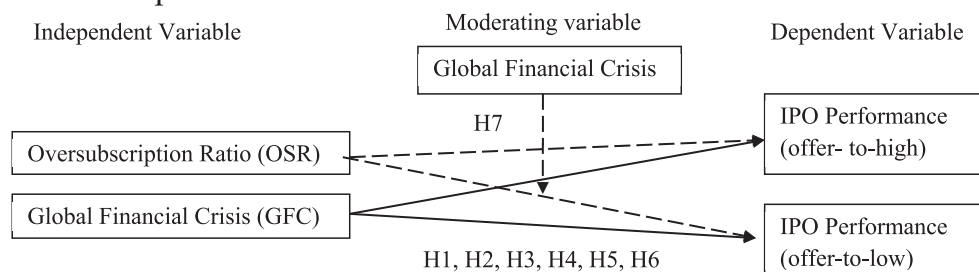
In general, the return of the IPO is obviously to be mitigated during the financial crisis. According to Chahine and Saade (2011), Chang, Kim and Thornton (2011), How, Jelic, Saadouni and Verhoeven (2007), Ibbotson, Sindelar and Ritter (1994), Lowry, Officer and Schwert (2010), Ritter (1991), Ritter and Welch (2002), Yong (2007), the return of the IPO performance can be explained by numerous dimensions such as offer-to-open, offer-to-close, offer-to-high, offer-to-low, offer between the announcement date to closing date, offer between the advertising period to closing date. Hence, this study uses the measurement of intraday IPO performance (offer-to-high) and (offer-to-low) to measure IPO performance. This paper examines the impact of GFC and enhances the understanding of intraday IPO performance. Also, it aims to fill the research gap in the literature by analyzing more specific issues during the financial crisis as the investor's confidence level is at the bottom.

According to Forseth, Royrvik and Clegg (2015), Gendron and Smith-Lacroix (2015), Saadaoui (2015), the global financial crisis started from the early August 2007 to the mid of September 2008. Hence, this study uses three different sub-periods to reflect various market conditions such as pre-financial crisis, during the financial crisis and post-financial crisis. The first sub-period started from January 2006 to July 2007, the second sub-period started from August 2007 to September 2008 and the last sub-period started from October 2008 to December 2011. The time frame used allows sufficient time for the change of market conditions.

In addition, this study enriches the understanding of the moderating effect of the financial crisis to the intraday IPO performance and oversubscription ratio. This study examines the role played by the financial crisis in a more comprehensive perspective. The conceptual framework is presented in Figure 1.

In this study, the intraday IPO initial performance is defined as offer-to-high, IP(OTH) and offer-to-low, IP(OTL). IP(OTH) is calculated as the percentage change in price from the offer price to the highest price on the first trading day.

Figure 1. The Conceptual Framework



Source: Authors' own sketch

IP(OTL) is calculated as the percentage change in price from the offer price to the lowest price on the first trading day.

The return of IPO performance is $R_t = [(P_t - P_{t-1}) / P_{t-1}] \times 100$. In addition, the dependent variables consist of IPO performance as measured by return (offer-to-high) and (offer-to-low). Independent variables consist of IPO oversubscription ratio (OSR) as measured by demand, and lastly, the moderating variable is measured by the dummy of GFC.

According to Figure 1, the following hypotheses are established:

- H1: There is a positive intraday IPO performance in pre-GFC
- H2: There is a positive intraday IPO performance during GFC
- H3: There is a positive intraday IPO performance in the post-GFC
- H4: There is a positive relationship between intraday IPO performance and oversubscription ratio in pre-GFC
- H5: There is a positive relationship between intraday IPO performance and oversubscription ratio during GFC
- H6: There is a positive relationship between intraday IPO performance and oversubscription ratio during post-GFC
- H7: GFC moderates the relationship between intraday IPO performance and oversubscription ratio

In normal circumstances, the investor will be more careful in subscribing the IPO issue during GFC. They are more pessimistic about the future market conditions as the environment becomes worst when uncertainty increase. Hence, aggressive investors will sell the IPO

at the highest price and risk-averse investors will sell at the lowest price on the first day of trading. H1, H2, and H3 are developed to study the intraday IPO performance (offer-to-high) and (offer-to-low) in pre-GFC, during GFC and post-GFC.

In general, financial crisis affects stock performance and this could lead to the low confidence level of the investors. As a result, the subscription ratio will be mitigated as the demand to buy IPO is decreased. Moreover, issuers are not interested to opt for IPO listing during the GFC. Hence, H4, H5, and H6 are established to study the relationship between intraday IPO performance and oversubscription ratio in pre-GFC, during GFC and post-GFC. The relationships of H4, H5, and H6 can be tested by looking at the positive coefficient of subscription ratio.

However, the strength of the relationship is still vague as no accurate estimation to what extent GFC influences the relationship between intraday IPO performance and oversubscription ratio. Hence, H7 is developed to study the strength of the relationship that to achieve greater accuracy and consistency during the financial crisis.

Research Methods

This study uses 144 fixed price offer IPOs data listed on the Bursa Malaysia from January 1, 2006, to December 31, 2011. This period is chosen to study the change of the market condition due to the financial crisis. The data are computed from Bursa Malaysia,³ and various newspaper reports.

³ Refer to <http://www.bursamalaysia.com/market/> as accessed on 01 November 2015. The list of IPO is available upon request from the author.

To analyze the impact of GFC on the effect of IPO performance, this paper uses regression model of intraday IPO performance (offer-to-high) and (offer-to-low) with the GFC as the dummy.

$$IP(OTH)_i = \alpha_0 + \alpha_1 OSR_i + \alpha_2 Dum_{GFCi} + \alpha_3 OSR_i Dum_{GFCi} + \varepsilon_i \quad (1)$$

$$IP(OTL)_i = \beta_0 + \beta_1 OSR_i + \beta_2 Dum_{GFCi} + \beta_3 OSR_i Dum_{GFCi} + \varepsilon_i \quad (2)$$

Block 1:

$$IP(OTH)_i = \gamma_0 + \gamma_1 (OSR_i) + \gamma_2 Dum_{GFCi} + \varepsilon_i \quad (3)$$

Block 2:

$$IP(OTH)_i = \theta_0 + \theta_1 (OSR_i) + \theta_2 Dum_{GFCi} + \theta_3 OSR_i * Dum_{GFCi} + \varepsilon_i \quad (4)$$

Block 3:

$$IP(OTL)_i = \gamma_0 + \gamma_1 (OSR_i) + \gamma_2 Dum_{GFCi} + \varepsilon_i \quad (5)$$

Block 4:

$$IP(OTL)_i = \theta_0 + \theta_1 (OSR_i) + \theta_2 Dum_{GFCi} + \theta_3 OSR_i * Dum_{GFCi} + \varepsilon_i \quad (6)$$

Where:

$IP(OTH)_i$ is intraday IPO performance (offer-to-high) that denotes the percentage change in price from the offer price to highest price on the first trading day of the i -th company.

$IP(OTL)_i$ is intraday IPO performance (offer-to-low) that denotes the percentage change in price from the offer price to the lowest price on the first trading day of the i -th company.

OSR_i is oversubscription ratio that denotes the number of times an IPO issue either over-demanded or under-demanded by the group of investors of the i -th company.

$Dum_{GFCi} = 0$ represents the dummy for the period without financial crisis from January 2006 to July 2007 (pre-GFC) and October 2008 to December 2011 (post-GFC) of the i -th company.

$Dum_{GFCi} = 1$ represents the dummy for the period of financial crisis from August 2007 to September 2008 of the i -th company. $OSR_i Dum_{GFCi}$ represents the interaction between oversubscription ratio and a dummy for the period of GFC of the i -th company.

GFC has been added to equation (4) and (6) as a moderator to examine the interaction effect between intraday IPO performance and oversubscription ratio. There are two essential arguments (i) investors liquidate the IPO at the highest point, $IP(OTH)$ and at the lowest point, $IP(OTL)$ on the first trading day; (ii) GFC affects investor's interest to subscribe the IPO prior to the listing, OSR .

For the equation (3) and (5), the block 1 is to control the OSR variable that is not affected by the GFC in explaining the intraday IPO performance. The observed effect of intraday performance is independent.

For the equation (4) and (6), the block 2 is the order-of-entry, where GFC is considered before looking at others. It shows the percent of the variability in the intraday IPO performance that can be accounted by the GFC.

Results and Discussions

Table 1 and 2 indicate the descriptive results of intraday IPO performance (offer-to-high) and (offer-to-low). The sample consists of 144 fixed-price offer IPOs listed on the Bursa Malaysia from January 2006 to December 2011. The results of the descriptive statistics comprise from the periods of pre-GFC, during GFC and post-GFC.

The intraday IPO performance is calculated from the percentage change in the price of the offer price to the highest (offer-to-high) and lowest price (offer-to-low) on the first trading day. An IPO performance of positive return indicates the share price traded on the first day of trading is higher than the offer price. In contrast, an IPO performance of negative return indicates the share price traded on the first day of trading is lower than the offer price. The higher the positive return represents the better the intraday IPO performance, in short, the share price traded on the first day of trading is higher than the offer price.

Table 1 and 2 show the descriptive results of the mean and median of intraday IPO performance of 144 fixed price offer IPOs from 2006 to 2011. The results of the mean and median of intraday IPO performance (offer-to-high) are

Table 1. Descriptive statistics of intraday IPO performance (offer-to-high) for pre-GFC, during GFC and post-GFC

Year	n	Mean	Median	Std. Dev	Min.	Max.
<u>Pre-GFC</u>						
2006	39	21.53**	10.56	45.41	-54.55	153.56
01/2007 to 07/2007	18	46.99**	25.00	48.34	-9.52	140.00
Average		29.57	22.45		-54.55	153.66
<u>During GFC</u>						
08/2007 to 12/2007	8	19.36**	17.80	9.84	6.06	35.20
01/2008 to 09/2008	14	6.07	3.88	16.59	-18.67	52.86
Average		10.91	9.88		-18.67	52.86
<u>Post-GFC</u>						
10/2008 to 12/2008	3	1.19	0	2.06	0	3.57
2009	13	18.07*	4.76	26.27	2.00	83.00
2010	28	17.48	4.01	48.10	0	228.19
2011	21	7.99**	5.35	9.44	0	41.18
Average		13.78	4.40		0	228.19
<u>Overall</u>						
2006-2011	144	25.05**	13.08	46.95	-54.55	307.41
2006-2011 (excluding GFC)	122	27.60**	15.09	50.19	-54.55	307.41

Note: Significance at 5 percent and 1 percent level as indicated by * and ** respectively.

Table 2. Descriptive statistics of intraday IPO performance (offer-to-low) for pre-GFC, during GFC and post-GFC

Year	n	Mean	Median	Std. Dev	Min.	Max.
<u>Pre-GFC</u>						
2006	39	0.29	-1.91	36.00	-60.00	121.95
01/2007 to 07/2007	18	23.06**	10.46	30.97	-10.48	92.50
Average		7.48	5.56		-60.00	121.95
<u>During GFC</u>						
08/2007 to 12/2007	8	5.59	7.60	11.73	-16.67	19.20
01/2008 to 09/2008	14	-11.29**	-13.66	13.31	-34.67	14.29
Average		-5.51	-4.56		-34.67	19.20
<u>Post-GFC</u>						
10/2008 to 12/2008	3	-13.65	-7.14	11.27	-26.67	-7.14
2009	13	-4.54	-6.00	10.63	-19.05	25.35
2010	28	3.69	-2.67	36.49	-21.67	180.50
2011	21	-12.90**	-9.56	14.56	-60.48	0
Average		-4.12	-6.00		-60.48	180.50
<u>Overall</u>						
2006-2011	144	3.63	1.72	29.56	-60.00	148.48
2006-2011 (excluding GFC)	122	5.22*	2.48	31.26	-60.00	148.48

Note: Significance at 5 percent and 1 percent level as indicated by * and ** respectively

25.05 and 13.08 percent; (offer-to-low) are 3.63 and 1.72 percent respectively. However, if the 22 IPOs during the GFC are excluded, there is higher mean and median of IPO initial performance.

In addition, the spread of the IPO initial performance (offer-to-high) and (offer-to-low) are skewed to the right as indicated by the mean is higher than the median during pre-GFC. Hence, there are some IPOs which offer higher returns than others. Among the three market conditions, investors could earn around 7.48 to 29.57 percent of intraday IPO performance in the pre-

GFC.

In contrast, the investors still enjoy some profit approximately -5.51 to 10.91 percent during GFC and -4.12 to 13.78 percent in the post-GFC. The spread of the intraday IPO initial performance (offer-to-high) and (offer-to-low) are skewed to the right as indicated by the mean is higher than the median during post-GFC. However, the spread of the intraday IPO initial performance (offer-to-high) is skewed to the right but (offer-to-low) is skewed to the left during the GFC.

In other words, there are lesser IPOs with

Table 3. The regression results of intraday IPO performance (offer-to-high) and (offer-to-low) during the GFC

	Model 1 IPO Performance (offer-to-high)		Model 1 IPO Performance (offer-to-low)
α_0	21.49 (3.32)**	β_0	3.56 -0.71
$\alpha_1 OSR_i$	0.22 (2.20)*	$\beta_1 OSR_i$	0.11 -1.38
$\alpha_2 Dum_{GFCi}$	-16.78 (-1.33)	$\beta_2 Dum_{GFCi}$	-16.33 (-1.67)
$\alpha_3 OSR_i Dum_{GFCi}$	0.41 -0.6	$\beta_3 OSR_i Dum_{GFCi}$	0.67 -1.27
Observations	79	Observations	79
Durbin-Watson	1.75	Durbin-Watson	1.81
R-square	0.11	R-square	0.08
F-Value	3.04*	F-Value	2.25
	Model 2 IPO Performance (offer-to-low)		Model 2 IPO Performance (offer-to-low)
α_0	10.87 (2.19)*	β_0	-0.99 (-0.32)
$\alpha_1 OSR_i$	0.64 (7.36)**	$\beta_1 OSR_i$	0.18 (3.33)**
$\alpha_2 Dum_{GFCi}$	-6.16 (-0.56)	$\beta_2 Dum_{GFCi}$	-11.77 (-1.72)
$\alpha_3 OSR_i Dum_{GFCi}$	-0.01 (-0.02)	$\beta_3 OSR_i Dum_{GFCi}$	0.59 -1.55
Observations	87	Observations	87
Durbin-Watson	2.71	Durbin-Watson	2.3
R-square	0.41	R-square	0.17
F-Value	19.34**	F-Value	5.84**

Notes: The indication of * and ** shown is the 5 percent and 1 percent significance level. The value in parenthesis is t-statistics. For model 1 and 2, sample period for pre-GFC starts from Jan 2006 to July 2007; GFC starts from August 2007 to September 2008 and sample period for post-GFC starts from October 2009 to December 2011.

positive returns but the intraday IPO performance decrease due to the GFC significantly. Hence, this phenomenon has discouraged new fund to flow into the stock market and as a result, there is no new IPO is issued for the first half-year of 2009.

The results obtained from Table 3, in model 1, the IPO performance (offer-to-high) for pre-GFC is 21.49 percent meanwhile for OSR increases by 1 time, and the IPO performance (offer-to-high) will increase 0.22 percent, on average the IPO performance (offer-to-high) is 5.37 percent during GFC. In contrast, the IPO performance (offer-to-low) for pre-GFC is 3.56 percent meanwhile for OSR increases by 1 time, and the IPO performance (offer-to-low) will increase 0.18 percent, on average the IPO performance (offer-to-low) is -11.99 percent during GFC. Hence, H1, H2, H4, and H5 are supported.

In model 2, it observes for IPO issued from October 2008 to December 2011, the IPO performance (offer-to-high) for post-GFC is 10.87 percent meanwhile for OSR increases by 1 time, and the IPO performance (offer-to-high) will increase 0.64 percent, on average the IPO performance (offer-to-high) is 5.34 percent during GFC. In contrast, the IPO performance (offer-to-low) for post-GFC is -0.99 percent meanwhile for OSR increases by 1 time, and the IPO performance (offer-to-low) will increase 0.18 percent, on average the IPO performance (offer-to-low) is -11.99 percent during GFC. Hence, H2, H3, H5, and H6 are supported.

The results shown are more interesting for the interaction term between GFC and OSR which is not statistically significant for both model 1 and 2 although the results show the economic significance as 1 unit increase in OSR, the IPO initial performance (offer-to-high) will increase

Table 4. Results of hierarchical regression of intraday IPO performance (offer-to-high)

Independent Construct	IPO Performance (offer-to-high)	
	Model 3 (block 1) coefficient	Model 4 (block 2) coefficient
<i>Constant</i>	13.20 (3.36)**	14.65 (3.40)**
<i>OSR_i</i>	0.45 (6.38)**	0.44 (6.19)**
<i>OSR_iDum_{GFCi}</i>	-	-8.05 (-0.83)
R ²	0.22	-
R ² change	-	0.00
F-value	40.74	-
F change	-	0.68
p-value	0.00	0.41

Notes: The indication of * and ** shown is the 5 percent and 1 percent significance level. The value in parentheses is t-statistic.

Table 5. Results of hierarchical regression of intraday IPO performance (offer-to-low)

Independent Construct	IPO Performance (offer-to-low)	
	Model 5 (block 1) coefficient	Model 6 (block 2) coefficient
<i>Constant</i>	-0.67 (-0.25)	0.65 (0.22)
<i>OSR_i</i>	0.16 (3.37)**	0.16 (3.18)**
<i>OSR_iDum_{GFCi}</i>	-	-7.32 (-1.10)
R ²	0.07	-
R ² change	-	0.00
F-value	11.36	-
F change	-	1.23
p-value	0.00	0.28

Notes: The indication of * and ** shown is the 5 percent and 1 percent significance level. The value in parentheses is t-statistic.

by 0.41 percent and -0.01 percent and (offer-to-low) will increase by 0.67 percent and 0.59 percent. The explanation is built when there are few IPOs which receive higher attention in demand during the GFC that provides higher intraday IPO performance to investors. Therefore, the good quality of IPOs is scarce and lead to the willingness of an investor to pay for such IPOs. At a glance, H1, H2, H3, H4, H5, and H6 are significant valid as there is a confident reduction in intraday IPO performance due to the GFC.

For the hierarchical regressions in Table 5 and 6, the OSR is the independent variable while IPO performance is the dependent variable. OSR is put as block one and GFC is put as block two in each of the hierarchical regression models. GFC plays as a moderating variable by examining the interaction effect between intraday IPO performance and OSR. The result of the moderating effect of the GFC is provided in

Table 5 and 6.

Moreover, it is observed that the OSR has a positive relationship with intraday IPO performance from model 3 and 4 of Table 5 and model 5 and 6 of Table 6. OSR plays a vital role to explain the intraday IPO performance. We also conclude that the higher the indicator reflects higher OSR for the IPO demand, and thus, the higher debut price of an IPO that leads to a substantially higher opening price on the first day of trading.

From the results obtained from model 4 and model 6, it can be observed that the interaction effect of OSR and GFC is not significant. Therefore, hypothesis 7 is not valid and to the extent, it can be concluded the GFC does not moderate the relationship between OSR and intraday IPO performance even it gives an impact on the stock market. Our result indicates, the GFC does not make the situation worse, investors are still able to gain some positive returns,

this is because when good IPOs are being offered, investors are willing to subscribe.

This result shows the effect of the GFC on intraday IPO performance. It provides an argument for IPO underpricing being lower during the GFC. For instance, one of the pioneer of IPO research, Rock (1986) concludes IPO firm provides the uninformed investor a greater discount through underpricing which help to increase the demand for GFC.

Likewise, Aggarwal and Rivoli (1990), Ljungqvist, Nanda and Singh (2007) argue that IPO performance is positively related to long-run underperformance due to the investor irrationality. In another study, Cornelli and Goldreich (2003) find that oversubscription for an IPO is positively correlated with IPO performance. They also report that there is a huge variability in IPO performance across different markets.

Conclusions

It can be concluded that GFC has affected the intraday IPO performance. However, GFC plays a vital role in explaining the reduction of

intraday IPO performance but it does not moderate the relationship between intraday IPO performance and oversubscription ratio.

This study contributes the knowledge of financial crisis to the extant literature of IPO studies. Firstly, the GFC does affect the intraday IPO performance. Secondly, intraday IPO performance provides 7 to 30 percent of returns to investors for the pre-GFC; -5 to 11 percent of returns during GFC and -4 to 14 percent of returns for the post-GFC. Thirdly, the GFC does not act as a moderator that worsens the relationship between intraday IPO performance and oversubscription ratio. Lastly, this study dispels the notion that investors should totally shun IPO during GFC period as there are still positive intraday returns among the IPOs.

In addition, the empirical results are robust as both results from the dummy variable regression and hierarchical regression yield similar conclusion. The future research may consider extending the coverage period from pre-GFC to post-GFC as financial market recovers from the crisis.

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