International Journal of Innovation, Creativity and Change. www.ijicc.net
Volume 5, Issue 2, Special Edition, 2019

Determinants of Lockup Expiration in Malaysian IPOS

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This paper examines the determinant factors at the expiration of IPO lockup period using a sample of 290 IPO firms on the Bursa Malaysia for the period from 1 May 2003 to 31 December 2012. Lockup in Malaysia is mandatory and there are two lockup regimes involved in this study arising from regulatory change that took effect on 1 May 2003 and 3 August 2009, referred to as Regime #1 and Regime #2, respectively. The independent variables identified in the regression analysis are lockup regime, fractions of insider buying and selling before and after expiration, company size, age, market to book value, offer price, underwriter, auditor, and technology firm. Using three-day cumulative abnormal returns as the dependent variable obtained from a market model approach of the event study, the results show that company size, fraction of insider selling after lockup expiration and fraction of insider buying after lockup expiration are the significant factors in relations to abnormal returns at lockup expiry. For robustness, a market adjusted return model is employed which provides similar results. Further analysis on lockup regimes indicates that the regression result is driven by Regime #1.

Key words: *initial public offering, lockup period, lockup regime.*

Introduction

Lockup period is an essential component of the initial public offerings (IPOs) whereby the insiders are forbidden from disposing their shareholdings after the IPO listing. These insiders are permitted to liquidate the portion of their retained shareholdings upon the expiry of the lockup period. This event could possibly lead to a substantial impact on the stock market as the availability of shares increases extensively. The terms lockup, lock-in and share moratorium are used in the US, the UK and Malaysia, respectively which have comparable implication. While mandatory lockup is regulated by the regulators of the country, voluntary lockup consists of an agreement between IPO firm and its underwriter. Hence, different lockup provisions indicate that there may be some unique features in each country that might affect the share prices, trading volume and determining factors on market reactions to the expiration of the lockup period. Given the dissimilar regulations and variation on lockup provisions, would the expiration of lockup period in Malaysian IPOs differ from those observed in the international markets?

The pioneering work on lockup expirations is found in well-known studies originating from the US (e.g., Ofek & Richardson, 2000; Brav & Gompers, 2000; Field & Hanka, 2001; Bradley *et al.*, 2001; Garfinkle *et al., 2002*), and the UK (e.g. Espenlaub *et al*., 2001). Nevertheless, since Brav and Gompers' (2003) appeal for more research that exploits the variation in global lockup choices, studies from the international equity markets began to develop. Some of these studies are from Germany (Novak, 2004), India (Mahajan & Singh, 2011), Hong Kong (Goergen *et al.*, 2010) and Italy (Boreiko & Lombardo, 2013; Bassey, Abang & Iji 2017). Moreover, studies on lockups have reported mixed evidence, hence inducing further examination. However, this study focuses on the factors in determining the market reaction at the lockup expiry.

Cross-sectional studies on market reaction to lockup expiration determinants have verified the correlation between the abnormal returns and certain factors. Previous studies from the US (e.g., Brav & Gompers, 2003; Field & Hanka, 2001; Bradley *et al.*, 2001; Brau *et al.*, 2004), and outside the US (e.g., Chen *et al*., 2005; Kryzanowski & Liang, 2008; Hoque, 2011; Hakim *et al.*, 2012) examine the importance of these factors as they are associated with significant price decline upon the expiration of lockup period. Among the significant factors are venture capital-backed companies, size, percentage of shares locked, high tech companies and percentage of management ownership.

Moreover, it is observed that there have been regulation changes pertaining to lockup provision in Malaysia since it initiation in 3 May 1999. The revision in 2009, which is the current lockup provision, is evidently the most restrictive and vigilant where all IPO firms are subjected to lockup period. Therefore, the changes in lockup regimes incorporated in this study are further explored, focusing on lockup regimes that took effect on 1 May 2003 and 3 August 2009, referred to as Regime #1 and Regime #2, respectively.

Meanwhile, few studies have been undertaken in the Malaysian market involving IPO lockup. Zameni and Yong (2017) examining the trading behavior around lockup expiry by substantial shareholders, Che-Yahya *et al.* (2015) exploring the impact of lockup provision on two IPO anomalies in the instant aftermarket, Mohd-Rashid *et al.* (2014) investigating the impact of lockup provisions on IPO initial returns, and Che-Yahya *et al*. (2013) examining the influence of lockup provisions on flipping activity.

The rest of the paper proceeds as follows. Section 2 describes the data and research methods used in this study. Empirical results are discussed in Section 3, while Section 4 concludes the paper.

Methodology

The data used in this study are from those IPO firms listed on Bursa Malaysia between 1 May 2003 and 31 December 2012, involving two lockup regimes. In addition, several data conditions are imposed in order to be included in the final sample. 290 IPOs made up the final sample of which 220 IPOs (76%) fall under the first regime whereas the remaining IPOs of 70 (24%) represent the second regime. To examine the price reaction to lockup expiration in terms of cumulative abnormal returns (CAR), event study method is employed. The market model used is as stated in equation (1):

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \quad (1)$$

where R_{it} is the return for firm *i* on day *t* in estimation period, R_{mt} is the average returns for all firms in Bursa Malaysia on day *t* (FBM KLCI is used as the market index), α_i and β_i are the intercept and the slope parameters for firm *i*, and ε_{it} is the error term. Abnormal returns, for each firm, are calculated by finding the difference between actual returns and expected returns for a given time period as shown in equation (2):

$$AR_{it} = R_{it} - (\alpha_i + \beta_i R_{mt}) \quad (2)$$

To consider the joint effects of the various variables investigated, multiple regression analysis is employed as stated in equation (3):

$$CAR_i = \beta_0 + \beta_1 LREGIME_i + \beta_2 FRACSELL_i + \beta_3 FRACBUY_i + \beta_4 FRACSAFTER_i + \beta_5 FRACBAFTER_i + \beta_6 LNSIZE_i + \beta_7 MTBV_i + \beta_8 OFFPRICE_i + \beta_9 UNDER_i + \beta_{10} AUDIT_i + \beta_{11} AGE_i + \beta_{12} TECH_i + \varepsilon i \quad (3)$$

Following Field and Hanka (2001), Kryzanowski and Liang (2008), Hoque (2011), and Hakim *et al.* (2012), the 3-day CARs (-1, +1) is the dependent variable. The independent variables considered are:

LREGIME	=	*Lockup Regime #1 = 1 and zero otherwise, where Regime #1 is IPO from 1 May 2003 to 2 August 2009;*
FRACSELL	=	*Fraction of insider sell before lockup expiry;*
FRACBUY	=	*Fraction of insider buy before lockup expiry;*
FRACSAFTER	=	*Fraction of insider sell after lockup expiry;*
FRACBAFTER	=	*Fraction of insider buy after lockup expiry;*
LNSIZE	=	*Natural logarithm of the market capitalization based on the number of shares offered in the IPO times by the offer price;*
MTBV	=	*Market-to-book ratio, a proxy for growth opportunities;*
OFFPRICE	=	*IPO offer price;*
UNDER	=	*Dummy variable = 1 for prestigious underwriter and zero otherwise;*
AUDIT	=	*Dummy variable = 1 if company's auditor is highly prestigious and zero otherwise;*
AGE	=	*Company age in years;*
TECH	=	*Dummy variable = 1 for technology sector firms and zero otherwise;*
εi	=	*error term.*

Empirical Results

In the regression analysis, the correlations between any two independent variables are less than 0.8, while the mean of the variance inflation factor (VIF) is 1.60. Hence, multicollinearity is not a cause of concern. Table 1 below presents the regression results using ordinary least squares (OLS) method. The Adjusted R^2 of 1.3%, even though appears small, it is comparable to other studies such as Brav and Gompers (2003) and Brau *et al.* (2004) of 1.3% and 2.0%, respectively. The results show that only the coefficients for

FRACSAFTER and LNSIZE are statistically significant at 5% level while FRACBAFTER is statistically significant at 1% level. The rest of the variables are observed to be statistically insignificant in relation to the abnormal returns.

Table 1: Multiple Regressions Market Model

Variable	**Coefficient**	**t-statistics**	**p-value**
INTERCEPT	0.1183	1.67	*0.095
LREGIME	-0.0007	-0.07	0.948
FRACSELL	0.0328	0.38	0.703
FRACBUY	0.0132	0.12	0.907
FRACSAFTER	-0.3905	-2.14	**0.033
FRACBAFTER	3.3651	3.08	***0.002
LNSIZE	-0.0238	-2.13	**0.034
MTBV	-0.0050	-1.12	0.263
OFFPRICE	0.0087	1.23	0.220
UNDER	0.0082	0.44	0.657
AUDITOR	0.0160	1.44	0.150
LNAGE	0.0005	0.14	0.887
TECH	-0.0254	-1.33	0.185
Number of observations		290	
R-squared		0.056	
Adjusted R-squared		0.013	
F-statistics		1.770	
Significance of F-statistics		0.047	

***Significant at 1% level, **Significant at 5% level,*Significant at 10% level
Notes: The dependent variable is the 3-day cumulative abnormal returns (-1, +1).
The t-statistics and p-values are based on robust standard errors.

As expected, the result for FRACSAFTER indicates statistically significant negative relationship between insider sales after the expiration of lockup period and cumulative abnormal returns. The result is consistent with the studies of Angenendt *et al.* (2005), Field and Hanka (2001), and Chen *et al.* (2012). Angenendt *et al.* (2005) find that abnormal returns for insiders' sales are negative and strongly statistically significant at lockup expiration whereas Field and Hanka (2001) find that the abnormal return is significantly more negative when insiders disclose share sales on the unlock day. Moreover, Chen et al. (2012) indicate that senior executives' insider sales are largely motivated by private information whereas sales by other insiders tend to be driven by diversification. Insiders' sales can have a

potentially strong impact on the share price (Zainudin et al, 2017a). This trading activity tends to convey bad news as it suggests a reduction in insider incentives, lack of insider confidence, and an increase in the supply of shares that may cause a decline in price (Field & Hanka, 2001; Brau *et al.*, 2005; Mahdi,Ibrahim & Armia 2018). Since this study captures the actual trading by insiders during post-lockup expiry, it shows that the impact of the negative abnormal return is entirely caused by the insiders' sales (Zainudin et al., 2017b). A possible explanation for the significant negative result could be related to either portfolio diversification purpose or that the insiders have some negative private information regarding the company's future prospect.

The LNSIZE is used as a proxy for information asymmetry in this cross sectional study. The results indicate a negative relationship with the abnormal returns which is statistically significant. It is not as expected since hypothetically, the level of information asymmetry is lower in larger companies, and thus less abnormal returns are expected at the expiration of the lockup period. The results are inconsistent with the studies of Bradley et al. (2001), Brav and Gompers (2003) and Brau et al. (2004). They found significant smaller price decline for larger companies where these companies are likely to have more information available in the market. In addition, more information available for larger companies (Main Market listing) would lead to a less severe information asymmetry problem. A possible explanation could be due to the fact that this study focuses only on first stage lockup expiry, whereas the second and third stages of expiry occur in the ACE Market which is the listing for smaller firms (Ahmed, Zin & Majid, 2016; Ali & Haseeb, 2019; Haseeb, Abidin, Hye, & Hartani, 2018; Haseeb., 2019; Suryanto, Haseeb, & Hartani, 2018).

Meanwhile, for the independent variable FRACBAFTER, the results show a positive relationship with the abnormal returns as expected that is highly significant at the 1% level. This coefficient is expected to be positive as the buying trading activity by insiders conveys good news to the market and it is motivated by commitment and signalling effects (Brav & Gompers, 2003; Brau *et al*., 2005). A possible reason is that rationally, insiders would take advantage of the fall in the company's share price after the lockup expiration. Given the attractive valuation, it is an opportunity for insiders to continue accumulating the shares, hence increasing their holdings. This insider buying reflects the willingness of the insiders to become less diversified, providing a signal about the company's good future performance over the long term.

To further assess the robustness of the results, similar regressions are carried out using the market adjusted returns model for EMAS Index and KLCI Index as well as the market model using the EMAS Index. Results of the final models are shown in Table 2 below where all the

three variables remained significant. These findings reaffirm the results that have been reported in the market model using the KLCI Index.

Table 2: Multiple Regressions Final Models

	Market Model Emas Index		**Market Adjusted Returns KLCI Index**		**Market Adjusted Returns Emas Index**	
Variable	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value
INTERCEPT	0.0717	**0.023	0.0582	*0.076	0.0571	*0.084
FRACSAFTER	-0.4680	**0.047	-0.5145	**0.032	-0.4979	**0.038
FRACBAFTER	3.6503	***0.002	4.7621	***0.001	4.7032	***0.001
LNSIZE	-0.0042	***0.009	-0.0036	**0.034	-0.0035	**0.039
Number of observations		290		290		290
R-squared		0.0219		0.0315		0.0306
Adjusted R-squared		0.0116		0.0213		0.0204
F-statistics		6.4600		5.7000		5.5200
Significance of F-statistics		0.0003		0.0008		0.0011

***Significant at 1% level, **Significant at 5% level,*Significant at 10% level
Notes: The dependent variable is the 3-day cumulative abnormal returns (-1, +1).
The t-statistics and p-values are based on robust standard errors.

Furthermore, this study aims to reassess the three significant factors that influence the abnormal returns between the two regimes. By creating sub-samples of Regime #1 and Regime #2 in relation to abnormal returns, regressions are carried out. For Regime #1, the results indicate the F-value of 1.73, which is statistically significant (p-value = 0.0631). Thus, confirming the evidence in supporting the three factors (FRACSAFTER, FRACBAFTER and LNSIZE) that have provided significant impact on the abnormal returns as presented in Table 3 below.

Table 3: Multiple Regressions for Sub-Sample Regime #1

Variable	**Coefficient**	**t-statistics**	**p-value**
INTERCEPT	0.1998	1.79	*0.076
FRACSELL	0.0380	0.41	0.686
FRACBUY	0.0098	0.08	0.936
FRACSAFTER	-0.3048	-1.43	**0.035
FRACBAFTER	3.3417	3.33	***0.001
LNSIZE	-0.0382	-2.11	**0.036
MTBV	-0.0105	-1.34	0.180
OFFPRICE	0.0119	0.96	0.336

UNDER	0.0172	0.71	0.477
AUDITOR	0.0163	1.19	0.235
LNAGE	0.0432	0.77	0.442
TECH	-0.0357	-1.47	0.144
Number of observations		220	
R-squared		0.0910	
Adjusted R-squared		0.0383	
F-statistics		1.7300	
Significance of F-statistics		0.0631	

***Significant at 1% level, **Significant at 5% level,*Significant at 10% level

Alternately, regressions for sub-sample Regime #2 are carried out. It is observed that for Regime #2, none of the variables is significant. This further shows that the overall sample result is driven by Regime #1. The full model of sub-sample Regime #2 is shown in Table 4 below where the F-value is 0.40 which is statistically insignificant (p-value = 0.9569).

Table 4: Multiple Regressions for Sub-Sample Regime #2

Variable	**Coefficient**	**t-statistics**	**p-value**
INTERCEPT	0.1035	0.80	0.425
FRACSELL	0.1036	0.13	0.899
FRACBUY	-0.0621	-0.10	0.917
FRACSAFTER	-0.4209	-0.36	0.718
FRACBAFTER	-3.5035	-0.89	0.376
LNSIZE	-0.0012	-0.07	0.946
MTBV	0.0005	0.28	0.781
OFFPRICE	0.0071	0.62	0.536
UNDER	-0.0217	-1.53	0.132
AUDITOR	0.0091	0.61	0.543
LNAGE	-0.0055	-1.07	0.290
TECH	0.0006	0.03	0.974
Number of observations		70	
R-squared		0.0781	
Adjusted R-squared		0.1160	
F-statistics		0.4000	
Significance of F-statistics		0.9569	

***Significant at 1% level, **Significant at 5% level,*Significant at 10% level

Conclusion

The objective of the study is twofold. First, it examines the factors that influence the abnormal returns at lockup expiry in Malaysian IPOs. Second, it explores the two lockup regimes in relation to the abnormal returns. The evidence on the fraction of insider selling after the lockup expiry indicates a significant negative result could be related to insiders having some negative private information regarding the firm's prospect and diversification.

However, the study finds that firms with larger capitalization which are listed on the Main Market suffer larger value declines at lockup expiration. These firms are not engaging in staggered lockup, thus all the retained shares are allowed for disposal at unlock date compared to ACE Market firms. Meanwhile, the statistically significant positive result of fraction of insider buy after lockup expiration could indicate that the insiders are conveying good news to the market. Furthermore, this study explores the three significant factors influencing the abnormal returns between the two regimes. The results show that the overall sample is determined by Regime #1. Future studies could incorporate the three lockup regimes that have taken place in the Malaysian market by focusing on multi-staged lockups with the inclusion of latest IPOs sample. Further, it is suggested that research on IPO lockup in Malaysia could be extended to other related issues such as lockup provisions and survival of the IPO companies, lockup expiration in REIT IPOs, IPOs' long-run performance with lockup provisions, and impact of share price performance to recommendations by research houses surrounding the lockup expiration.

Acknowledgments

The research is funded by the Ministry of Higher Education, Malaysia under the Fundamental Research Grant Scheme (FRGS) code S/O 12908.

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