

# IPO Lockup Expiry, Market Reaction and Regulatory Change in Malaysian Market

**Shamsul Bahrain Mohamed-Arshad**

School of Economics, Finance and Banking  
Universiti Utara Malaysia  
Sintok, Malaysia

**Kamarun Nisham Taufil-Mohd**

School of Economics, Finance and Banking  
Universiti Utara Malaysia  
Sintok, Malaysia

**Nurwati Ashikkin Ahmad-Zaluki**

OYA Graduate School of Business  
Universiti Utara Malaysia  
Sintok, Malaysia

## Abstract

---

*This paper examines the market reaction and regulatory change at the expiration of 292 Malaysian initial public offerings (IPOs) during the period of 2003-2012 involving two lockup regimes. IPO lockup in Malaysia is mandatory as opposed to voluntary where it is negotiated between IPO firm and its underwriter. Using the market model and market adjusted return model of event study method, the result shows a significant negative abnormal return at the expiration of the lockup period. Hence, the study provides evidence of contradicting the semi-strong form of the Efficient Market Hypothesis (EMH). According to EMH, the expiration of the lockup period which is public knowledge should not be accompanied with a significant abnormal return. Furthermore, the study also shows the existence of higher abnormal trading volume at lockup expiry. The change in lockup regime however, does not have an impact in reducing the negative abnormal returns at lockup expiry.*

---

**Keywords:** efficient market, event study, initial public offering, lockup period

## I Introduction

Initial public offering (IPO) is where a firm's shares are offered to the public (institutional and retail investors) for the first time where details of the proposed offering are disclosed in a prospectus. The terms lockup, lock-in and share moratorium which are used in the US, the UK and Malaysia, respectively have similar meaning which is an important part of IPOs. Lockup prevents insiders (promoters as in the case of Malaysia) from selling all or some percentage of their shareholdings during post IPO periods. Furthermore, the requirements of lockup period vary from one country to another. There are two types of lockup agreements engaged by IPO firms; either mandatory or voluntary. A mandatory lockup is regulated by the regulators in the country, whereas a voluntary lockup is an agreement between IPO firms and their underwriters such as in the US and the UK.

In Malaysia, lockup is regulated by the Securities Commission (SC), both in terms of the percentage of shareholdings and the lockup period. Beginning to be effective on 3 May 1999 for certain IPOs, there have been regulatory changes on 1 May 2003 and 9 August 2009 with regards to lockup provisions. The latest two lockup regimes are involved in this study which is represented by Regime #1 and Regime #2, respectively. The present regulation appears to be most preventive where all IPO firms are subjected to lockup period whereby the entire shareholdings of the promoters are retained for six months compared to the previous regime of one year and forty five percent of shareholdings are locked up.

Meanwhile, the stock exchange of Malaysia which is known as the Bursa Malaysia encompasses of Main Market and ACE Market where multi-staged lockups are enforced merely on the ACE Market.

In connection with the semi-strong form of Efficient Market Hypothesis (EMH), the current price fully incorporates all publicly available information which coincides with the public knowledge of the lockup expiration dates at the time of the IPO. Hence, there should be no predictable share price movements at the expiry of the lockup periods. In line with this, Ofek and Richardson (2000), Brav and Gompers (2000), and Bradley et al. (2001) argue that since the date of the lockup expiration is known when the company goes public, this price impact should be captured by the market immediately after the IPO starts trading. Thus, on average, the abnormal return around the lockup release should be zero. However, previous studies either mandatory or voluntary lockup agreements on price impact have documented mixed evidence in terms of supporting or contradicting the EMH. Since Brav and Gompers (2003) plea for more research using the variation in global lockup requirements, studies from international equity markets have begun to surface.

In Malaysia, several studies are conducted in relations to lockup period. Zamani and Yong (2016) investigate the trading volume changes around lockup expiration, Che-Yahya et al. (2015) examine the impact of lockup provision on two IPO anomalies in the immediate aftermarket, Mohd-Rashid et al. (2014) explore the influence of lockup provisions on IPO initial returns, Che-Yahya et al. (2013) examine the influence of lockup provisions on flipping activity, and Wan-Hussin (2005) examines on the relationship between lockup and the underpricing of Malaysian IPOs. Hence, this study adds to the literature by investigating the market reaction and lockup regime changes at lockup expiry in Malaysian IPOs, focusing on the first stage lockup expiration.

The remainder of this paper is organized as follows. Section II reviews previous literature in relation to market reaction at lockup expiration in terms of on share price and trading volume. Section III describes the data and research methods designed for the study. Section IV discusses the empirical results, while Section V concludes the paper.

## **II Literature Review**

The existing literature on lockup periods can be divided into two main categories. The first category involves the motives behind lockup agreement usage (e.g. Brav & Gompers, 2003; Brau et al., 2005; Yung & Zender, 2010; Gao & Siddiqi, 2012) whereas the second category focuses on the price effect and trading volume surrounding the lockup expiration dates by the pioneer studies (e.g. Field & Hanka, 2001; Bradley et al., 2001; Espenlaub et al., 2001; Brav & Gompers, 2000; Ofek & Richardson, 2000). However, this study centers on the latter category which engages in market reaction to lockup period expiration. The founding work on lockup expirations is initiated in well-known studies in the US, conducted by Ofek and Richardson (2000), Brav and Gompers (2000 & 2003), Field and Hanka (2001), Bradley et al. (2001), Garfinkle and Bontas (2002), and Brau et al. (2004). Using IPOs sample sizes of 1053, 1948 & 2794, 1948, 2529, 775, and 3049 respectively, together with sample periods that covers from 1988-2000, these studies find statistically significant negative abnormal returns upon lockup expirations. In addition, other US studies are reported by Gao (2005) and Yung and Zender (2010). They also provide similar results of significant negative returns by using samples consisting of 2422 and 4025 IPOs, respectively with sample periods ranging from 1988 to 2006. All of these studies also show evidence of increasing in trading volume.

Meanwhile, studies outside the US such as the UK, Europe and Asia have reported mostly insignificant negative abnormal returns at the expiration of the lockup periods. While the US IPO lockup periods are mostly standardized at 180 days, the UK IPO lockup agreements have a great diversity. Furthermore, using a sample of 188 IPOs by UK-incorporated companies with clear-cut expiry dates for a period of 1992-1998, Espenlaub et al. (2001) observe statistically insignificant negative abnormal returns. However, Hogue (2011) finds significant negative abnormal returns using a sample of 831 UK IPOs during the period from 1999 to 2006. Moreover, Ahmad and Jelic (2014) examine the role of lockup agreements on the survival of 580 UK IPOs during the period 1990-2011 and find that the failure rates for IPOs with longer lockups are consistently lower than the failure rates for IPOs with shorter lockups regardless of delisting reasons. In Germany, Nowak (2004) finds significant negative abnormal returns using a sample of 142 IPOs during a period of 1997-1999. While there are no minimum lockup requirements in the UK, Goergen et al. (2006) find that most of the companies in other European market imposed a minimum lockup period of one year (e.g. Milan and Amsterdam), French IPO firms have a choice of lockup length and percentage of shares locked, whereas firms in Germany can elect the lockup length.

Moreover, Goergen et al. (2006) show insignificant negative abnormal returns for both France and Germany using 268 and 138 IPOs, respectively for a period ranging from 1996 to 2000. Using 167 Italian IPOs for a period from 1999 to 2008, Boreiko and Lombardo (2013) also do not find any significant abnormal returns, while indicating that the voluntary lockup clauses in Italian IPO are extremely versatile and complicated. However, studies by Novak (2004) and Boreiko and Lombardo (2013) who also examine the trading volume indicate the existence of higher trading volume.

In Asia, there are several studies conducted in relation to IPO lockup expiration on share prices as well as trading volume that are engaging in mandatory lockup requirements as imposed by the regulators in each country. Using 127 Taiwanese IPOs during the period from 1995 to 1999, Chen et al. (2005) find insignificant negative abnormal returns at lockup expiry. In Hong Kong, Goergen et al. (2010) also find insignificant change in share price using a sample of 272 IPOs between 1999 and 2005. Moreover, these studies also show the increased in trading volume. However, Mahajan and Singh (2011) who examine 165 lockup period expirations in India show both insignificant negative abnormal returns and trading volume for the period 2003-2009. Zamani and Yong (2016) examine 379 Malaysian IPOs for the period 2001-2011 and observe a positive abnormal trading volume at the expiration of lockup period. In other countries like Canada, Kryzanowski and Liang (2008) examine 97 IPO firms for the period 1997-2005 while in MENA region, Hakim et al. (2012) observe 60 IPOs during the period 1999 to 2008. Both studies provide mixed evidence where significant negative abnormal returns are reported only in MENA region. Overall, the impact of lockup periods expiration on share prices varies among countries because each country has its own unique lockup provisions. The presence of statistically significant negative abnormal returns contradicts the semi-strong form of the efficient market hypothesis. Furthermore, those studies who also examine the trading volume mostly are accompanied by higher trading volume.

### III Data and Methodology

The data used in this study are those firms listed on Bursa Malaysia between 1 May 2003 and 31 December 2012. 1 May 2003 is chosen as an initial period since it represents the first regulatory change in relation to lockup period after it is made compulsory on 3 May 1999. Both databases of Bursa Malaysia website and DataStream are used as data sources. In addition, several data conditions are imposed in order to include in the final sample; an offering involving new ordinary shares only, the firms are subjected to lockup provisions and remained listed throughout the expiration of the lockup period, and must be incorporated in Malaysia. Furthermore, firms listed under Finance, Trust, REITs, and Closed-End Funds sectors are excluded due to different statutory requirements in preparing firms' annual reports. After imposing these selection criteria, only 292 IPOs made up the final sample of which 222 IPOs (76%) fall under the first regime whereas the remaining IPOs of 70 (24%) represent the second regime.

To examine the share price reaction to lockup expiration, event study method is employed. The market model as stated in equation (1):

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \tag{1}$$

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),  $\alpha_i$  and  $\beta_i$  are the intercept and the slope parameters for firm  $i$ , and  $\varepsilon_{it}$  is the error term. Meanwhile, the market-adjusted returns model is stated in equation (2):

$$AR_{it} = R_{it} - R_{mt} \tag{2}$$

To examine the abnormal trading volume, method used in Field and Hanka (2001) is employed. Abnormal daily trading volume is measured relative to each firm's pre-unlock mean daily trading volume over days -60 to -11 as shown in equation (3):

$$Abnormal\ Volume\ \omega_{i,T} = \frac{V_{i,T}}{\frac{1}{50} \sum_{t=-60}^{-11} V_{i,t}} - 1 \tag{3}$$

where  $V_{i,T}$  is the trading volume (from DataStream) for firm  $i$  on day  $T$ . The ratio of daily volume to its mean which is obtained earlier are then subtracted by one and averaged across firms to get an estimate of abnormal volume  $AV_{i,T}$  across each day surrounding the unlock day.

#### IV Results and Discussion

Table 1 presents the average abnormal returns (AARs) and cumulative average abnormal returns (CAARs) surrounding the lockup expiration over 21-day event window.

**Table 1: AARs and CAARs using Market Model and Market Adjusted Returns Model**

Event Day	Market Model (MM)			Market Adjusted Returns (MAR)		
	AAR (%)	p-value	CAAR (%)	AAR (%)	p-value	CAAR (%)
-10	-0.22	0.2931	-0.22	-0.32	0.1069	-0.32
-9	0.41	**0.0475	0.19	0.37	0.2423	0.05
-8	-0.06	0.7640	0.13	-0.14	0.4887	-0.09
-7	-0.62	***0.0030	-0.49	-0.64	**0.0384	-0.73
-6	0.23	0.2707	-0.26	0.16	0.3859	-0.57
-5	0.12	0.5765	-0.14	0.07	0.6937	-0.50
-4	-0.22	0.2808	-0.36	-0.31	0.1527	-0.81
-3	-0.14	0.4893	-0.51	-0.23	0.3129	-1.04
-2	-0.14	0.5096	-0.65	-0.24	0.1777	-1.27
-1	-0.30	0.1493	-0.94	-0.39	*0.0765	-1.67
0	0.43	**0.0376	-0.51	0.40	0.1951	-1.26
1	-0.59	***0.0048	-1.10	-0.67	**0.0411	-1.93
2	-0.21	0.3147	-1.31	-0.30	0.2389	-2.23
3	-0.16	0.4406	-1.47	-0.22	0.4233	-2.45
4	0.21	0.3217	-1.26	0.15	0.5867	-2.30
5	-0.04	0.8492	-1.30	-0.17	0.4866	-2.47
6	0.25	0.2357	-1.05	0.10	0.6384	-2.37
7	-0.31	0.1396	-1.36	-0.37	*0.0904	-2.74
8	-0.01	0.9540	-1.37	-0.10	0.6732	-2.84
9	0.19	0.3670	-1.19	0.05	0.7872	-2.79
10	0.00	0.9905	-1.19	-0.17	0.4446	-2.96

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

The daily average abnormal returns for market model are significantly negative at 1% level on day -7 and day +1 with returns of -0.62% and -0.59%, respectively. However, on day -9 and day 0 the returns are significantly positive at 5% level with returns of 0.41% and 0.43%, respectively. Meanwhile, for the closer period surrounding the unlock day, the AARs are negative on day -4 through day +3, except on day 0. The negative returns range from -0.14% on days -3 and -2 to -0.59% on day -1. Table 1 also tabulates the cumulative average abnormal returns (CAARs) around the expiration of the lockup. Virtually, CAARs are found to be negative and appear to be quite small from day -7 to day -4. However, from day -3 to day +10, the cumulative returns are larger where it peaks at -1.47% on day +3. For market adjusted returns model (MAR), results are qualitatively the same for AARs on day -7 and day +1 but significantly negative at 5% level. However, for day -1 and day +7, abnormal returns are significantly negative at 10% level which does not occur when using the market model. Meanwhile, the results for CAARs are qualitatively similar from day -7 through day +10 where negative returns are observed. In line with the market model, larger cumulative returns can be seen from day -3 to day +10 where its highest is at -2.96% on day +10.

Furthermore, the cumulative average abnormal returns over the 21 event days are illustrated graphically in Figure 1. Steeper fall can be observed from day -4 to day -1, and day +1 to day +3. In general, both models show similar results and trends with MAR having slightly greater negative returns. The reason for the slightly different pattern of results between these two models may be due to the beta which is taken one in the case of market adjusted model. Similar results are reported by Mahajan and Singh (2011) when employing these two models. Hence, further discussions pertaining to the results of this study are presented based on the market model employed.

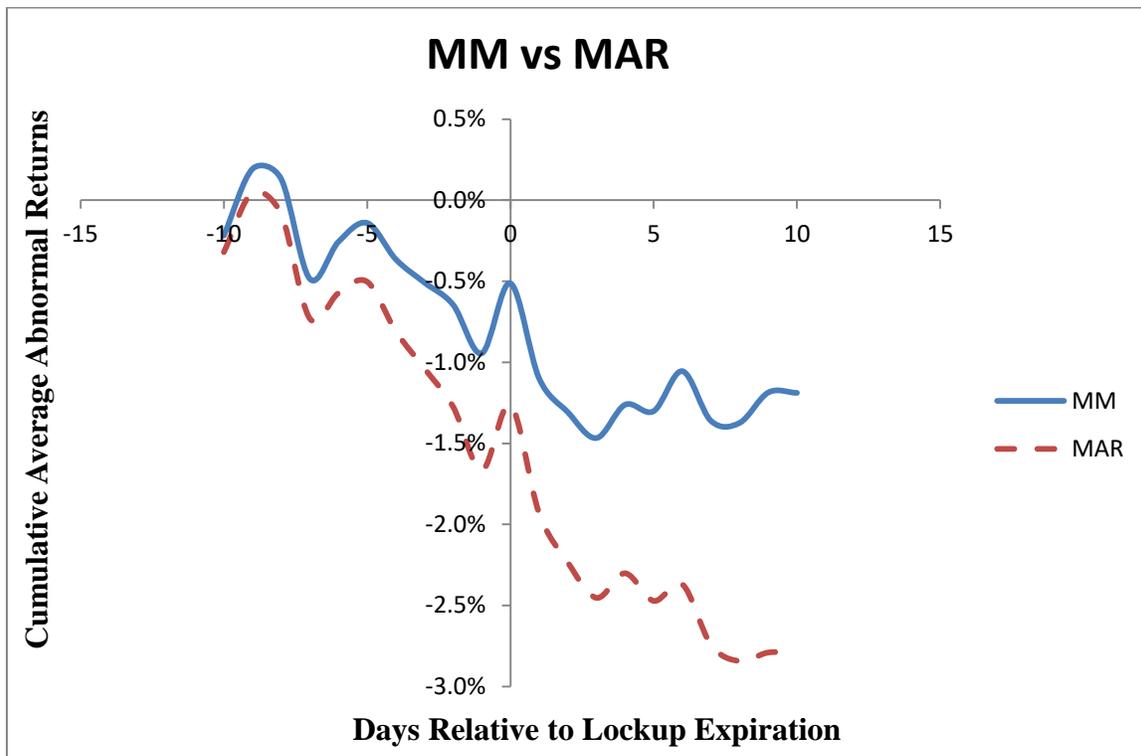


Figure 1: CAARs over 21 event days

Meanwhile, Table 2 tabulates the cumulative average abnormal returns for several event windows. Different results are observed for CAARs around the expiration date. Significant negative returns are recorded at smaller windows surrounding the event date for windows (-3, +3), (-2, +2) and (-1, +3). Only window (-3, +3) is significant at 5% level with return of -1.10%, whereas the other two windows are observed to be significant at 10% level with returns of -0.80% and -0.82% for windows (-2, +2) and (-1, +3) respectively. For the five-day event window (-2, +2), the negative abnormal return is in line with the findings of Bradley et al. (2001) with returns of -1.61%, being significant at 1% level. For the other 5-day event window (-1, +3), the significant return of -0.82% corresponds with Ofek and Richardson (2000) five-day cumulative abnormal return for window (-4, 0) amounting to -2.03%, which is significant at 1% level. Furthermore, event window of seven-day (-3, +3) is significantly negative at 5% level with CAAR of -1.10%. The significant negative return is corresponding with the CAAR of -1.9% as reported by Field and Hanka (2001) for seven-day window (-5, +1) with significant level of 1%.

Table 2: Cumulative average abnormal returns for various event windows

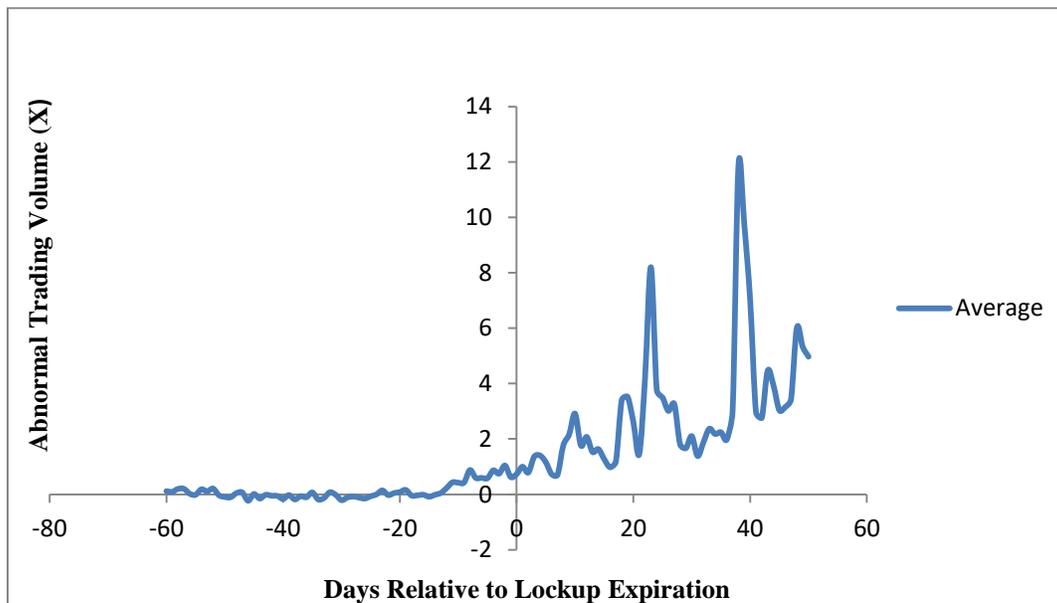
Event Window	CAAR (%)	p-value
(-10,+10)	-1.19	0.2117
(-10,-1)	-0.94	0.1504
(-5,+5)	-1.04	0.1294
(-5,-1)	-0.69	0.1384
(-3,+3)	-1.10	**0.0448
(-3,-1)	-0.58	0.1069
(-2,+2)	-0.80	*0.0853
(-1,+1)	-0.45	0.2077
(-1,+3)	-0.82	*0.0766
(-1,+5)	-0.66	0.2326
(-1,+10)	-0.54	0.4499

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

From the results, this study finds statistically significant negative abnormal returns at lockup expiry that is in line with the US studies. However, both the negative abnormal returns and the significant levels are slightly lower for this study with mandatory lockup provisions compared to those reported in the US through voluntary lockup agreements. In line with this, Hakim et al. (2012) report that prices decline at lockup expiry for mandatory lockup in the MENA region much the same as in the US. Consistent with the study undertaken by Nowak (2004), the drop in share price is significantly larger for the expiration of voluntary lockup agreements than for mandatory provision of lockup period. The existence of the significant negative abnormal returns surrounding the lockup expiration further indicates the contradicting evidence of the EMH.

Moreover, the event-day abnormal trading volume is performed in order to examine whether the share price changes at the expiration of the lockup are associated with greater abnormal volume. The tendency of insiders to dispose shares at lockup expiry permits for the investigation of the behavior of trading volume whether it is abnormally high surrounding the event. The results are illustrated in Figure 2 for day -60 through day +50.

From the plotted graph, almost all event days prior to lockup expiration have lower abnormal trading volume, except for those from day -10 towards the unlock day whereby the abnormal volume starts to increase and show an upward trend, peaking on day -2. The abnormal volume remains positive and higher from day -10 throughout 50 days after the unlock date. The results show that abnormal trading volume does not revert back to zero, indicating the trading volume has permanently changed after the expiration of the lockup period. During this period, insiders are free to dispose their restricted shares and the heavy volume might due to the trades originated from insiders. The positive abnormal trading volume corresponds with the evidence from the US studies (e.g., Field & Hanka, 2001; Garfinkle et al., 2002; Brav & Gompers, 2003) of increasing trading volume at the expiration of lockup period. While outside the US, studies by Boreiko and Lombardo (2013), Goergen et al. (2010), Chen et al. (2005) and Novak (2004) also report increasing in trading volume in Italy, Hong Kong, Taiwan and Germany, respectively. Thus, this study shows the existence of abnormal trading volume at lockup expiration.



**Figure 2: Abnormal trading volume around the unlock day**

As mentioned earlier, there are two lockup regimes involve in this study. Regime #1 represents the lockup provision with effect from 1 May 2003 whereas Regime #2 belongs to the present lockup provision beginning from 3 August 2009, arising from the new framework in Malaysian capital market. Beside the new structure, there is also a significant change in the regulatory approach with regards to lockup period by the Securities Commission. Therefore, the impact of these regulation changes is further explored on the abnormal returns. To provide further insight, statistical significance of the abnormal returns between these two regimes at lockup expiration needs to be examined. Initially, the independent samples t-test with unequal variances is conducted and this is followed by the nonparametric test for independent samples whereby various event windows are used for both tests. Results of the statistical tests are tabulated in Table 3.

**Table 3: Independent samples t-test and nonparametric test**

Event Window	Regime #1 (%)	Regime #2 (%)	p-value (Mean Difference)	p-value (Mann-Whitney)
(-10,+10)	-4.343	-12.052	0.505	0.731
(-10,-1)	-4.199	-0.343	0.234	0.629
(-5,+5)	-4.250	-0.598	0.292	0.402
(-5,-1)	-3.920	-0.159	0.235	0.641
(-3,+3)	-4.210	-0.968	0.337	0.774
(-3,-1)	-3.709	-0.376	0.292	0.620
(-2,+2)	-3.704	-1.305	0.466	0.279
(-1,+1)	-0.313	-0.900	0.507	0.196
(-1,+3)	-0.693	-1.232	0.659	0.694
(-1, 5)	-0.522	-1.079	0.687	0.239
(-1,+10)	-0.336	-12.348	0.284	0.294

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

From Table 3, p-value for mean difference shows statistical insignificant for all event windows of Regime #1 and Regime #2. Similarly, no statistical significance is found for p-value in the Mann-Whitney nonparametric test. The results thus, indicate that there is insignificant difference in cumulative abnormal returns at the lockup expiration between Regime #1 and Regime #2. As such, the results prove that the change in lockup regulation does not have an impact in reducing the abnormal returns at the lockup expiration.

## V Conclusion

This study examines the market reaction and regulatory change at the expiration of Malaysian IPO lockups for the period from May 2003 to December 2012. The findings are consistent with previous evidence from the US, indicating that the Malaysian equity market is an inefficient market in relation to the semi-strong form of EMH. It is attributed to the unique features of mandatory lockup provisions where the regulation is imposed on both the percentage of shares that are subjected to a lockup and the lockup length. Hence, IPO firms are not allowed to shorten or prolonged the length of the lockup period. Similarly, the result also shows an increase in trading volume at the unlock date which is consistent with the extant literature. Since this study only focuses on the first stage of lockup expiration, there is insignificant difference in cumulative abnormal returns at the lockup expiry between Regime #1 and Regime #2. Thus, the change in lockup regime does not have an impact in reducing the negative abnormal returns. Future study can be extended by including the multiple lockup expiration that is compulsory in the ACE Market. In addition, the determinant factors that influence the abnormal returns and the impact of share price performance to recommendations by research houses surrounding the lockup expiration should also be explored.

## Acknowledgement

The research is made possible from the funding of the Ministry of Higher Education, Malaysia under the Fundamental Research Grant Scheme and supported by the Research and Innovation Management Center of Universiti Utara Malaysia.

## References

- Ahmad, W., & Jelic, R. (2014). Lockup agreements and survival of UK IPOs. *Journal of Business Finance & Accounting*, 41 (5) & (6), 717-742.
- Bradley, D., Jordan, B., Roten, I., & Yi, H. (2001). Venture capital and IPO lockup expiration: An empirical analysis. *Journal of Financial Research*, 24(4), 465-493.
- Boreiko, D., & Lombardo, S. (2013). Lockup clauses in Italian IPOs. *Applied Financial Economics*, 23(3), 221-232.
- Brau, J. C., Carter, D. A., Christophe, S. E., & Key, K. G. (2004). Market reaction to the expiration of IPO lockup provisions. *Managerial Finance*, 30(1), 75-91.

- Brav, A., & Gompers, P. A. (2003). The role of lockups in initial public offerings. *Review of Financial Studies*, 16(1), 1-29.
- Brav, A., & Gompers, P. A. (2000). Insider trading subsequent to initial public offerings: Evidence from expirations of lock-up provisions. *Unpublished Working Paper, Duke University, Durham, North Carolina*.
- Che-Yahya, N., Abdul-Rahim, R., & Yong, O. (2013). Influence of lockup provisions on flipping activity of Malaysian IPOs. *Journal of Economics and Finance Review*, 3(4), 11-24.
- Che-Yahya, N., Abdul-Rahim, R., & Yong, O. (2015). Impact of lockup provision on two IPO anomalies in the immediate aftermarket. *Capital Markets Review*, 23, 25-39.
- Chen, D. H., Chen, C. D., Blenman, L. P., & Bin F. S. (2005). The effect of IPO lockup agreements on stock prices: An empirical analysis on the Taiwan Stock Exchange. *Global Business and Finance Review*, 10, 39-56.
- Chen, H., Chen, S., & Huang, C. (2012). Why do insiders sell shares following IPO lockups? *Financial Management*, 813-847.
- Espenlaub, S., Goergen, M., & Khurshed, A. (2001). IPO lock-in agreements in the UK. *Journal of Business Finance & Accounting*, 28(9&10), 1235-1278.
- Field, L. C., & Hanka, G. (2001). The expiration of IPO share lockups. *Journal of Finance*, 56(2), 471-500.
- Gao, Y. (2005). Trading and the information environment of IPO stocks around lockup expiration: Evidence from intraday data. *Social Science Research Network*, #686566, 1-62.
- Gao, F., & Siddiqi, M. A. (2012). The rationale for IPO lockup agreements: Agency or Signaling. *Review of Pasific Basin Financial Markets and Policies*, 15(3), 1250013(1) – 1250013 (18).
- Garfinkle, N., Malkiel, B., & Bontas, C. (2002). Effect of underpricing and lock-up provisions in IPOs. *Journal of Portfolio Management*, 28(3), 50-58.
- Goergen, M., Renneboog, L., & Khurshed, A. (2006). Explaining the diversity in shareholder lockup agreements. *Journal of Financial Intermediation*, 15, 254-280.
- Goergen, M., Mazouz, M., & Yin, S. (2010). Price, volume and spread effects associated with the expiry of lock-in agreements: Evidence from Hong Kong IPO market. *Pasific-Basin Finance Journal*, 18, 442-459.
- Hakim, T., Lypny, G., & Bhabra, H. S. (2012). IPO lockup expiration in the Middle East and North Africa. *Journal of Multinational Financial Management*, 22, 252-262.
- Hoque, H. (2011). The choice and role of lockups in IPOs: Evidence from heterogeneous lockup agreements. *Journal of Financial Markets, Institutions & Instruments*, 20 (5), 191-220.
- Kryzanowski, L., & Liang, S. (2008). Canadian IPO Share Releases: lockup designs, transparency and market behavior. *Journal of Private Equity*, 11 (2), 73-89.
- Mahajan, R., & Singh, B. (2011). Impact of lock-in period expiration on share prices and volume: An empirical study. *Management and Labour Studies*, 36 (2), 155-174.
- Mohd-Rashid, R., Abdul-Rahim, R., & Yong, O. (2014). The influence of lock-up provisions on IPO returns: Evidence from emerging market. *Economics Systems*, 38, 487-501.
- Novak, E. (2004). The expiration of mandatory and voluntary lock-up provisions – empirical evidence from Germany's Neuer Market. *Advances in Financial Economics*, 10, 181-200.
- Ofek, E., & Richardson, M. (2000). The IPO lockup period: Implications for market Efficiency and downward sloping demand curves. *Working paper series, New York University, Leonard N. Stern School of Business*.
- Wan-Hussin, W. N. (2005). The effects of owners' participation and lockup on IPO underpricing in Malaysia. *Asian Academy of Management Journal*, 10(1), 19-36.
- Yung, C., & Zender, J. F. (2010). Moral hazard, asymmetric information and IPO lockups. *Journal of Corporate Finance*, 16, 320-332.
- Zameni, A., Yong, O. (2016). Lock-up expiry and trading volume behaviour of Malaysian Initial Public Offering's. *International Journal of Economics and Financial Issues* 6(S3), 12-21.