ASIAN ACADEMY *of* MANAGEMENT JOURNAL *of* ACCOUNTING *and* FINANCE

AAMJAF, Vol. 8 (Supp. 1), 39–66, 2012

LIQUIDITY, INITIAL PUBLIC OFFERING (IPO) LONG-TERM RETURN AND GOVERNMENT OWNERSHIP: EVIDENCE FROM BURSA MALAYSIA IPO STOCKS

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ABSTRACT

Prior studies testing the relationship between initial public offering (IPO) returns and liquidity are mostly for the developed markets. The disperse ownership in the corporation and more well informed investors in the developed markets support their findings. On the other hand, the nature and behaviour of emerging stock markets such as Malaysia differ from the developed markets. The concentrated ownership in the corporations partly due to government ownership to a certain extent could provide different views on the relationship between liquidity and return. Using 283 samples of IPO stocks listed on Main Board and Second Board of Bursa Malaysia from 1998 to 2008, the study examines the relationship between liquidity and IPO long-term return and the moderating effect of government shareholdings on the relationship between the two variables. The results showed one proxy of liquidity that is average monthly turnover as able to explain the market-adjusted long-term return of IPO stocks when equally weighted returns are calculated. Further, the government shareholdings in the IPO stocks positively moderate the relation between liquidity and long-term return.

Keyword: initial public offering, long-term return, liquidity, government ownership

INTRODUCTION

In response to the growth strategies outlined in the Malaysian capital market master plan in needing to expand the role of the capital market, Bursa Malaysia took the task to position Malaysia as "the preferred listing destination". Despite efforts to enhance the trading environment through upgrading market infrastructure and widening participation, liquidity in the secondary market in Malaysia remained persistently low throughout the last decade. As a result, turnover velocity has lagged the other Asian stock market. The low liquidity is also reflected in Malaysia's narrow risk-return profile. The annualised standard deviation of return for Malaysia's stock market index, FBMKLCI, was around an

average value of 13.1% over the past decade, far below the average of 22.8% recorded by other markets. The annualised standard deviation of return for Malaysia's stock market index, FBMKLCI, was around an average value of 13.1% over the past decade, far below the average of 22.8% recorded by other markets (Securities Commision, 2011).

Bursa Malaysia attributes the low liquidity in the market partially to the concentrated ownership of Malaysian listed firms by major shareholders, government or government-link corporations (GLCs), which hold significant amount of shares in some companies. They constitute 36% of market capitalisation in 2005 (Putrajaya Committee for GLC High Performance [PCG], 2005). In addition, the concentration of ownership is also due to a large set of family owned listed companies. This reduces shares available for public trading and curtails trading activity. The inflexibility of moving in and out of the market is an impediment to investors. For issuing firms or investors, liquidity and return are equally important for the decision to list or invest in a particular market, especially when the global capital market landscape is undergoing radical transformation where over the decade there has been intensifying competition among exchanges to attract players.

In the initial public offering (IPO) market, the theory of liquidity as proposed by Booth and Chua (1996) argued that underpricing can be used as a tool to create liquidity in the secondary market as initial return drives the broadness of shareholder base through participation of retail and uninformed investors. The dispersed ownership by retail investors in turn drives liquidity in the secondary market. In line with this argument, Pritsker (2006) shows that the allocation and concentration of IPO shares in handful of institutional investors with market power results in pronounced aftermarket illiquidity. This would lead to poor long run performance. Eckbo and Norli (2005) and Roychoudhury (2006) investigate the liquidity effect on long-run returns of IPO stocks for the U.S. market. Their findings justify the underperformance of high liquid IPO stocks as being due to lower financial risk and liquidity risk for the firm's shareholders.

In the context of the Malaysian stock market, most information on the state of return and liquidity currently is based on the practitioner's point of view. Prior academic studies testing the relationship between IPO returns and liquidity are mostly for the developed markets. The disperse ownership in the corporation and more well informed investors in the developed markets support their findings. On the other hand, the nature and behaviour of emerging stock markets such as Malaysia differ from the developed markets. The concentrated ownership in the Malaysian firms, the behaviour of market participants and some policies to a certain extent could provide different views on the relationship between liquidity and return. Thus, driven by lack of academic research and the

differences in market environment, it is the objective of this study to reduce the existing gap by examining the relationship between IPO returns and liquidity from an emerging market perspective as well as the moderating effect of government ownership on the relation between these two variables.

Using a sample of 283 IPO stocks listed on Main Board and Second Board of Bursa Malaysia from 1998 to 2008, the study examines the relationship between liquidity and IPO long-term return and the moderating effect of government shareholdings on the relationship between the two variables. The results show only one proxy of liquidity that is average monthly turnover as able to explain the long-term return of IPO stocks when equally weighted returns are calculated. Further, the government shareholdings in the IPO stocks positively moderate the relation between liquidity and long-term return. The specific contributions of the paper are twofold. First, it provides evidence on IPO returns and liquidity within a developing market (Malaysia) to complement earlier studies which focus on developed markets. Second, it is expected that substantial government shareholding in a corporation would be able to provide potential explanation on the relationship between liquidity and return.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Liquidity and Asset Pricing Theory

From the finance perspective, liquidity is simply defined as the ability to buy and sell assets easily (O'Hara, 1995) or to convert assets into cash quickly preferably without any price discount. More comprehensively it is described as the ability to trade large quantities quickly at a low cost with little price impact (Liu, 2006). The definition generally classifies four scopes of liquidity, namely trading quantity, trading speed, trading cost (transaction cost) and price impact. On the other hand, illiquidity is defined as the absence of continuous trading which is illustrated by the degree of mismatch between available buyers and sellers at a given point in time (Demsetz, 1968).

Liquidity has become a key consideration in determining asset prices (Amihud & Mendelson, 1986; Datar, Naik, & Radcliffe, 1998; Acharya & Pederson, 2005). Fouse (1977) points out that in addition to market risk premium; liquidity is a second, completely independent pricing factor of a financial asset. He suggests that risk premiums and liquidity preference premium play an integral role in explaining variations in the discount rate or expected return. Amihud and Mendelson (1986, 1989) pioneer the study in finding the link between liquidity and asset pricing and propose that more liquid firms have lower expected returns than other firms. Though investors can eventually trade the stock, they have to do

so by discounting the value of the stocks according to its illiquidity. It seems reasonable that many investors would only be willing to purchase an illiquid stock if there is an incentive to buying the stock. Likewise, investors pay a liquidity premium when purchasing a highly liquid stock to ensure the ability to liquidate a position immediately. The liquidity premium theory proposes that holders of lower liquidity assets demand higher expected returns as a compensation of bearing more liquidity risk.

Subsequently, extensive studies have been published that comprehensively investigate the influence of liquidity on stock returns. Majority of studies in developed markets find evidence supporting the liquidity premium theory of a negative relation between stock liquidity and its returns. Though this cannot be accepted as unanimous, Datar et al. (1998), Chordia, Subrahmanyam, and Anshuman (2001), Amihud (2002), and Pastor and Stambaugh (2003), all find evidence that liquidity is a significant determinant of stock return in the U.S. market. This negative relationship is also found in other developed stock markets. For example, Chan and Faff (2003) and Marshall and Young (2003) find a significant negative relation for Australian stock market. Martinez, Nieto, Rubio and Tapia (2005) and Marcello and Quiros (2006) provide evidence from the Spanish stock market. Meanwhile, using data from Tokyo Stock Exchange Chang, Faff and Hwang (2010) found a significant negative relationship between liquidity proxies and stock returns in Japanese market. Liquidity as a determinant of stock returns is further confirmed by Li, Sun and Wang (2011) reported both liquidity level and liquidity risk are priced in Japanese stock market during the period 1975 to 2006. With regards to Hong Kong stock market, Lam and Tam (2011) study indicate that liquidity is an important factor for pricing returns after taking into account well-documented asset pricing factors.

However, the same studies conducted across emerging markets produce opposite results. In contrary to the findings in developed markets, majority of the studies find the relation between liquidity and stock returns is positively related. These findings are somewhat perplexing given the perception that emerging markets have more acute liquidity problems than in developed markets. The evidence can be seen in Jun, Marathe and Shawky (2003), Dey (2005) and Bekaert, Harvey and Lundblad (2007). However, Rouwenhorst (1999) and Lischewski and Voronkova (2012) find liquidity is not priced. Among the justifications for the inconsistency in findings are the relative inefficiency, the liberalisation process associated with emerging equity markets, the approach of the study (Engku-Chik, 2006) and lower degree of integration between emerging equity markets with the world economy (Bekaert & Harvey, 1997). Besides, the methodology and data adopted in the study also contributes to the inconsistency. Some studies use data at the aggregate level (Jun, Marathe, & Shawky, 2003), or

by pooled data across countries (Bekaert, Harvey, & Lundblad, 2007; Rouwenhorst, 1999).

There are very limited studies undertaken on the Malaysian market. Among others, Engku-Chik (2006) and Abdul Rahim and Mohd Nor (2006) also provide evidence of positive relation between liquidity and average stock returns. In general over the sample period from January 1994 to December 2003, Engku-Chik (2006) shows that liquidity, as proxied by turnover ratio and turnover liquidity ratio are positively related to stock returns after controlling for other well-known firm characteristics (beta, size, book-to-market and momentum). Consistent with Engku-Chik (2006) and Abdul Rahim and Mohd Nor (2006, 2008), this study finds negative liquidity premium which demonstrates higher liquidity assets are compensated by higher returns. These results are in line with other findings in the emerging markets. Nonetheless, Ali Ahmed (2009) finds that level of liquidity does contribute in explaining the expected stock return in Malaysia capital market. In contrary to other findings in the Malaysia market, the results are found to be consistent with the study done by Amihud and Mendelson (1986, 1989).

IPO Stock Long-Term Return and Liquidity

IPO long-term return is the cumulative returns over one year or beyond after the listing date. Alternatively, it is the return realised by investors in taking a buy and hold position on the IPO stock issued for a minimum of one year. The empirical evidences on long-term returns of IPO stocks are still inconclusive; with the majority of developed stock markets reporting underperformance (Ritter, 1991; Loughran & Ritter, 1995; Ritter & Welch, 2002) whilst their developing counterparts showing over-performance (Kiymaz, 2000; Chen, Hung, & Wu, 2002; Chan, Wang, & Wei, 2004). For the Malaysian IPO, based on the study by Corhay, Teo and Tourani-Rad (2002) using 258 IPOs listed on both the Main Board and Second Board of Bursa Malaysia for the period of 1992 to 1996, found that Malaysian IPOs have outperformed the market with a mean cumulative abnormal return (CAR) of 41.7% and average buy-and-hold return (BAHR) of 39.6% over a three year period after listing. In addition, Ahmad-Zaluki, Campbell and Goodacre (2007) also report a positive buy and hold returns of 17.86% for IPOs listed on Bursa Malaysia Main Board over the period of 1990 to 2000. Meanwhile Chong (2009) reports a meagre positive equal weighted market adjusted buy-and-hold-return of 0.66% for 132 Main Board samples from 1991 to 2003.

The privatisation literature on long-term stock performance exhibits mixed results. In contrast to private companies' IPOs, many multi-country studies generally find privatisation IPOs outperform in the long-run (Megginson &

Netter, 2001). However, a significant long-term underperformance is found in Aggarwal, Leal and Fernandez (1993) and Comstock, Kish and Vasconcellos (2003). Foerster and Karolyi (2000) however, do not find significant abnormal long-term performance when they examine long-run returns for 333 non-U.S. firms that list stock on U.S. markets. Individual-country studies also show mixed results since Levis (1993) and Menyah, Paudyal and Inyangete (1995) find significant over-performance for U.K. PIPOs, but Paudyal, Saadouni and Briston (1998) and Ahmad-Zaluki et al. (2007) in Malaysia and Jelic and Briston (1999) in Hungary do not find significant abnormal long-term performance.

The existing studies related to liquidity and long-term returns of IPO stocks are very limited. In contrary to majority of findings in developed markets, Eckbo and Norli (2005) show that IPO stocks underperformance disappeared when they control the sample for the differences in liquidity by including liquidity factor in the standard multifactor Fama-French framework and Carhart's (1997) momentum factor. They assert that IPOs are more liquid than their style matched peer firms. Hence, the expected returns are lower for IPOs and should not under perform if correctly taking into account the liquidity risk. In another study, Roychowdhury (2006) find high liquidity IPO portfolios have more tendencies to underperform as compared to low liquidity portfolios within one or two years after the initial post IPO portfolio formation period. He attributes this finding to the liquidity profile of the IPO market. In particular, the bigger the number of IPO firms in high liquidity portfolios in a given year, then the subsequent future returns could show underperformance. Burrowes, Feldman, Feldman and MacDonald (2004) indicate that the greater liquidity in the initial period would eventually lead to greater returns and trading one year later.

Hypotheses Development

In the Malaysia stock market, Engku-Chik, (2006) and Abdul Rahim and Mohd Nor (2006) findings imply that more liquid stocks in general generates higher return. Therefore, to further explore and observe whether the positive relation between liquidity and returns is extended to IPO stocks long-term return, the following hypothesis is presented:

H1: There is a positive relation between post-listing liquidity and the long term return of the Malaysian IPO stocks.

As the liquidity issue in Malaysian stock market is partly contributed by the concentrated ownership due to government shareholdings in some corporations, thus, it is expected that the concentrated ownership in IPO companies with government ownership can cause lower liquidity and weaken the relationship between liquidity and long-term return. However, as also argued, the

perception of credibility of government back-up provides assurance that companies do not fail thus would boosts confidence among investors to trade government owned stocks. As such it is expected that the positive effect of government credibility will outweigh the negative effect of concentrated ownership by substantial government shareholding. Based on the argument, we examine the moderating effect of government ownership and present H2 as below:

H2: The government ownership positively moderate the relation Between post-listing liquidity and long-term return of the Malaysian IPO stocks

RESEARCH MEASURES AND DESIGN

Measure for Long-Term Return

The study uses Market Adjusted Buy-and-Hold Return (MABAHR) to measure for long-term return. The formula used to calculate MABAHR for company *i* over the period of *N* is as follow:

$$MABAHR_{t,N} = \omega_t \sum_{t=0}^{t=N} \{[\prod(1+R_{it})] - [\prod(1+R_{mt})]\} \quad (1)$$

We calculate MABAHR over the period of 12, 24 and 36 months, where the averaging is done across all IPO firms. MABAHR is calculated using both equally weighted and value-weighted approaches. The value-weighted approach assigns weight to each IPO firms in accordance with the size of the firm while equally-weighted approach assigns the same weight to each firm involved in the sample. The returns of value-weighted calculation are biased towards the largest constituent while the returns of equal-weighted are not biased to the large capitalised firms. However, in the event when the majority of firms are small, then it might be disputed that the returns are biased towards small firms. In the context of new listing companies, long-run underperformance is more profound among smaller rather than bigger firms (Brav & Gompers, 1997). Therefore, value-weighted approach would generally report less severe underperformance compared to equally-weighted approach. The weight ω_t is $1/N_t$ where, N_t is the number of IPOs in the sample. For the value-weighted return the weight ω_t is MV_i/MV_{Nt} where MV_i is the market capitalisation of the *i*th stock upon listing and MV_{Nt} is the total market capitalisation of all the IPO stocks in the sample.

The first return period is month 1, the monthly return R_{it} refers to the difference between the beginning of the month closing price and the closing price on the last trading day of the month on which the stock is traded. However, in order to avoid the potential bias throughout the long-term return analysis, and avoid the effect of flipping; this study excludes the first four days of trading for the first month. Thus, for month 1, the 5th day closing price will be used as its beginning of the month closing. R_{mt} is the monthly return on KLCI index and is used to adjust the return for each month.

Proxies for Liquidity

The study uses the monthly turnover (MTURN) and turnover volatility ratio (TV) to proxy for liquidity in examining the relation between long-term return and liquidity. Turnover is a widely used proxy for long-term liquidity (Dey, 2005; Eckbo & Norli, 2005) as the data is easily available and consistently produce significant results (Datar et al., 1998; Chordia et al., 2001; Abdul Rahim & Mohd. Nor, 2008; Sapian, Yong, Mohd. Nor, & Abdul Rahim, 2011). In addition, Abdul Rahim and Mohd Nor (2007) show volume based variables are sufficient representation of liquidity and lend a strong support for the theoretical prediction regarding the role of liquidity as an important drivers of expected returns. Here, liquidity proxies are calculated over the period of 12, 24 and 36 months, where the averaging is done across all IPO firms.

The **monthly turnover MTURN** for the *i*th stock is computed as:

$$MTURN_{i,t} = \frac{1}{D_{it}} \sum_{d=1}^{D_{i,t}} TVO_{i,d,t} \tag{2}$$

Where $TVO_{i,d,t}$ is the share turnover for stock i on day d in month t, and $D_{i,t}$, is the number of trading days for stock i in month t. Turnover, gives a direct measure of the asset trading frequency. Datar et al. (1998) find that cross section stock returns decline in turnover.

The **Turnover Volatility Ratio (TV)** is calculated as monthly turnover divided by the standard deviation of stock market returns:

$$TV_{i,N} = \frac{MTURN_{i,N}}{STDRM_N} \tag{3}$$

$TV_{i,N}$ is the turnover-volatility ratio for stock i for N months. $MTURN_{i,N}$ is the average monthly turnover for stock i for N months. $STDRM_N$ is the standard

deviation of stock market return for *N* months. *N* is calculated for 12 months, 24 months and 36 months. The turnover-volatility ratio measure is essentially a volatility-adjusted measure of the turnover ratio. In the context of emerging markets with relatively high levels of market volatility, this measure may be more appropriate to use in estimating the fundamental relation between liquidity and stock returns (Jun et al., 2003; Engku-Chik, 2006). The notion behind this measure is that more liquid markets should be capable of handling higher volumes of trading without large price swings.

Proxy for Government Ownership

Government ownership is represented by dummy GOVT. With respect to this study, an IPO company is considered as having government ownership if it is a government privatisation company (PIPO), a company that is categorised as GLCs and a private company that has substantial shareholding by government agencies (e.g., Khazanah Nasional, Ministry of Finance Inc., Employee Provident Fund and Bank Negara Malaysia) and/or government link investment companies (GLICs – e.g., Lembaga Tabung Angkatan Tentera, Lembaga Tabung Haji, and Permodalan Nasional Berhad) and/or the subsidiary of the above two categories. The list of PIPOs and GLCs are obtained from Economic Planning Unit (EPU) of the Prime Minister Department of Malaysia. As for the private company IPOs, we manually checked the Annual Report of the sample and identify private companies that report the government agencies and GLICs are their substantial shareholders. A dummy GOVT equals to '1' for IPOs having government shareholdings or ownership and '0' otherwise.

Research Design: Model Specification

Model 1

$$MABAHR = \alpha + \beta_1 MTURN + \beta_2 TV + \beta_3 MAIR5 + \beta_4 SIZE + \beta_5 BOARD + \beta_6 MB + \varepsilon$$

Model 2

$$MABAHR = \alpha + \beta_1 MTURN + \beta_2 TV + \beta_3 MAIR5 + \beta_4 SIZE + \beta_5 BOARD + \beta_6 MB + \beta_7 GOVT + \beta_8 GOVT * MTURN + \beta_9 GOVT * TV + \varepsilon$$

To capture the effect of liquidity on long-term return of the Malaysian IPO stocks in H1; we regress MABAHR against long-term liquidity variables (MTURN and TV) and the controlling variables using Model 1. Positive sign is expected as Engku-Chik (2006) and other studies on emerging markets reported more liquid stock generally generate higher returns. The study controls for the widely documented offer and firm characteristics such as market adjusted initial return

(MAIR5), firm size (SIZE), and market-to book value ratio (MB). In addition BOARD of listing is also included to control the model. Finally, the moderating effect of government ownership on the relation between liquidity and long-term return (H2) is examined using Model 2 with additional test variables of GOVT dummy and the interaction between liquidity proxies and GOVT dummy.

Table 1 presents the elaboration of independent and control variables with regards to IPO literature and their expected sign. The control variables differ in its relationship from prior documentation as in the developed market.

Table 1
Definition and expected sign for independent and control variables

Independent Variables		**Definition and Elaboration**	**Expected Sign**
$MTURN_{i,N}$	=	It is monthly turnover and is measured by the monthly turnover for the ith stock.	Positive (+)
$TV_{i,N}$	=	The turnover-volatility ratio measure. It is essentially a volatility-adjusted measure of the turnover ratio.	Positive (+)
MAIR5	=	Market adjusted initial return. It is measured as the difference between the IPO offer price and the closing price of the 5st day of listing adjusted to KLCI index. Negative relation between MAIR and MABAHR is reported by Ritter (1991) for US market; and Tay (1993), Wong and Uddin (2000) and Chong (2009) for the Malaysian IPO.	Negative (–)
SIZE	=	Size is measured by natural logarithm of the firm market capitalization immediately after listing. Jelic et al. (2001), Corhay et al. (2002) and Ahmad-Zaluki et al., (2007) report that smaller Malaysian company IPOs perform better than larger IPOs. A negative relation between size and MABAHR is expected.	Negative (–)
MB	=	The natural logarithm of market-to-book value ratio which proxies for the IPO company's growth potential. Higher growth companies (represented by lower book-to-market or higher market-to-book) are associated with lower return (Loughran & Ritter, 1995) for the US market and Corhay, Teo and Rad (2002) for the Malaysian market.	Negative (–)
GOVT*TV	=	The interaction effect of government ownership and turnover volatility. Similar to interaction between GOVT*MTURN, a positive sign is also expected for this variable.	Positive (+)

(Continued on next page)

Table 1 *(continued)*

Independent Variables		Definition and Elaboration	Expected Sign
BOARD	=	A dummy for board of listing. Value '1' is assigned to firms listed on the Main Board and '0' for the Second Board. Ahmad-Zaluki et al. (2007) find no evidence of significant differences between the long run benchmark-adjusted performance of the Main Board and the Second Board IPOs. The Main Board companies are always associated with bigger, more reputable and more profitable companies. Thus, a positive relation with return is expected.	Positive (+)
GOVT	=	A dummy to represent government ownership in the IPOs firms. Government related or privatisation IPOs (PIPOs) have been found to generate positive long run returns in many countries (Megginson & Netter, 2001). However, in Malaysian studies, Paudyal et al. (1998) and Ahmad-Zaluki et al. (2007) find no evidence of significant differences in the long run performance of private sector and privatisation IPOs. Here a positive relation is expected.	Positive (+)
GOVT*MTURN	=	The interaction effect of government ownership and monthly turnover. Since government owned companies are claimed to have more concentrated ownership, it is expected that it can lead to lower liquidity and weaken the relationship between liquidity and long-term return. However, the credibility of government back-up in ensuring the companies do not fail would boosts confidence among investors to trade the stocks with government shareholdings. As such the positive relation between liquidity and LT returns are expected to be stronger for IPO stocks with government ownership.	Positive (+)

Sample Selection

The sample consists of 283 IPO firms listed on both Main Board and Second Board of Bursa Malaysia starting from 1998 to 2008. The number of sample firms is 283 with 53 firms fulfilled the criteria of government ownership and 230 are non-government or private ownership. The ending data for 2008 sample is October 2011 to allow for long-term performance measure. The data is drawn from Securities Commission, Bursa Malaysia Research and Data Centre and Thompson and Learning DataStream.

DATA DESCRIPTION AND EMPIRICAL RESULTS

Descriptive Statistics

Tables 2, 3 and 4 report the descriptive statistics of the sample used in this study. The mean market-adjusted-buy-and-hold-return (MABAHR) is calculated for 12, 24 and 36-month period. Table 2 shows the mean of market-adjusted-buy-and-hold-return (MABAHR) for the whole sample from 1998 to 2008 increasingly underperformed over the 3 year period of analysis, starting with –0.821% for 12-month period to –0.967% for 24-month and falls further to –1.100% for 36-month period. The highest MABAHR for 12-month period from listing (MABAHR12) is 11.89% and the lowest is –9.59%. Meanwhile the highest MABAHR24 is 6.31% and the lowest is –7.90%. Finally MABAHR36 has the highest value of 5.39% and the lowest value of –6.73%. The data also shows that MABAHRS for both IPO with government ownership and private company IPOs underperformed and there is no significance difference between the mean of MABAHR for these two groups for all period of analysis (Refer to Table 3). This finding is not consistent with Ahmad-Zaluki et al. (2007) who report insignificant overperformance of privatisation IPOs and insignificant underperformance of private company IPOs for 36-month period of analysis.

The analysis of MABAHR by cohort years reveals almost similar pattern with mean returns declining over time (Refer to Table 4). However, the equally-weighted MABAHR (EWMABAHR) for year 2006 and 2008 are positive or out-performed the market for the first 12 and 24 months. The EWMABAHR for 36-month period are all negative except in 1999 with the mean value of 0.105%. The highest negative returns are reported in year 2004 where the mean values are –2.068%, –2.268% and –2.138% for EWMABAHR12, EWMABAHR24 and EWMABAHR36 respectively.

Our samples include 283 IPO stocks listed on Bursa Malaysia from 1998 to 2008. MABAHR12, MABAHR24 and MABAHR36 are market-adjusted-buy-and-hold-return calculated for 12, 24 and 36-month respectively. MTURN12, MTURN24 and MTURN36 are monthly turnover for 12, 24 and 36-month from the listing date respectively, calculated as percentage of monthly trading volume divided by the number of shares outstanding. TV12, TV24 and TV36 are monthly turnover-volatility ratio calculated as turnover ratio divided by the standard deviation of stock market return for the period of 12, 24 and 36-month respectively. MAIR5 is the difference between the closing price of 5th days after the IPO and the IPO offer price, and adjusted for KLCI. The market-to-book ratio (*MB*) is measured by the market value of equity after listing divided by common shareholders' equity.

Table 2
Descriptive statistics for long-term return-liquidity analysis (All sample 1998–2008)

N = 283	Mean	Minimum	Maximum	Std. Deviation	Skewness
MABAHR12 (%)	–0.821	–9.59	11.89	3.19	0.412
MABAHR24 (%)	–0.967	–7.90	6.31	2.30	0.267
MABAHR36 (%)	–1.100	–6.73	5.39	1.94	0.204
MTURN12 (%)	11.54	0.22	61.01	11.51	1.643
MTURN24 (%)	9.06	0.21	48.23	8.87	1.717
MTURN36 (%)	7.85	0.17	39.18	7.53	1.608
TV12	120.64	1.88	966.74	136.82	2.682
TV24	86.78	1.50	509.29	92.05	2.302
TV36	70.49	1.25	382.37	68.33	2.011
MAIR5 (%)	23.353	–44.01	287.06	44.35	2.360
SIZE (RM)	151m	2.71m	12.62b	1.05	1.649
MB	1.6533	0.00	7.84	0.87	2.747
OFFERSIZE (UNIT)	74.342m	1.702m	3.75b	283.337m	10.109

Meanwhile, Table 4 also shows that the value-weighted MABAHR (VWMABAHR) means are found to be –1.431%, –0.560% and –0.490% respectively for the 12-month, 24-month and 36-month period with a minimum of –5.085% for samples listed in 2008 (VWMABAHR12) and a maximum of 2.503% for samples listed in 2006 (VWMABAHR12). On the contrary to EWMABAHR, the overall mean of VWMABAHR shows the opposite pattern. Although the values for VWMABAHR for 12, 24 and 36 months are still negative or underperformed, the percentage is declining. High negative return or underperformance for 2008 was due to a high loss by AXIATA which has the biggest market value for the companies listed in 2008. With 85% proportion of the total market value of IPO companies in that year it inevitably pulled down the overall value-weighted return.

Table 3
Government ownership vs. non-government ownership IPOs

Variables	ALL SAMPLE (N = 283)		GOVT IPOs (N = 53)		Non–GOVT IPOs (N = 230)		T–stats[a]	p–value
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation		
LONG–TERM								
RETURN (%)	–0.821	3.185	–0.245	3.362	–0.953	3.136	1.416	0.145
MABAHR12	–0.966	2.299	–0.796	2.013	–1.006	2.363	0.599	0.550
MABAHR24	–1.100	1.935	–0.825	1.772	–1.164	1.969	1.148	0.252
MABAHR36								
LIQUIDITY								
MTURN12	11.54	11.51	10.26	9.48	11.84	11.93	–0.902	0.398
(%)	9.06	8.87	7.78	7.69	9.35	9.11	–1.169	0.243
MTURN24	7.85	7.53	7.01	7.12	8.05	7.62	–0.904	0.367
(%)								
MTURN36								
(%)								
TV12	120.64	136.81	89.13	83.21	127.94	145.62	–2.598***	0.010
TV24	86.78	92.05	64.07	61.41	92.03	97.13	–2.638***	0.009
TV36	70.49	68.33	54.29	47.96	74.24	71.79	–2.458**	0.015

*** Significant at 1% level
** Significant at 5% level
[a] Based on one–sided t–test (two independent samples) for mean difference between the two groups of GOVT IPOs and Non–GOVT IPOs. The degree of freedom (d.f.) equal to 281 (d.f.= $N_1 + N_2 - 2$).

The average means for both EWMABAHR and VWMABAHR show underperformance and are not consistent with the over-performance reported in some studies. Among others, Corhay Teo and Rad (2002) report an average three-year buy-and-hold return of 39.6% for 258 IPO stocks listed on both Main Board and Second Board of Bursa Malaysia for the period of 1992 to 1996 while Ahmad-Zaluki, Campbell and Goodacre (2007) report an EWBAHR of 17.86% and VWBAHR of –14.23% for 454 samples listed on both Main and Second Board during 1990 to 2000 period. The differences in the findings could have been due to different period of study.

Table 4
Long–term return and liquidity analysis by cohort year

Listing Year	No. of sample	EW mabahr12	EW mabahr24	EW mabahr36	VW mabahr12	VW mabahr24	VW mabahr36	Mturn 12	Mturn 24	Mturn 36	TV12	TV24	TV36
1998	20	−0.390	0.173	−0.802	−0.013	0.991	−0.699	13.05	13.24	12.60	56.92	59.10	58.81
1999	18	0.680	−0.488	0.105	−1.556	−0.960	0.351	21.15	12.19	9.34	105.13	61.62	51.84
2000	36	−1.767	−0.625	−0.607	−1.097	−0.315	−0.510	15.69	13.76	10.36	156.35	105.43	81.14
2001	20	−1.051	−1.023	−0.749	0.091	−1.136	−2.013	20.62	14.40	12.01	153.32	111.00	94.28
2002	39	−0.189	−0.441	−1.044	0.553	0.381	0.484	13.34	16.43	12.56	126.12	118.40	96.58
2003	36	−1.189	−2.212	−2.080	0.103	−0.576	−0.821	17.89	11.32	10.34	137.24	101.50	75.43
2004	40	−2.068	−2.268	−2.138	−1.012	−1.582	−1.437	9.87	6.51	6.56	139.69	88.84	73.40
2005	27	−0.576	−0.676	−1.087	−1.012	−1.582	−1.437	9.82	7.56	6.94	94.17	65.14	56.36
2006	13	1.502	0.339	−0.247	2.503	0.027	0.534	17.33	11.40	9.05	128.18	98.03	64.31
2007	19	−1.661	−1.296	−1.094	−1.672	−1.321	−1.023	7.63	4.80	4.00	109.21	42.26	34.34
2008	15	0.563	0.053	−0.392	−5.085	−0.948	−0.455	4.96	4.48	4.44	38.85	34.44	36.37
Total/ Average	283	−0.821	−0.966	−1.094	−1.431	−0.560	−0.490	11.54	9.06	7.85	120.64	86.78	70.49

The average monthly turnover (MTURN) also is calculated for the period of 12, 24 and 36 months after listing. Refer to table 2 the IPO sample report the mean turnover of 11.54%, 9.06% and 7.85% respectively for three period of analysis (MTURN12, MTURN24 and MTURN36). The trend shows that the average monthly turnover declines over time with the highest turnover reported in the first 12 months after listing. Subsequently, trading turnover continues to fall. The highest trading turnover for MTURN12 is 61.01% and the lowest is 0.22%. Meanwhile, as for MTURN36 the statistic shows the highest value of 39.18% and the lowest value of 0.17%. Table 3 also reveals that mean monthly turnover for non-Government ownership IPOs are slightly greater than Government ownership IPOs for all three period of analysis. However, the independent sample t-test shows no significant difference in monthly trading turnover between the two groups. Analysis by cohort year in Table 4 reports the highest turnover in 1999 for 12-month average (MTURN12 of 21.15%) and the lowest turnover in year 2007 and 2008 for 36-month average (4% and 4.44%). Lower turnover in year 2007 and 2008 was probably due to the effect of economic slow-down indirectly brought by the U.S. subprime crisis.

The sample also reports the mean turnover-volatility ratio of 120.64, 86.78 and 70.49 respectively for three period of analysis TV12, TV24 and TV36. The monthly turnover-volatility decline over time with the highest volatility reported in the first 12 months after listing (Refer to Tables 2 and 4). Table 3 indicates that the mean turnover volatility ratios for non-government ownership

IPOs are significantly greater than government owned IPOs for all three period of analysis with the difference being significant. The result demonstrates that the non-government IPOs have a greater liquidity and are capable of handling higher volumes of trading without large price swings.

Pearson Correlation Coefficient Analysis

The results for Pearson correlation analysis are presented in Table 5. The positive relationship between monthly turnover and turnover volatility supports the idea that both variables are proxies for liquidity. However, a strong significant correlations of 0.717 (MTURN12 and TV12), 0.721 (MTURN24 and TV24) and 0.715 (MTURN36 and TV36) suggest the possibility of multicollinearity. However, the validity of the two measurements is questionable if the correlation is 0.75 and above (Cavana, Delahaye, & Sekaran, 2001). In addition, no multicollinearity assumption is satisfied as the Variance Inflation Factor (VIF) between independent variables for all models is below 10. Most of the factor is below 2.5 except a high multicollinearity detected for dummy interaction variables which are regarded as a model-inherent collinearity (Gatignon & Vosgerau, 2006). The positive relation between monthly turnover (MTURN) and turnover volatility (TV) as well as MABAHR suggests that more liquid stocks have higher long-term return. This relationship is inconsistent with liquidity premium theory (Amihud & Mendelson, 1986) but consistent with empirical evidence of emerging market sample. So, this positive relationship is supported but insignificant.

For the control variables, market adjusted initial return (MAIR5) is negatively related to EWMABAHR. The relation is significant for EWMABAHR12 and EWMABAHR24. On the other hand, MAIR5 is positively related to VWMABAHR but the relationship is not significant for all period of analysis. SIZE, BOARD of listing and GOVT are negatively related to VWMABAHR for all period of analysis. However, they are positively related to EWMABAHR (with the exception of SIZE and EWMABAHR12). It indicates that bigger size IPO firms in main board and GOVT IPO firms have on average lower value weighted long-term return but greater equal-weighted market adjusted returns. These negative relationships with VWMABAHR are significant for SIZE and GOVT dummy. Additionally, market book value (MB) is positively related to MABAHR but the relationship is only significant for VWMABAHR. Nevertheless, since all the correlations among control variables are below 0.75; therefore, multicollinearity problem is not a concern in this context.

Table 5
Pearson correlations coefficient analysis for independent, dependent and control variables

VARIABLES	MABAHR12	MABAHR24	MABAHR36	MTURN12	MTURN24	MTURN36	TV12	TV24	TV36	MAIR5	SIZE	BOARD	MB	GOVT
MABAHR12	1.000													
MABAHR24	0.713**(EW)	1.000												
	0.063(VW)													
MABAHR36	0.589**(EW)	0.840**	1.000											
	0.197**(VW)	0.228**(VW)												
MTURN12	0.087(EW)	0.099(EW)	0.100*(EW)	1.000										
	0.036(VW)	0.060(VW)	0.062(VW)											
MTURN24	0.036(EW)	0.144**(EW)	0.087(EW)	.860**	1.000									
	0.025(VW)	0.059(VW)	0.055(VW)											
MTURN36	0.022(EW)	0.135*(EW)	0.109*(EW)	0.778*	.927**	1.000								
	−0.015(VW)	0.058(VW)	0.058(VW)											
TV12	0.017(EW)	0.048(EW)	0.045(EW)	0.717**	.596**	.542**	1.000							
	0.028(VW)	0.068(VW)	0.069(VW)											
TV24	0.047(EW)	0.088(EW)	0.055(EW)	.695**	0.721**	.665**	0.880**	1.000						
	0.023(VW)	0.082(VW)	0.094(VW)											
TV36	0.049(EW)	0.105*(EW)	0.093(EW)	.662**	.707**	0.715**	0.811**	0.952**	1.000					
	−0.003(VW)	0.070(VW)	0.097(VW)											
MAIR5	−0.113*(EW)	−0.104*(EW)	−0.085(EW)	.248**	.161**	.106*	0.184**	0.146**	0.113*	1.000				
	0.034(VW)	0.032(VW)	0.041(VW)											
SIZE	−0.001(EW)	0.082(EW)	0.096(EW)	−.078	−.167**	−.222**	−0.091	−0.144**	−0.148**	0.071	1.000			
	−0.162**(VW)	−0.129*(VW)	−0.100*(VW)											
BOARD	0.097(EW)	0.090(EW)	0.098(EW)	−.188**	−.213**	−.209**	−0.136*	−0.169**	−0.169**	−0.057	0.337**	1.000		
	−0.063(VW)	−0.064(VW)	−0.064(VW)											
MB	0.022(EW)	0.002(EW)	−0.007(EW)	.003	−.038	−.046	0.008	−0.013	0.005	0.411**	0.280**	0.115*	1.000	
	0.139**(VW)	0.129*(VW)	0.145**(VW)											
GOVT	−0.0057(EW)	−0.028(EW)	0.009(EW)	−.054	−.070	−.054	−0.065	−0.093	−0.082	−0.027	0.246**	0.252**	0.049	1.000
	−0.091(VW)	−0.136*(VW)	−0.113*(VW)											

**. Correlation is significant at the 0.01 level (1–tailed).
*. Correlation is significant at the 0.05 level (1–tailed).

Empirical Results

Relation between liquidity and long-term return

Tables 6(a) and 6(b) report the cross-sectional regression results of the liquidity measures against MABAHR. For robustness of the results, the independent variables are regressed against both the equally-weighted and value-weighted MABAHR under Model 1. As shown in table 6(a) for EWMABAHR the multivariate hierarchical regression analysis which utilises the 12-month, 24-month and 36-month EWMABAHR as the dependent variables against the proxy of long-term liquidity, i.e. monthly turnover (MTURN) and turnover volatility ratio (TV) as primary explanatory variables, show a significant relationship between these variables for MTURN only; i.e. MTURN12, MTURN24 and MTURN36. Table 6(b) shows the same analysis with VWMABAHR as the dependent variables whereby the result shows no significant relationship between the variables, except for the relation between VWMABAHR24 and TV24.

Our samples include 283 IPO stocks listed on Bursa Malaysia from 1998 to 2008. EWMABAHR12, EWMABAHR24 and EWMABAHR36 are equal weighted market-adjusted-buy-and-hold-return calculated for 12, 24 and 36-month respectively. MTURN12, MTURN24 and MTURN36 are monthly turnover for 12, 24 and 36-month from the listing date respectively, calculated as percentage of monthly trading volume divided by the number of shares outstanding. TV12, TV24 and TV36 are monthly turnover-volatility ratio calculated as turnover ratio divided by the standard deviation of stock market return for the period of 12, 24 and 36-month respectively. MAIR5 is the difference between the closing price of 5th days after the IPO and the IPO offer price, and adjusted for KLCI. SIZE is the natural logarithm of firm size, measured by the market capitalisation after listing. BOARD is a dummy for board of listing on Bursa Malaysia, value '1' is assigned for IPO firms listed on main board and '0' for second board. The market-to-book ratio (MB) is measured by the market value of equity after listing divided by common shareholders' equity.

Table 6(a)
Cross sectional regression of proxies of liquidity with EWMABAHR

Dependent Variables	EWMABAHR12				EWMABAHR24				EWMABAHR36			
	Step 1		Step 2		Step 1		Step 2		Step 1		Step 2	
Independent Variables:	β	t–stat	β	t–stat	β	t–stat	β	t–stat	β	t–stat	β	t–stat
Control Variables												
MAIR5	– 0.011*	–2.297**	–0.014**	–2.196	–0.007**	–2.008	–0.008**	–2.413	–0.004	–1.435	–0.005	–1.391
SIZE	–0.042	–0.348	–0.060	–1.113	0.115	1.313	0.125	1.447	0.102	1.378	0.123**	2.112
BOARD	0.789*	1.778*	0.872**	2.142	0.425	1.323	0.500	1.577	0.327	1.210	0.382	1.361
MB	0.330	1.323	0.367	1.386	0.095	0.529	0.116	0.655	0.010	0.063	0.011	0.075
Constant	2.721	0.834	2.131	0.673	–0.345	–0.146	–2.305	–0.926	–1.716	–0.863	–3.438	–1.453
Model Primary Explanatory Variables												
MTURN			0.059**	2.081			0.054**	2.426			0.036*	1.714
TV			–0.276	–1.025			–0.038	–0.204			0.070	0.404
F–Value			2.189**				2.610**				1.971*	
R^2	1.728		0.053		1.569		0.062		1.305		0.048	
Adjusted R^2	0.030		0.029		0.028		0.038		0.023		0.024	
R^2 change	0.013		0.023*		0.009		0.034*		0.005		0.025*	
Diagnostic Test												
Heteroscedasticity: White	26.14		56.09***		9.27		37.11		10.33		60.24***	
Test	1.90		1.86		1.84		1.84		1.904		1.87	
Durbin Watson												

***, ** and * are significant at 1%, 5% and 10% respectively.
Standard errors and t–stats with significant heteroscedasticity problem are adjusted using White's (1980) covariance matrix.

Our samples include 283 IPO stocks listed on Bursa Malaysia from 1998 to 2008. EWMABAHR12, EWMABAHR24 and EWMABAHR36 are equal weighted market-adjusted-buy-and-hold-return calculated for 12, 24 and 36-month respectively. MTURN12, MTURN24 and MTURN36 are monthly turnover for 12, 24 and 36-month from the listing date respectively, calculated as percentage of monthly trading volume divided by the number of shares outstanding. TV12, TV24 and TV36 are monthly turnover-volatility ratio

calculated as turnover ratio divided by the standard deviation of stock market return for the period of 12, 24 and 36-month respectively. MAIR5 is the difference between the closing price of 5th days after the IPO and the IPO offer price, and adjusted for KLCI. SIZE is the natural logarithm of firm size, measured by the market capitalisation after listing. BOARD is a dummy for board of listing on Bursa Malaysia, value '1' is assigned for IPO firms listed on main board and '0' for second board. The market-to-book ratio (MB) is measured by the market value of equity after listing divided by common shareholders' equity.

Table 6(b)
Cross sectional regression of proxies of liquidity with VWMABAHR

Dependent Variables	VWMABAHR12				VWMABAHR24				VWMABAHR36			
	Step 1		Step 2		Step 1		Step 2		Step 1		Step 2	
Independent Variables:	β	t–stat	β	t–stat	β	t–stat	β	t–stat	β	t–stat	β	t–stat
Control Variables												
MAIR5	–1.84E–04	–1.293	–1.83E–04	–1.333	–4.16E–05	–1.277	–4.32E–05	–1.398	–2.40E–05	–1.155	–2.52E–05	–1.256
SIZE	–0.006	–0.973	–0.006	–0.974	–0.001	–0.896	–0.001	–0.855	–0.001	–0.895	–0.001	–0.860
BOARD	0.012	1.008	0.012	1.018	0.002	0.814	0.002	0.878	0.004	0.327	0.001	0.427
MB	0.023	1.280	0.023	1.280	0.005	1.265	0.005	1.269	0.040	1.488	0.004	1.471
Constant	0.361	1.033	0.365	1.026	0.076	1.014	0.070	0.895	0.040	0.851	0.034	0.708
Model Primary Explanatory Variables												
MTURN			6.15E–05	0.301			–1.10E–04	–1.026			–1.13E–04	–0.762
TV			–0.001	–0.496			0.002**	2.060			0.001	0.997
F–Value	6.729***		4.776***		4.926***		3.632***		3.696***		2.868***	
R^2	0.108		0.108		0.082		0.085		0.063		0.068	
Adjusted R^2	0.092		0.086		0.065		0.061		0.046		0.044	
R^2 change			0.000				0.003				0.005	
Diagnostic Test												
Heteroscedasticity: White Test	209 00.98***		212.51***		176.90***		182.45***		173.22***		197.61***	
Durbin Watson	1.98		1.98		2.23		2.21		2.00		1.99	

***, *** and * are significant at 1%, 5% and 10% respectively.
Standard errors and t–stats with significant heteroscedasticity problem are adjusted using White's (1980) covariance matrix.

The significant positive relation between liquidity and IPO stock returns on Bursa Malaysia is inconsistent with prior findings in developed markets and the liquidity premium theory of Amihud and Mendelson (1986, 1989), which present the concept that more liquid stocks have lower expected return than other firms. This liquidity premium theory proposes that holders of less liquid stock will demand higher expected return as a result of bearing more liquidity risk. However, this study is in line with Abdul Rahim and Mohd Nor (2006, 2008) who found negative liquidity premium in the Malaysian stock market as well as Rowenhorts (1991) and Dey (2005) for other emerging market data. This finding demonstrates higher liquidity assets are compensated by higher return. Thus, the negative liquidity premium found in the Malaysian stock market also affects the

return of IPO stocks. This is justifiable as IPO stocks have bigger negative liquidity premium since the stocks are found to be more liquid than non-IPO firms stocks (Eckbo & Norli, 2005). Furthermore, this contradictory finding is not an unusual trend in emerging market because Pastor and Stambaugh (2003) clarify that the value of portfolio that is more susceptible to liquidity drops dramatically owing to macroeconomic shocks that threatens market liquidity, forcing the affected investors to liquidate their stocks. In the same line of argument, a possible explanation for this finding could be due to the behaviour of investors as explained by Sapian, Yong, Mohd Nor and Abdul Rahim (2011). If the investors feel the level of liquidity is high, they would expect to yield a higher return on the IPOs. As a result, the Malaysian investors are willing to purchase shares at a higher price for higher liquidity IPO shares. The more frequent IPOs are traded after listing, the more likely it will attract attention and be more demanded by investors which subsequently create pressure on IPO prices and therefore their returns.

As for the control variables, market adjusted initial return (MAIR5) is found to be a significant predictor for EWMABAHR12 and EWMABAHR24, but not a significant predictor for all VWMABAHR regressions and EWMABAHR36. As documented in the literature, findings on the relationship between MAIR5 and MABAHR are inconclusive. However, the insignificant relationship between MAIR5 and EWMABAHR36 is consistent with that of Yong, Yatim and Sepian (1999) and Chong (2009) as their three-year MABAHR is equivalent to 36-month period. Furthermore, the market-to-book value has no significant relation with EWMABAHR and VWMABAHR for all period of analysis. In addition, SIZE is found to be a significant predictor for 36-month EWMABAHR. The positive sign of the coefficient indicate bigger IPO firms perform relatively well in long-term. This is inconsistent with evidence of superior performance for small IPO firms found by Ahmad Zaluki et al. (2007) and Jelic et al. (2001). Although insignificant, the findings in VWMABAHR supported the superior performance of small IPO firm in all period of analysis. Meanwhile BOARD of listing positively influence return in all period of analysis but the relationship is only significant for 12-month EWMABAHR. This indicates IPO listed on main board have greater long-term performance only after the first year of listing. Thereafter, consistent with Ahmad-Zaluki et al. (2007) there is no difference between the performances of IPOs listed on Main Board and Second Board of Bursa Malaysia.

Overall, all the regression results for H1 exhibit lower degree of explanatory power, with the strongest model shown in regression VWMABAHR12 accounted for 8.6% adjusted R^2. However, despite poor explanatory power the expected signs of monthly turnover are as predicted and are consistent with the earlier results in the Pearson correlation analysis for all

EWMABAHR regressions. Meanwhile, the expected signs of MTURN for VWMABAHR regressions are only consistent with Pearson correlation for VWMABAH12. The expected signs of turnover volatility ratio (TV) on the other hand are mixed. It is consistent with prediction of positive relation for EWMABAHR36, VWMABAHR24 and VWMABAHR36. Based on the results discussed above, H1 is substantiated with regards to equal-weighted market-adjusted-buy-and-hold-returns when monthly turnover is the proxy for liquidity. There is insufficient evidence to validate the same relationship for VWMABAHR as there is only a weak link found between TV24 and VWMABAHR24. Besides, the regression model of this study has a satisfactory goodness of fit with significant F-values ($\rho < 0.001$). Collectively, this model is able to provide a significant predictive power in explaining the relation between liquidity and long-term IPO returns.

The effect of government ownership on the relation between liquidity and return

Subsequently, to answer H2 using Model 2, we examine the moderating effect of government ownership on the relationship between liquidity and long-term return. The results of regression are reported in Table 7(a) for EWMABAHR and 7(b) for VWMABAHR. Despite the significant F-values, step 1 of the model found that GOVT alone has no significance influence on the long-term return of both EWMABAHR and VWMABAHR for all period of analysis. This finding is consistent with Paudyal et al. (1998) and Ahmad-Zaluki et al. (2007) that there is no evidence of significant differences in the long run performance between government related or privatisation IPOs and private IPOs. However, with regards to interaction between GOVT dummy and liquidity proxies (step 2), the results indicate that monthly turnover of GOVT has a significant positive influence on EWMABAHR12 but negative influence on EWMABAHR24 and 36. Although the negative sign of relationship is not as predicted, the negative influence of government ownership IPOs monthly turnover is significant for EWMABAHR36. Turnover volatility ratio of government ownership IPOs on the other hand significantly and positively influences EWMABAHR24 and EWMABAR36 as predicted. Moreover, based on Table 7(b) monthly turnover of government ownership IPOs has no significant influence on VWMABAHR for all period of analysis. Nonetheless, turnover-volatility ratio of government ownership IPOs significantly and positively predicts VWMABAHR24. From the finding we can summarise that government ownership positively and significantly moderate the relation between liquidity and long-term return mostly through turnover volatility ratio. On the other hand, the government ownership positively and significantly moderate monthly turnover proxy of liquidity and return only for 12-month after listing but negatively moderate the relationship after 24 and 36 month of listing.

The results show that the positive effect of government ownership outweighs the negative effect of concentrated ownership. The government reputation seems to have a significance influence to boost confidence among investors to trade the stocks which eventually enhance the long-term performance of the firms. This result refutes the view of the former Chief Executive officer of Bursa, Malaysia Dato' Yusli Bin Mohamed Yusoff that substantial shareholding by government in top-tier companies partially contributes to the liquidity issue in the Malaysian capital market. The explanation to this finding might be due to positive perception of investors on the liquidity and return of government owned IPO shares. The investors are willing to purchase government owned shares at a higher price for higher liquidity. As argued earlier, greater demand for the stocks will creates pressure on IPO prices and therefore their returns. Even though the price goes down, the loss-averse investors will keep the stock hoping that over time they can sell for a profit and realise a gain. At the same time, investors will continue buying the stocks at the lower price. This favourable treatment frequently happens to stocks with government shareholding because the investors believe sooner or later there will be good news from the company and the price will go up for them to realise the profit.

Our samples include 283 IPO stocks listed on Bursa Malaysia from 1998 to 2008. EWMABAHR12, EWMABAHR24 and EWMABAHR36 are equal weighted market-adjusted-buy-and-hold-return calculated for 12, 24 and 36-month respectively. MTURN12, MTURN24 and MTURN36 are monthly turnover for 12, 24 and 36-month from the listing date respectively, calculated as percentage of monthly trading volume divided by the number of shares outstanding. TV12, TV24 and TV36 are monthly turnover-volatility ratio calculated as turnover ratio divided by the standard deviation of stock market return for the period of 12, 24 and 36-month respectively. MAIR5 is the difference between the closing price of 5th days after the IPO and the IPO offer price, and adjusted for KLCI. SIZE is the natural logarithm of firm size, measured by the market capitalisation after listing. BOARD is a dummy for board of listing on Bursa Malaysia, value '1' is assigned for IPO firms listed on main board and '0' for second board. The market-to-book ratio (MB) is measured by the market value of equity after listing divided by common shareholders' equity. GOVT are derived from government privatisation companies, companies that have shareholding by government link investment corporations (GILCs) and also the subsidiary of the above two categories. Value '1' is assigned to GOVT IPOs and '0' otherwise. GOVT*MTURN is the interaction between GOVT dummy and monthly turnover and *GOVT*TV is the interaction between GOVT dummy and turnover volatility.

Table 7(a)
Cross sectional regression of proxies of liquidity with EWMABAHR: The effect of government ownership

Dependent Variables	EWMABAHR12				EWMABAHR24				EWMABAHR36			
	Step 1		Step 2		Step 1		Step 2		Step 1		Step 2	
Independent Variables:	β	t–stat	β	t–stat	β	t–stat	β	t–stat	β	t–stat	β	t–stat
Control Variables												
MAIR5	–0.014**	–2.225	–0.013**	–2.293	–0.008**	–2.409	–0.008**	–2.394	–0.005	–1.402	–0.005	–1.430
SIZE	–0.078	–1.444	–0.059	–1.142	0.124	1.424	0.126	1.446	0.118**	2.031	0.123**	2.054
BOARD	0.806**	1.977	0.725*	1.788	0.497	1.554	0.504	1.574	0.366	1.298	0.396	1.408
MB	0.377	1.458	0.387	1.616	0.117	0.656	0.126	0.712	0.014	0.094	0.013	0.089
Constant	2.983	0.921	1.746	0.578	–2.265	–0.891	–2.043	–0.801	–3.218	–1.366	–2.983	–1.236
Model Primary Explanatory Variables												
MTURN			0.035	1.211			0.059**	2.493	0.035*	1.654	0.046**	2.056
TV			–0.195	–0.687			–0.154	–0.779	0.075	0.433	–0.015	–0.083
GOVT	0.057**	2.053	2.423	0.953	0.054**	2.411	–3.835*	–1.872	0.161	0.566	–2.482*	–1.801
GOVT*MTURN	–0.266	–0.987	0.219**	2.567	–0.038	–0.199	–0.065	–0.880	1.754*		–0.099*	–1.942
GOVT*TV	0.636	1.226	–0.993	–1.320	0.030	0.082	1.145*	1.784	0.049		0.909**	2.164
F–Value	2.11**		2.796***		2.276**		2.23**		0.021		1.692*	
R^2	0.058		0.093		0.062		0.076		0.001		0.059	
Adjusted R^2	0.031		0.060		0.035		0.042				0.024	
R^2 change	0.005		0.035**		0.000		0.014				0.010	
Diagnostic Test												
Heteroscedasticity: White	65.24**		69.80*		41.31		51.32		66.04**		87.44***	
Test Durbin Watson	1.87		1.88		1.83		1.83		1.87		1.86	

***, ** and * are significant at 1%, 5% and 10% respectively.
Standard errors and t–stats with significant heteroscedasticity problem are adjusted using White's (1980) covariance matrix.

Our samples include 283 IPO stocks listed on Bursa Malaysia from 1998 to 2008. EWMABAHR12, EWMABAHR24 and EWMABAHR36 are equal weighted market-adjusted-buy-and-hold-return calculated for 12, 24 and 36-month respectively. MTURN12, MTURN24 and MTURN36 are monthly turnover for 12, 24 and 36-month from the listing date respectively, calculated as percentage of monthly trading volume divided by the number of shares outstanding. TV12, TV24 and TV36 are monthly turnover-volatility ratio calculated as turnover ratio divided by the standard deviation of stock market return for the period of 12, 24 and 36-month respectively. MAIR5 is the difference between the closing price of 5th days after the IPO and the IPO offer price, and adjusted for KLCI. SIZE is the natural logarithm of firm size, measured by the market capitalisation after listing. BOARD is a dummy for board of listing on Bursa Malaysia, value '1' is assigned for IPO firms listed on main board and '0' for second board. The market-to-book ratio (MB) is measured by the market value of equity after listing divided by common shareholders' equity. GOVT are derived from government privatisation companies, companies that have shareholding by government link investment corporations (GILCs) and also the subsidiary of the above two categories. Value '1' is assigned to GOVT IPOs and '0' otherwise. GOVT*MTURN is the interaction between GOVT dummy and monthly turnover and *GOVT*TV is the interaction between GOVT dummy and turnover volatility.

Table 7(b)
Cross sectional regression of proxies of liquidity with VWMABAHR: The effect of government

Dependent Variables	VWMABAHR12				VWMABAHR24				VWMABAHR36			
	Step 1		Step 2		Step 1		Step 2		Step 1		Step 2	
Independent Variables:	β	t–stat	β	t–stat	β	t–stat	β	t–stat	β	t–stat	β	t–stat
Control Variables												
MAIR5	–1.82E–04	–1.331	–1.78E–	–1.326	–4.24E–05	–1.385	–3.99E–05	–1.313	–2.48E–05	–1.230	–2.37E–05	–1.136
SIZE	–0.006	–0.963	04	–0.955	–0.001	–0.763	–0.001	–0.756	–0.001	–0.770	–0.001	–0.773
BOARD	0.013	1.037	–0.005	1.010	0.003	1.054	0.002	1.014	0.001	0.630	0.001	0.711
MB	0.023	1.280	0.012	1.281	0.005	1.267	0.005	1.298	0.004	1.470	0.004	1.426
Constant	0.351	1.019	0.023	1.006	0.063	0.822	–0.064	0.831	0.030	0.630	0.031	0.637
			0.336									
Model Primary Explanatory Variables												
MTURN			–2.00E–	–0.755			–9.00E–05	–0.875			–6.62E–05	–0.697
TV			04	–0.057			1.15E–04	0.217			2.48E–04	0.564
GOVT	8.37E–05	0.414	–9.50E	0.398	–8.88E–05	–0.876	–0.047***	–3.512	–9.39E–05	–0.677	–0.040	–1.083
GOVT*MTURN	–0.001	–0.564	05	1.355	0.001*	1.906	–2.45E–04	–0.638	0.001	0.960	–0.001	–0.560
GOVT*TV	–0.011	–1.057	0.020	–0.887	–0.005	–1.587	0.011***	2.950	–0.003	–1.282	0.011	0.951
F–Value	4.271**		0.003		3.575***		3.819***		2.787***		3.435***	
R^2	0.111		–0.015		0.095		.123		0.075		0.112	
Adjusted R^2	0.085		3.685***		0.068		0.091		0.048		0.079	
R^2 change	0.002		0.119		0.010		0.029**		0.000		0.037**	
			0.087									
			0.008									
Diagnostic Test												
Heteroscedasticity:	22.55***		237.65***		193.26***		223.90***		219.71***		237.43***	
White Test	1.97		1.98		2.21		2.20		1.99		1.99	
Durbin Watson												

***, *** and * are significant at 1%, 5% and 10% respectively.
Standard errors and t–stats with significant heteroscedasticity problem are adjusted using White's (1980) covariance matrix.

Overall the regression results for Model 2 exhibit better degree of explanatory power than regression results for Model 1. It has significant F-values for all period of analysis. As such the study found evidence that government ownership has a significant influence on the relation between liquidity and long-term return. The influence of government ownership on the positive relation between liquidity and long-term return is found mostly significant for EW analysis. In short, H2 is substantiated for EWMABAHR as the evidence indicates IPO stocks with government ownership have a stronger influence on the positive relation between liquidity and long-term return. Nevertheless, there is insufficient evidence to validate the case for VWMABAHR. The only significant effect is found between government IPOs turnover volatility and VWMABAHR24.

CONCLUSION

The results for the cross-sectional relation between liquidity and IPO stock returns is consistent with the finding of Engku-Chik (2006) and Abdul Rahim and Mohd Nor (2006) for long term performance on season stocks and Jun et al.

(2003) finding for emerging market of positive and significant relation. This finding is inconsistent with prior findings in developed markets and the liquidity premium theory of Amihud and Mendelson, (1986, 1989) that holders of less liquid stock will demand higher expected return as a result of bearing more liquidity risk. This study agrees with Abdul Rahim and Mohd Nor (2006) who found negative liquidity premium in the Malaysian stock market. The finding demonstrates that higher liquidity stocks are compensated with higher return. However, the negative liquidity premium found in the Malaysian stock market affects the return of IPO stocks as well. This is justifiable as IPO stocks have bigger negative liquidity premium since the stocks are found to be more liquid than non-IPO firms stocks (Eckbo & Norli, 2005). The result of this study is also akin to Burrowes et al. (2004) who reveal the fact that the more active the trading of IPO stocks in the initial period, the greater the returns and trading one year later.

Finally, the moderating effect of government shareholding on the relationship between liquidity and long-term return is found to be significant for equally weighted return. Although the concentrated ownership found in the Malaysian companies especially within government owned companies are expected to have a negative effect and weaken the relationship between liquidity and return as claimed, the credibility of government support in ensuring the companies do not fail either financially or other means of support boosts confidence among investors or traders to trade the government owned stocks. As such, based on the findings we can ascertain that the positive effect outweighs the negative effect of the government shareholding in the Malaysian IPO firms.

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