

A Comparative Study of Initial Public Offerings in Hong Kong, Singapore and Malaysia

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Published online: 3 June 2015

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ABSTRACT: This paper presents the findings of a comparative study on the performance of the initial public offerings (IPOs) of shares listed on the Hong Kong Stock Exchange (HKX), Singapore Exchange (SGX) and Bursa Malaysia (MYX). One indicator of the success of an IPO is its subscription rate, which can be used as a proxy for the level of investor confidence in the stock being offered. This paper examines the relationship between the performance of an IPO and its subscription rate, and the corporate factors that may affect an investor's decision to subscribe to an IPO. A previous study conducted in Hong Kong (Ho, 2013) did not find support for the effect of the four corporate factors, namely size, managerial ownership prior to the IPO, industry differences and company age, on the subscription decision. However, managerial ownership prior to the IPO was found to be highly correlated with good performance, which could be attributed to a low agency cost in situations where managerial ownership is substantial. Further evidence from Singapore and Malaysia can help to shed light on the importance of agency cost in the pricing of IPOs.

Keywords: Agency cost, initial public offering, stock performance, subscription rate

JEL code: G15

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The paper was presented at the 5th World Accounting Frontiers Series Biennial Conference 2015 organised by the University of Macau on 29 May 2015. The author would like to acknowledge the financial support of a research grant by the Hong Kong Nang Yan College of Higher Education (NYC).

1. Introduction

The excess returns on initial public offerings (IPOs) on their debut are often reported in the news headlines of the financial press. Some hot IPOs are oversubscribed not merely by several but by several hundred times, which freezes millions of investment dollars. One indicator of IPO success is its subscription rate, which can be used as a proxy for the level of investor confidence in the stock being offered.

A research study published by the Securities and Futures Commission (SFC) of Hong Kong (2007) showed that in 2006, most IPOs performed well on their debut and remained strong thereafter, with an average gain of 26% on debut and 32% one month after listing. Relative to the performance of the Hong Kong Hang Seng Index (HSI), the average gain was 28% higher one month after listing. These abnormal IPO returns were substantial despite the financing cost of subscription (Fung et al., 2004). Leung and Menyah (2006) showed that the issuer underpricing cost of new share issues is on average only 14% of headline underpricing. When interest on application funds is taken into account, the net issuer underpricing cost reduces to just around 7% of headline underpricing.

The SFC study concluded that there is no direct relation between IPO performance and the size of the company, or the sector to which it belongs. The IPO performance of mainland Chinese enterprises was generally better than that of Hong Kong companies, reflecting strong investor interest in the stocks of the former and the robust economic growth of mainland China.

However, Fung and Che (2009) found that the issue size explains the demand for H-share and red-chip IPOs, and that the subscription rate is positively related to the returns of prior IPO issues. They attributed the higher return to H-share IPOs to the demand factor, which can be explained by their issue size, and suggested that further research is needed to determine whether

a unique agency cost is present for China-related IPOs. This raises the question of how to value the shares of such companies (Kim & Ritter, 1999).

Clarkson et al. (1992) found empirical evidence that the market responds positively to earnings forecasts as signals of firm value. This raises the possibility that managers of firms going public may manage the earnings reported in their prospectuses in the hope of receiving a higher price for their shares. Mather et al. (2000) argued that management has incentives to present the company in the best position to maximise the proceeds of the share issue. Additional relevant non-financial information is expected to lower the cost of equity capital because an increased level of disclosure lowers the level of uncertainty of the precise valuation of the company (Botosan, 1997; Verrecchia, 2001; Ho & Chan, 2009).

Evidence from Hong Kong (Ho, 2013) did not provide support for the effect of the four corporate factors, namely size, managerial ownership prior to the IPO, industry differences and company age, on the subscription decision. However, managerial ownership prior to the IPO was found to be highly associated with good performance, which could be attributed to a low agency cost in situations where managerial ownership is substantial. Further evidence from Singapore and Malaysia can help to shed light on the importance of agency cost in the pricing of IPOs.

Ho (2013) studied the performance of IPOs listed on the HKX by first investigating the effect of subscription rate on IPO performance from 2008 to 2010, and, second, by examining the influence of corporate factors such as industry differences, managerial ownership prior to the IPO, company size and company age on the subscription decision. This paper extends the study of the oversubscription of IPOs in Hong Kong to Singapore and Malaysia, the stock markets of which have similar financial characteristics, as listed in Table 1. The stock exchanges in Hong Kong (HKX) and Singapore (SGX) were officially liberalised in the 1970s whereas the

Malaysian market (MYX) was officially liberalised in the 1980s.

Table 1
Financial characteristics of stock markets in
Hong Kong (HKX), Singapore (SGX) and Malaysia (MGX)

Financial characteristics of stock market	HKX	SGX	MYX
Stock market official liberalisation date	Jan 1973	Jun 1978	Dec 1988
Foreign ownership limit	100%	100%	100%
Dividend repatriation	Free	Free	Free
Capital repatriation	Free	Free	Free
Withholding taxes on dividend	0%	0%	0%
Taxes on capital gains	0%	0%	0%
Corporate income tax rate	16.5%	17%	25%

Sources: Wong et al. (2004) & KPMG (2013)

However, in terms of the indicators of stock market development in Table 2, Hong Kong appears to rank first, Singapore second and Malaysia third, as indicated by market capitalisation of listed companies (329.47:163.72:162.73), total value of stocks traded (257.29:93.59:67.45), and turnover ratio of stocks traded (71.69:60.25:39:10), all expressed in percentages of GDP. The US stock market, being the most developed, is presented as a point of comparison.

Table 2
Indicators of stock market development (averages over 1990-2012) in
Hong Kong (HKX), Singapore (SGX), and Malaysia (MYX)

	HKX	SGX	MYX	US
GDP per capita (constant 2005 US\$)	24,263	25,089	4,998	38,425
Listed domestic companies, total	856	376	756	6,267
Market capitalisation of listed companies (% of GDP)	329.47	163.72	162.73	114.51
Stocks traded, total value (% of GDP)	257.29	93.59	67.45	176.20

Stocks traded, turnover ratio (% of GDP)	71.69	60.25	39.10	150.01
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Source: Bayraktar (2014)

The remainder of this paper is structured as follows. The empirical model is discussed in section two, and the sample selection is described in section three. Section four provides the data analysis and empirical results. Section five concludes the paper.

2. Empirical model

One of the indicators of IPO success is the subscription rate (SUR), which is used as a proxy for the level of investor confidence in the stock being offered. Correlation and regression analyses are used to study the relationship between the SUR and the annual holding gain (AHG) of an IPO and the various corporate factors that may influence the subscription decision.

Regression analysis was performed to investigate 1) the effect of the SUR of an IPO on its AHG, and 2) the corporate factors that may influence the level of subscription being made. The following two multiple regression equations were used:

$$AHG_i = \alpha_0 + \beta_1 SUR_i + \beta_2 SIZE_i + \beta_3 OWN_i + \beta_4 IND_i + \beta_5 AGE_i + \varepsilon_i \quad (1)$$

(+ve)

and

$$SUR_i = \alpha_0 + \beta_1 SIZE_i + \beta_2 OWN_i + \beta_3 IND_i + \beta_4 AGE_i + \varepsilon_i, \quad (2)$$

where

- AHG_i = Annual holding gain of an IPO in percentage;
- SUR_i = Subscription rate of the IPO – a multiple of the available shares;
- SIZE_i = Size of the company – the natural logarithm of the number of employees;
- OWN_i = Managerial ownership prior to the IPO as a percentage of the issued capital;
- IND_i = Industry dummy variable – equal to 0 if the company is in the low tech sector and 1 if it is in the high tech sector; and
- AGE_i = Age dummy variable – equal to 0 if the company has been incorporated for 10 years or less and 1 if it has been incorporated for more than 10 years prior to the IPO.

The first null hypothesis is H₀: β₁ = 0 in regression equation 1; that is, the subscription rate, which serves as a proxy for the level of investor confidence in the IPO, has no effect on its

performance. The expected sign of β_1 is positive because a high subscription rate represents a high level of investor demand, which should provide a high rate of return for the investment. All of the other independent variables serve as control variables.

The second null hypothesis is $H_0: \beta_1 = \beta_2 = \beta_3 = \beta_4 = 0$ in regression equation 2; that is, the corporate factors of company size, managerial ownership prior to the IPO, industry differences and company age have no influence on the subscription rate of an IPO.

3. Sample selection

The Hong Kong sample has 59 IPOs randomly selected from 2008 to 2010: 17 from 2008, 19 from 2009, and 23 from 2010. They have an average subscription rate (SUR) of 109 times, ranging from a low of 1.1 to a high of 722.0. The average price-to-book ratio (PBR) of companies is 2.45 times, ranging from a low of 0.88 to a high of 6.23. The average annual holding gain (AHG) is 54%, ranging from a low of -57% to a high of 331%. Among the sample companies, 15 are in the high-tech (IT and technology, pharmaceutical and research) and 44 are in the low-tech (production, trade and services) sectors. Twenty one are young companies incorporated for 10 years or less, and 38 are mature companies incorporated for more than 10 years. The sample profile is displayed in Table 3.

The Singaporean sample has 56 IPOs randomly selected from 2008 to 2012: 16 from 2008, 4 from 2009, 19 from 2010, 7 from 2011, and 10 from 2012. They have an average SUR of 61 times, ranging from a low of 0.6 to a high of 310.1. The average PBR is 2.74 times, ranging from a low of 0.15 to a high of 75.5. The average AHG is -11%, ranging from a low of -84% to a high of 118%. Among the sample companies, 12 are in the high-tech and 44 are in the low-tech sectors. Forty seven are young companies incorporated for 10 years or less, and 9 are mature companies incorporated for more than 10 years.

The Malaysian sample has 59 IPOs randomly selected from 2009 to 2012: 4 from 2009, 22 from 2010, 20 from 2011, and 13 from 2012. They have an average SUR of 28 times, ranging from a low of 0.2 to a high of 315.2. The average PBR is 2.34, ranging from a low of 0.12 to a high of 28.7. The average AGH is 0.4%, ranging from a low of -75.2% to a high of 215.1%. Among the

sample companies, 6 are in the high-tech and 53 are in the low-tech sectors. Forty one are young companies incorporated for 10 years or less, and 18 are mature companies incorporated for more than 10 years.

Table 3
Sample description

Industry	High/low Technology	Number of IPOs			
		HKX	SGX	MYX	ALL
IT and technology	High technology	13	12	6	31
Pharmaceutical and research	High technology	2			2
Production	Low technology	40	20	29	89
Trade and services	Low technology	4	24	24	52
Age (prior to the IPO)	Young/mature company				
10 years or less	Young company	21	47	41	109
More than 10 years	Mature company	38	9	18	65
Listing year					
2008		17	16		33
2009		19	4	4	27
2010		23	19	22	64
2011			7	20	27
2012			10	13	23
Total number of companies		59	56	59	174

4. Empirical results

Table 4a provides the descriptive statistics for all of the variables of the three individual stock markets (HKX, SGX, and MYX), including the mean, minimum, maximum and standard deviation. Table 4b provides the descriptive statistics for all of the variables of the three stock markets as a whole.

Table 4a
Descriptive statistics of individual stock market – HKX, SGX & MYX

Variables	Mean			Minimum			Maximum			Std. Deviation		
	HKX N=59	SGX N=56	MYX N=59	HKX N=59	SGX N=56	MYX N=59	HKX N=59	SGX N=56	MYX N=59	HKX N=59	SGX N=56	MYX N=59
AHG	53.7	-10.6	0.4	-57.4	-84.0	-75.2	331.4	117.5	215.1	83.4	43.2	55.1
SUR	108.969	61.134	27.800	1.070	0.550	0.190	722.000	310.100	315.170	161.562	84.547	56.042
PBR	2.454	2.743	2.342	0.875	0.150	0.118	6.232	75.500	28.666	1.039	9.946	3.851
SIZE	6.880	6.217	5.622	2.639	2.398	1.609	12.997	10.125	10.462	1.959	1.402	1.741
OWN	46.462	75.823	91.273	0.000	49.756	56.481	89.210	99.966	98.776	28.313	8.909	7.511
IND	0.254	0.214	0.102	0.000	0.000	0.000	1.000	1.000	1.000	0.439	0.414	0.305
AGE	0.644	0.161	0.305	0.000	0.000	0.000	1.000	1.000	1.000	0.483	0.371	0.464

Table 4b
Descriptive statistics of all 3 stock markets (N = 174)

Variables	Mean	Minimum	Maximum	Std. Deviation
AHG	15.0	-84.0	331.4	68.9
SUR	66.051	0.190	722.000	114.942
PBR	2.509	0.118	75.500	6.067
SIZE	6.240	1.609	12.997	1.788
OWN	71.106	0.000	99.966	25.806
IND	0.190	0.000	1.000	0.393
AGE	0.374	0.000	1.000	0.485

AHG: Annual holding gain in percentage

SUR: Subscription rate of the IPO as a multiple

PBR: Price-to-book ratio

SIZE: Size of company – the natural logarithm of the number of employees

OWN: Managerial ownership prior to the IPO as a percentage of the issued capital

IND: Industry dummy variable (0 if low technology; 1 if high technology)

AGE: Age dummy variable (0 if incorporated for 10 years or less before the IPO; 1 if incorporated for more than 10 years)

Tables 5a, 5b, and 5c show the Pearson correlations of HKX, SGX, and MYX respectively. In HKX, the annual holding gain (AHG) is highly positively correlated with managerial ownership prior to the IPO (OWN), whereas the subscription rate (SUR) is not significantly correlated with any of the corporate factors. The significantly negative correlation between AGE and IND indicates that most high-tech firms are relatively young companies. In SGX, none of the variables are significantly correlated. In MYX, AHG is highly negatively correlated with SUR, whereas SUR is highly negatively correlated with the size of company (SIZE).

Table 5a
Pearson correlations of HKX (N = 59)

Var	AHG	SUR	SIZE	OWN	IND	AGE
AHG	1.000	-0.114 0.389	0.052 0.696	0.314* 0.016	-0.059 0.657	0.046 0.731
SUR		1.000	-0.103 0.436	-0.054 0.685	-0.126 0.343	0.100 0.449
SIZE			1.000	-0.163 0.218	-0.071 0.593	0.229 0.080
OWN				1.000	-0.067 0.615	-0.110 0.407
IND					1.000	-0.298* 0.022
AGE						1.000

*Statistically significant at the five percent level (two tailed).

Table 5b
Pearson correlations of SGX (N = 56)

Var	AHG	SUR	SIZE	OWN	IND	AGE
AHG	1.000	-0.106 0.436	-0.037 0.787	0.058 0.671	-0.009 0.949	-0.091 0.505
SUR		1.000	0.040 0.772	0.022 0.873	-0.032 0.817	0.019 0.887
SIZE			1.000	0.157 0.248	-0.057 0.679	0.198 0.143
OWN				1.000	0.004 0.977	-0.121 0.374
IND					1.000	0.245 0.068
AGE						1.000

*Statistically significant at the five percent level (two tailed).

Table 5c
Pearson correlations of MYX (N = 59)

Var	AHG	SUR	SIZE	OWN	IND	AGE
AHG	1.000	-0.258* 0.049	-0.070 0.600	-0.181 0.170	-0.197 0.134	-0.049 0.713
SUR		1.000	-0.298* 0.022	0.012 0.925	0.246 0.060	-0.147 0.267
SIZE			1.000	0.021 0.875	-0.249 0.058	0.158 0.231
OWN				1.000	0.087 0.514	0.018 0.894
IND					1.000	0.021 0.877
AGE						1.000

*Statistically significant at the five percent level (two tailed).

Table 6 provides the regression results for model 1.

Table 6
Regression results for model 1 of individual stock market – HKX, SGX & MYX

Model 1: $AHG_i = \alpha_0 + \beta_1 SUR_i + \beta_2 SIZE_i + \beta_3 OWN_i + \beta_4 IND_i + \beta_5 AGE_i + \epsilon_i$.									
OLS regression of HKX: $F(5, 53) = 1.476$, Sig. = 0.213, Adj. $R^2 = 0.039$, N = 59.									
OLS regression of SGX: $F(5, 50) = 0.229$, Sig. = 0.948, Adj. $R^2 = -0.075$, N = 56.									
OLS regression of MYX: $F(5, 53) = 1.829$, Sig. = 0.123, Adj. $R^2 = 0.067$, N = 59.									
Variables	β			t-stat			Sig.		
	HKX N=59	SGX N=56	MYX N=59	HKX N=59	SGX N=56	MYX N=59	HKX N=59	SGX N=56	MYX N=59
SUR	-0.098	-0.105	-0.278	-0.747	-0.748	-2.044	0.459	0.458	0.046*
SIZE	0.078	-0.026	-0.180	0.578	-0.175	-1.317	0.566	0.862	0.194
OWN	0.327	0.055	-0.159	2.477	0.382	-1.249	0.016*	0.704	0.217
IND	-0.024	0.005	-0.159	-0.178	0.038	-1.182	0.860	0.970	0.243
AGE	0.066	-0.079	-0.055	0.476	-0.524	-0.426	0.636	0.603	0.672

*Statistically significant at the five percent level.

The first null hypothesis, $H_0: \beta_1 = 0$ in regression equation 1, cannot be rejected for both HKX and SGX but can be rejected for MYX at the five percent significance level. An IPO with a high subscription rate, representing a high level of investor demand for the stock, does not necessarily generate a high rate of return for investors, but it does end up with a low rate of return ex-post for investors in MYX. The null hypotheses for all other beta coefficients also cannot be rejected except for managerial ownership prior to IPO (OWN) in HKX. $\beta_3 = 0.327$ for OWN is statistically significant at the five percent level. The more that share ownership is in the hands of management, the better the company performs after its IPO. This finding lends support to the argument for employing stock options as managerial incentives in executive compensation plans, particularly before companies go public.

Table 7 provides the ordinary least squares (OLS) regression results for Model 2.

Table 7
Regression results for model 2 of individual stock market – HKX, SGX & MYX

Model 2: $SUR_i = \alpha_0 + \beta_1 SIZE_i + \beta_2 OWN_i + \beta_3 IND_i + \beta_4 AGE_i + \epsilon_i$.									
OLS regression of HKX: $F(4, 54) = 0.599$, Sig. = 0.665, Adj. $R^2 = -0.028$, N = 59.									
OLS regression of SGX: $F(4, 51) = 0.041$, Sig. = 0.997, Adj. $R^2 = -0.075$, N = 56.									
OLS regression of MYX: $F(4, 54) = 2.069$, Sig. = 0.098, Adj. $R^2 = 0.069$, N = 59.									
Variables	β			t-stat			Sig.		
	HKX N=59	SGX N=56	MYX N=59	HKX N=59	SGX N=56	MYX N=59	HKX N=59	SGX N=56	MYX N=59
SIZE	-0.145	0.029	-0.233	-1.046	0.201	-1.752	0.300	0.842	0.086
OWN	-0.075	0.020	0.003	-0.551	0.142	0.023	0.584	0.887	0.982
IND	-0.114	-0.036	0.190	-0.811	-0.249	1.445	0.421	0.804	0.154
AGE	0.091	0.025	-0.114	0.636	0.166	-0.886	0.527	0.869	0.380

The corporate factors of company size (SIZE), managerial ownership prior to the IPO (OWN), industry differences (IND) and company age (AGE) were regressed against the SUR in model 2.

The second null hypothesis, $H_0: \beta_1 = \beta_2 = \beta_3 = \beta_4 = 0$ in regression equation 2, cannot be rejected at the five percent significance level. None of the corporate factors seem to account for the oversubscription of IPOs in HKX, SGX, and MYX. The question, then, is on what basis do

potential investors subscribe to IPOs?

5. Conclusion

The primary objective of this study was to examine the relationship between the performance of IPOs and their subscription rates on the stock exchanges of Hong Kong, Singapore, and Malaysia. Although the findings show that a high subscription rate indicates strong investor demand for a stock, that rate is not associated with good performance after the company has gone public. Moreover, the poor performance in Malaysia, where share ownership is highly concentrated in the hands of management, suggests the over-pricing of IPOs when they are highly subscribed.

This study also does not find support for the hypothesised effect of four corporate factors, namely size, managerial ownership prior to the IPO, industry differences and company age, on the subscription decision in all the three stock markets. Future research is thus needed to gain an understanding of how investors distinguish between good and bad investments (Akerlof, 1970).

Nevertheless, management ownership prior to an IPO is found to be highly associated with good performance in Hong Kong, which could be attributed to the low agency cost of high management ownership (Jensen & Meckling, 1976). Whether the good performance is due to the proper alignment of interests between management and shareholders as a result of high managerial ownership prior to the IPO is well worth further investigation.

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