

The copyright © of this thesis belongs to its rightful author and/or other copyright owner. Copies can be accessed and downloaded for non-commercial or learning purposes without any charge and permission. The thesis cannot be reproduced or quoted as a whole without the permission from its rightful owner. No alteration or changes in format is allowed without permission from its rightful owner.



**IMPACT OF IPO LOCKUP EXPIRATIONS AND ITS DETERMINANTS:
MALAYSIAN EVIDENCE**



By

SHAMSUL BAHRAIN MOHAMED ARSHAD

Dissertation Submitted to
Othman Yeop Abdullah Graduate School of Business,
Universiti Utara Malaysia,
in Partial Fulfilment of the Requirement for the Doctor of Business Administration



OTHMAN YEOP ABDULLAH GRADUATE SCHOOL OF BUSINESS
UNIVERSITI UTARA MALAYSIA

PERAKUAN KERJA TESIS / DISERTASI
(Certification of thesis / dissertation)

Kami, yang bertandatangan, memperakukan bahawa
(We, the undersigned, certify that)

SHAMSUL BAHRAIN B. MOHAMED ARSHAD

calon untuk Ijazah

DOCTOR OF BUSINESS ADMINISTRATION

(candidate for the degree of)

telah mengemukakan tesis / disertasi yang bertajuk:

(has presented his/her thesis / dissertation of the following title):

IMPACT OF IPO LOCKUP EXPIRATIONS AND ITS DETERMINANTS:
MALAYSIAN EVIDENCE

seperti yang tercatat di muka surat tajuk dan kulit tesis / disertasi.
(as it appears on the title page and front cover of the thesis / dissertation).

Bahawa tesis/disertasi tersebut boleh diterima dari segi bentuk serta kandungan dan meliputi bidang ilmu dengan memuaskan, sebagaimana yang ditunjukkan oleh calon dalam ujian lisan yang diadakan pada:

03 Mac 2016.

(That the said thesis/dissertation is acceptable in form and content and displays a satisfactory knowledge of the field of study as demonstrated by the candidate through an oral examination held on:
03 March 2016).

Pengerusi Viva
(Chairman for Viva)

Prof. Dr. Wan Nordin Wan Hussin

Tandatangan
(Signature)

Pemeriksa Luar
(External Examiner)

Prof. Dr. Anuar Md. Nassir

Tandatangan
(Signature)

Pemeriksa Luar
(Internal Examiner)

Assoc. Prof. Dr. Zamri bin Ahmad

Tandatangan
(Signature)

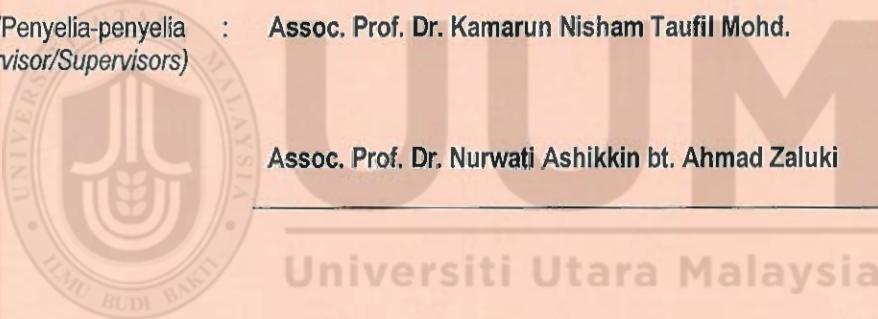
Tarikh: 03 March 2016
(Date)

Nama Pelajar
(Name of Student) : **Shamsul Bahrain b. Mohamed Arshad**

Tajuk Tesis / Disertasi
(Title of the Thesis / Dissertation) : **Impact of IPO Lockup Expirations and ITS Determinants:
Malaysian Evidence**

Program Pengajian
(Programme of Study) : **Doctor of Business Administration**

Nama Penyelia/Penyelia-penyaelia
(Name of Supervisor/Supervisors) : **Assoc. Prof. Dr. Kamarun Nisham Taufil Mohd.**



Assoc. Prof. Dr. Nurwaati Ashikkin bt. Ahmad Zaluki

Tandatangan
(Signature)

PERMISSION TO USE

In presenting this dissertation in partial fulfilment of the requirements for a Post Graduate degree from Universiti Utara Malaysia (UUM), I agree that the Library of this university may make it freely available for inspection. I further agree that permission for the copying of this dissertation in any manner, in whole or in part, for scholarly purposes may be granted by my supervisor(s) or in their absence, by the Dean of Othman Yeop Abdullah Graduate School of Business where I did my dissertation. It is understood that any copying or publication or use of this dissertation or parts of it for financial gain shall not be allowed without my written permission. It is also understood that due recognition shall be given to me and to the UUM in any scholarly use which may be made of any material in my dissertation.

Requests for permission to copy or to make other use of materials in this dissertation in whole or in part, should be addressed to:



ABSTRACT

This dissertation examines the impact of lockup expiration and its determinants in Malaysia using 292 IPOs during the period 2003-2012. Impact of lockup on abnormal returns, impact of lockup on abnormal trading volume, impact of regulatory changes on abnormal returns, and determinants of share price behavior as a proxy of abnormal returns at lockup expiration are the four study objectives. The research hypotheses are tested using event study method and multiple regressions. Results show the existence of significant negative abnormal returns surrounding the date of lockup expirations, hence contradicting evidence of the efficient market hypothesis. Further, this study also finds the existence of abnormal trading volumes. Both of these results are in line with those of the US studies. Meanwhile, there are two lockup regimes involved in this study arising from regulatory change that takes effect on 1 May 2003 and 3 August 2009, referred to as Regime #1 and Regime #2, respectively. However, the results show that the change in lockup regulation does not have an impact on the abnormal returns at lockup expiration. Furthermore, the variables identified in the regression analysis are lockup regime, fractions of insiders buying and selling before and after expiration, company size and age, offer price, underwriter, auditor, and technology company. Results show that company size, fraction of insider selling and buying after lockup expiration are the significant factors in relations to abnormal returns which is driven by Regime #1. Implications of the study to SC are improving the present regulation by imposing the minimum requirement and allowing for longer lockup period to be determined between underwriter and IPO issuer, to Bursa Malaysia in posting the upcoming lockup expiration dates on their website to alert investors, and to research houses by starting coverage on earnings forecast and providing recommendations surrounding lockup expiration.

Keywords: IPO, Lockup Provisions, Event Study, Market Efficiency, Insider Trading

ABSTRAK

Disertasi ini mengkaji impak dan penentu bagi penamatan tempoh sekatan jualan di Malaysia menggunakan 292 IPO bagi tempoh 2003-2012. Impak sekatan jualan terhadap pulangan tidak normal, impak sekatan jualan terhadap jumlah dagangan yang tidak normal, impak perubahan kawal selia terhadap pulangan tidak normal, dan penentu gelagat harga saham sebagai proksi pulangan tidak normal pada tamat tempoh sekatan jualan adalah empat objektif kajian ini. Hipotesis kajian diuji dengan menggunakan kaedah kajian peristiwa dan regresi berganda. Keputusan kajian yang menunjukkan kewujudan signifikan pulangan negatif tidak normal pada tarikh tamat tempoh sekatan jualan, memberikan bukti yang bercanggah dengan hipotesis pasaran cekap. Di samping itu, kajian ini juga menunjukkan kewujudan jumlah dagangan yang tidak normal. Kedua-dua dapatan ini selaras dengan kajian-kajian yang telah di jalankan di Amerika Syarikat. Sementara itu, terdapat dua rejim sekatan jualan terlibat dalam kajian ini berikutnya perubahan peraturan kawal selia berkuat kuasa pada 1 Mei 2003 dan 3 Ogos 2009, dikenali sebagai Rejim #1 dan Rejim #2. Namun, dapatan kajian menunjukkan bahawa perubahan dalam peraturan sekatan jualan tidak memberi kesan terhadap pulangan tidak normal ketika tamat tempoh sekatan jualan. Selanjutnya, pemboleh ubah yang dikenal pasti dalam analisis regresi adalah rejim sekatan jualan, bahagian dagangan dalaman yang berjual-beli sebelum dan selepas tamat tempoh sekatan jualan, saiz dan usia syarikat, harga tawaran, penaja jamin, juruaudit, dan syarikat teknologi. Hasil dapatan menunjukkan bahawa saiz syarikat, bahagian jualan dagangan dalaman dan bahagian belian dagangan dalaman selepas tamat tempoh sekatan jualan merupakan faktor-faktor signifikan dalam hubungan dengan pulangan tidak normal yang didorong oleh Rejim #1. Implikasi kajian terhadap SC adalah penambahbaikan pengawalan semasa, iaitu dengan mengenakan sekatan minimum dan membolehkan tempoh sekatan jualan yang lebih panjang ditentukan antara penaja jamin dan penerbit IPO; terhadap Bursa Malaysia, adalah penyiaran tarikh-tarikh penamatan sekatan jualan akan datang di laman sesawang mereka untuk perhatian pelabur; dan terhadap firma penyelidikan, adalah penyediaan liputan awal berkaitan unjuran pendapatan dan cadangan sekitar tamat tempoh sukanan jualan.

Kata kunci: IPO, Peruntukan Sekatan Jualan, Kajian Peristiwa, Pasaran Cekap, Dagangan Dalaman

ACKNOWLEDGMENTS

First and foremost, I would like to thank both my supervisors, Associate Professor Dr. Kamarun Nisham Taufil Mohd and Associate Professor Dr. Nurwati Ashikkin Ahmad Zaluki for their continuous help, guidance, support, suggestions and inspiration on this dissertation. Therefore, again I would like to register my utmost appreciation for their valuable contribution, commitment and dedication for their role as supervisors.

Upon completion of this dissertation, I would like to express my gratitude to my main sponsor, Ministry of Higher Education, Malaysia and to my employer, Universiti Utara Malaysia for the opportunities and financial grants awarded to me to pursue this work.

It is my most pleasure to dedicate this dissertation to both my late parents, and family members for their constant prayers, support and encouragement, physically and emotionally.

Finally, I wish to thank all relatives and friends who contributed, both direct and indirectly, to the realization of this dissertation.

TABLE OF CONTENT

	Page
PERMISSION TO USE.....	i
ABSTRACT	ii
ABSTRAK	iii
ACKNOWLEDGMENTS.....	iv
TABLE OF CONTENTS	v
LIST OF TABLES.....	ix
LIST OF FIGURES	x
LIST OF APPENDICES	xi
LIST OF ABBREVIATIONS	xii
CHAPTER ONE	1
INTRODUCTION	1
1.1 Background	1
1.2 Problem Statement	5
1.3 Research Questions	14
1.4 Research Objectives	15
1.5 Scope of the Study.....	15
1.6 Significance of the Study	16
1.7 Structure of the Thesis.....	18
CHAPTER TWO	20
LITERATURE REVIEW	20
2.1 Introduction	20

2.2	Regulatory Entities	21
2.2.1	Securities Commission Malaysia (SC)	21
2.2.2	Bursa Malaysia Berhad	23
2.3	IPO Share Lockups in Malaysia.....	26
2.4	Related Theory on IPO Lockups	30
2.4.1	Efficient Market Hypothesis (EMH)	31
2.4.2	Signaling Hypothesis Based on Information Asymmetry	32
2.4.3	Commitment Hypothesis Based on Agency Theory.....	33
2.5	Related Empirical Studies on IPO Lockups.....	34
2.5.1	Market Reaction to Expiration of Lockup Period.....	34
2.5.2	Determinants of Market Reaction to Lockup Expiration.....	55
2.6	Chapter Summary.....	60
	CHAPTER THREE	63
	RESEARCH METHODS	63
3.1	Introduction	63
3.2	Data Sources and Sample Description	63
3.2.1	Data Collection Process	65
3.2.2	Sample of the Study	67
3.3	Variables and Hypotheses	69
3.3.1	Market reaction to lockup expiration	69
3.3.2	Factors influencing the level of abnormal returns	71
3.4	Research Design and Methods	84
3.4.1	Event Study	84

3.4.2 Event Study Research Design	85
3.4.3 Models for Measuring Normal Return.....	87
3.4.4 Measure of Abnormal Returns	90
3.4.5 Measure of Abnormal Volume	94
3.4.6 Cross Sectional Multiple Regression.....	95
3.5 Chapter Summary.....	98
CHAPTER FOUR.....	100
EMPIRICAL FINDINGS AND DISCUSSIONS	100
4.1 Introduction	100
4.2 Sample of the Study	101
4.3 Event-Day Abnormal Returns.....	102
4.4 Main Market versus ACE Market Abnormal Returns	108
4.5 Event-Day Abnormal Returns for Lockup Regimes	110
4.6 Event-Day Abnormal Trading Volume.....	111
4.7 Descriptive Statistics	114
4.8 Multiple Regression Analysis Findings	118
4.9 Chapter Summary.....	135
CHAPTER FIVE	138
CONCLUSION AND RECOMMENDATIONS	138
5.1 Introduction	138
5.2 Overview of the Study.....	138
5.3 Summary of Main Findings	141
5.3.1 Findings of Market Reaction at Lockup Expiration	141

5.3.2	Findings Based on Multiple Regression Analysis	144
5.4	Contribution of the Study	146
5.5	Limitations of the Study	148
5.6	Recommendations for Future Study.....	149
REFERENCES	153
APPENDICES	161



UUM
Universiti Utara Malaysia

LIST OF TABLES

Table		Page
Table 2.1	Listing statistics of new companies on Bursa Malaysia	26
Table 2.2	Summary of selected prior studies on market reaction to lockup expiration	45
Table 2.3	Summary of selected past studies on market reaction to lockup expiration outside the US	54
Table 2.4	Summary of previous studies on determinants of market reaction at lockup expiration	59
Table 3.1	Sample selection of 292 IPOs listed from 2003 to 2012	68
Table 3.2	Steps in event study analysis	87
Table 3.3	Hypotheses and expected sign in relations to abnormal returns	98
Table 4.1	IPOs lockup sample from 1 May 2003 to 31 December 2012	101
Table 4.2	AARs and CAARs using Market Model and Market Adjusted Returns Model	103
Table 4.3	Cumulative Average Abnormal Returns for various event windows	106
Table 4.4	Independent sample t-test and nonparametric test for Main Market and ACE Market	109
Table 4.5	Independent sample t-test and nonparametric test for lockup regimes	110
Table 4.6	Independent variables descriptive statistics	114
Table 4.7	Correlation matrix among variables and multicollinearity test	117
Table 4.8	Multiple regressions for full model	119
Table 4.9	Multiple regressions for full and final model	131
Table 4.10	Multiple regressions for final models	133
Table 4.11	Multivariate regression sub-sample full model for Regime #1	134
Table 4.12	Multivariate regression sub-sample final model for Regime #1	134
Table 4.13	Multivariate regression sub-sample full model for Regime #2	135

LIST OF FIGURES

Figure		Page
Figure 2.1:	Summary of the relevant listing criteria	25
Figure 3.1	Research framework: determinants of abnormal returns	97
Figure 4.1	CAARs over 21 event days for market model and market adjusted return model	105
Figure 4.2	Abnormal trading volume around the lockup expiration day	113



LIST OF APPENDICES

	Page
APPENDIX A AARs and CAARs using market model and market adjusted returns model based on Emas Index	161
APPENDIX B CAARs over 21 event days for market model and market adjusted return model using KLCI and Emas Index	162



LIST OF ABBREVIATIONS

ACE	Access, Certain, Efficiency
AAR	Average Abnormal Return
CAR	Cumulative Abnormal Return
CAAR	Cumulative Average Abnormal Return
CMSA	Capital Market Services Act
IPC	Infrastructure Project Company
IPO	Initial Public Offering
KLCI	Kuala Lumpur Composite Index
KLSE	Kuala Lumpur Stock Exchange
MAR	Market adjusted returns model
MENA	Middle East and North Africa
MESDAQ	Malaysian Exchange of Securities Dealings and Automated Quotation
MM	Market model
SC	Securities Commission
SEBI	Securities and Exchange Board of India
SPAC	Special Purpose Acquisition Company
UK	United Kingdom
US	United States
VIF	Variance Inflation Factor

CHAPTER ONE

INTRODUCTION

1.1 Background

An initial public offering or IPO of equity is the event where a company's share is offered for sale the first time to the public. It is the process of the company's official transition from private to public status. Both the terms IPO and "going public" are being used interchangeably. In this route, companies create new shares, or an existing shareholder offers for sale a certain proportion of shares they owned, resulting in the changing of the ownership structure. These shares are first sold on the primary market, followed by the secondary market on the listing date or the debut on the stock exchange.

In Malaysia, the two common types of IPOs are the "public offer" and the "offer for sale". The former is related to new issue of shares whereas the latter involves the existing shares which have not been traded before by the existing shareholders. Some companies are also making a mixture of both the public offer and the offer for sale resulting in a "combination offering". In connection with the combination offering, the share sale is both partially from the issuing company and the existing shareholders. In terms of the absolute holdings, the existing shareholders are not affected in a public offer since new shares are being offered but their percentage of shareholdings in the company will be reduced. In contrast, under an offer for sale, both the absolute holdings and the

The contents of
the thesis is for
internal user
only

REFERENCES

- Aggarwal, R. K., Krigman, L., & Womack, K. L. (2002). Strategic IPO underpricing, information momentum, and lockup expiration selling. *Journal of Financial Economics*, 66, 105-137.
- Ahmad-Zaluki, N., Campbell, K., & Goodacre, A. (2007). The long run share price performance of Malaysian initial public offerings (IPOs). *Journal of Business Finance & Accounting*, 34(1 & 2), 78-110.
- Ahmad-Zaluki, N., Campbell, K., & Goodacre, A. (2011). Earnings management in Malaysian IPOs: The East Asian crisis, ownership control and post-IPO performance. *International Journal of Accounting*, 46(2), 111-137.
- Ahmad-Zaluki, N., & Lim, B. K. (2012). The Investment Performance of MESDAQ Market Initial Public Offerings (IPOs). *Asian Academy of Management Journal of Accounting and Finance*, 8(1), 1-23.
- Angenendt, P-P., Goergen, M., & Renneboog, L. (2005). Shareholder lock-in contracts: Share price and trading volume effects at the lock-in expiry. ECGI Working Paper 102/2005.
- Arthurs, J. D., Busenitz, L. W., Hoskisson, R. E., & Johnson, R. A. (2009). Signaling and initial public offerings: The use and impact of the lockup period. *Journal of Business Venturing*, 24, 360-372.
- Beatty, R., & Ritter, J. (1986). Investment banking, reputation, and the underpricing of initial public offerings. *Journal of Financial Economics*, 15, 213-232.

- Bessler, W., & Kurth, A. (2004). The performance of venture-backed IPOs in Germany: Exit strategies, lock-up periods, and bank ownership". Working Paper, Justus-Leibig-University Giessen.
- Binder, J.J. (1998). The event study methodology since 1969. *Review of Quantitative Finance and Accounting*, 11(2), 111-137.
- Black, B. S., & Gilson, R. J. (1998). Venture capital and the structure of the capital markets: Banks versus stock markets. *Journal of Financial Economics*, 47, 243-277.
- Boreiko, D., & Lombardo, S. (2013). Lockup clauses in Italian IPOs. *Applied Financial Economics*, 23(3), 221-232.
- 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.
- 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.
- Brau, J. C., & S. E. Fawcett. (2006). "Initial public offerings: An analysis of theory and practice". *Journal of Finance*, 61(1), 399-436.
- Brau, J. C., Lambson, V. E., & McQueen, G. (2005). "Lockups revisited". *Journal of Financial and Quantitative Analysis*, 40(3), 519-530.
- 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 27708, USA).

- Brown, S. J., & Warner, J. B. (1980). Measuring security price performance. *Journal of Financial Economics*, 8, 205-258.
- Brown, S. J., & Warner, J. B. (1985). Using daily stock return: The case of event studies. *Journal of Financial Economics*, 14, 3-31.
- Campbell, J. Y., Lo, A. W., & MacKinlay, A.C. (1997). *The econometrics of financial market*, Second edn, Princeton University Press, New Jersey.
- Che-Yahya, N., Abdul-Rahim, R., & Yong, O. (2013). Influence of lockup provision on flipping activity of Malaysian IPOs. *Journal of Economics and Finance Review*, 3(4), 11-24.
- 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 Taiwan Stock Exchange. *Global Business and Finance Review*, 10, 39-56.
- Chen, H-C., Chen, S-S., & Huang, C-W. (2012). Why do insiders sell shares following IPO lockup? *Financial Management*, 813-847.
- Chen, H-C., Fok, R. C. W., & Lu, C. (2011). An analysis of Lockups in REIT IPOs. *Journal of Real Estate Finance and Economics*, 43(3), 417-437.
- Chong, B. S., & Ho, K. W. (2007). Lockup and voluntary earnings forecast disclosure in IPOs. *Financial Management*, 36, 63-80.
- Chong, F., & Puah, C-H. (2009). The Malaysian IPO market: volume, initial returns and economic conditions. *International Review of Business Research Papers*, 5(5), 182-192.

- Corhay, A., Teo, S., & Rad, A. (2002). The long run performance of Malaysian initial public offerings (IPO): Value growth and effects. *Managerial Finance*, 28(2), 52-65.
- Courteau, L. (1995). Under-diversification and retention commitments in IPOs. *Journal of Financial and Quantitative Analysis*, 30, 487-517.
- Coutts, J. A., Mills, T.C., & Roberts, J. (1995). Misspecification of the market model: The implications for event studies. *Applied Economics Letters*, 2, 163-165.
- Dawson, S. D. (1987). Secondary stock market performance of initial public offers, Hong Kong, Singapore and Malaysia: 1978 to 1984. *Journal of Business, Finance and Accounting*, 14(1), 65-75.
- Dimson, E. (1979). Risk measurement when shares are subjected to infrequent trading. *Journal of Financial Economics*, 7(2), 197-226.
- Dimson, E., & Mussavian, M. (2000). Market efficiency. *The Current State of Business Disciplines*, 3, 959-970.
- Dyckman, T., Philbrick, D., & Stephan, J. (1984). A comparison of event study methodologies using daily stock return: A simulation approach. *Journal of Accounting Research*, 22, 1-30.
- Espenlaub, S., Goergen, M., & Khurshed, A. (2001). IPO lock-in agreements in the UK. *Journal of Business Finance & Accounting*, 28(9&10), 1235-1278.
- Espenlaub, S., Goergen, M., & Khurshed, A. (2001). Lock-in agreements in the UK: Is there a fourth IPO anomaly? EFMA Lugano Meetings Working Paper.

- Espenlaub, S., Goergen, M., Khurshed, A., & Remenar M. (2002). Trading by directors around the expiry of lock-in agreements in UK IPOs. Working Paper, Manchester School of Management, UMIST, Manchester.
- Espenlaub, S., Goergen, M., Khurshed, A., & Renneboog, L. (2003). Lock-in agreements in venture capital backed UK IPOs. ECGI Finance WorkingPaper 26/2003.
- Fama, E. F. (1970). Efficient capital markets: A review of theory and empirical work. *Journal of Finance*, 25(2), 383-417.
- Field, L.C., & Hanka, G.(2001). The expiration of IPO share lockups. *Journal of Finance*, 56(2), 471-500.
- Gao, F., & Siddiqi, M. A. (2012). The rational for IPO lockup agreements: Agency or signaling. *Review of Pacific Basin Financial Markets and Policies*, 15 (3), 1250013-1 – 18.
- Gao, Y. (2005). Trading and the information environment of IPO stocks around lockup expiration: Evidence from intraday data. *Social Science Research Network*, id- 686566, 1-62.
- 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., Mazouz, K., & Yin, S. (2010). Price, volume and spread effects associated with the expiry of lock-in agreements: Evidence from the Hong Kong IPO market. *Pacific-Basin Finance Journal*, 18, 442-459.
- Goergen, M., Renneboog, L., & Khurshed, A. (2006). Explaining the diversity in shareholder lockup agreements. *Journal of Financial Intermediation*, 15, 254-280.

- Gompers, P., & Lerner, J. (1998). Venture capital distributions: Short-run and long-run reactions. *Journal of Finance*, 53 (6), 2161-2183.
- 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.
- Hiau-Abdullah, N.A. (2000). 'Event study analysis and market efficiency: A critical review'. *Utara Management Review*, 1(2), 1-28.
- Hiau-Abdullah, N.A., & Taufil-Mohd, K. (2004). Factors influencing the underpricing of initial public offerings in an emerging market: Malaysian evidence. *IIUM Journal of Economics and Management*, 12(2), 1-21.
- Hoque, H., & Lasfer, M. (2009). IPO lockup agreements and trading by insiders. Unpublished paper, Cass Business School. EFA Bergen Meetings Paper, 2009.
- 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.
- Ibbotson, R. G., & Ritter, J. R. (1995). Initial public offerings. *Operations Research and Management Science*, 9, 993- 1016.
- Jelic, R., Saadouni, B., & Briston, R. J. (2001). Performance of Malaysian IPOs: Underwriters' reputation and management earnings forecast. *Pacific-Basin Finance Journal*, 9, 457-486.
- Jensen, M., & Meckling, W. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*.3, 305-360.
- Keasler, T. R. (2001). The underwriter's early lock-up release: empirical evidence. *Journal of Economics and Finance*, 25(2), 214-228.

- Kotari, S. P., & Wasley, C. E. (1989). Measuring security price performance in size-clustered samples. *The Accounting Review*, 64(2), 228-249.
- Kryzanowski, L., & Liang, S. (2008). Canadian IPO Share Releases: lockup designs, transparency and market behavior. *Journal of Private Equity*, 11 (2), 73-89.
- Leland, H., & Pyle, D. (1977). Informational asymmetries, financial structure, and financial intermediation. *Journal of Finance*, 32, 371-387.
- Loughran, T., Ritter, J. R., & Rydqvist, K. (1994). Initial public offering: International insights. *Pacific-Basin Finance Journal*, 2, 165-199.
- MacKinlay, A. C. (1997). Event studies in economics and finance. *Journal of Economic Literature*, 35, 13-39.
- 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.
- Mohan, N. J., & Chen, C. R. (2001). Information content of lock-up provisions in initial public offerings. *International Review of Economics and Finance*, 10, 41-59.
- Mohd-Rashid, R., Abdul-Rahim, R. & Yong, O. (2014). The influence of lock-up provisions on IPO initial returns: Evidence from emerging market. *Economic 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. (2003). Dotcom Mania: The rise and fall of internet stocks prices. *Journal of Finance*, 58 (3).

- 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.
- Paudyal, K., Saaduoni, B., & Briston, R. J. (1998). Privatisation initial public offerings in Malaysia: Initial premium and long-term performance. *Pacific-Basin Finance Journal*, 6 (5), 427-451.
- Ritter, J. R., & Welch, I. (2002). A review of IPO activity, pricing and allocations. *Journal of Finance*, 57 (4), 1795-1828.
- Taufil-Mohd, K. N. (2007). Regulations and underpricing of IPOs. *Capital Market Review*, 15(1), 1-27.
- Tolia, B., & Yip, Y., M. (2003). Hot IPOs and lockup expiration – an anomaly? *Competitiveness Review*, 13 (2), 53-59.
- 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.
- Yong, O. (2010). Initial premium, flipping activity and opening-day price spread of Malaysian IPOs. *Capital Markets Review*, 18(1), 45-61.
- Yong, O. (1996). Who actually did gain from the underpricing of IPOs? *Capital Markets Review*, 4 (1), 33-47.
- Yung, C., & Zender, J. F. (2010). Moral hazard, asymmetric information and IPO lockups. *Journal of Corporate Finance*, 16, 320-332.