

Equity issuances and agency costs: Additional evidences from East Asia markets

證券發行與代理成本：東亞市場的實證

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Abstract

We investigate the announcement returns and long run performance of SEOs conducted by public firms in four East Asia markets in the period from 2003 to 2015. The shareholder approval is required for equity issuance in our sample. The empirical results show that both the announcement and post-issue abnormal returns are significantly negative. Our findings contradict the evidences in Holderness (2018) that the announcement returns are significantly positive for SEOs when shareholders must vote to approve equity issuances. Our results of long-run underperformance also demonstrate that mandatory shareholder approval does not effectively mitigate the managerial agency problem associated with SEOs.

Keywords: Seasoned equity offerings; Mandatory shareholder voting; Agency cost; Long-run performance

JEL Codes: G14, G30, G32

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摘要

本文檢視東亞股票市場上市公司在現金增資宣告報酬以及長期績效，研究期間為 2003 年至 2015 年。在研究期間內，這些股市的現金增資都需要經過股東大會的核准。Holderness (2018) 主張，若現金增資需要經股東核准，可以降低代理問題，因此其宣告報酬為正，然而本文的實證研究結果顯示，平均的宣告報酬與發行後的長期績效都是為負且統計顯著，與 Holderness (2018) 的主張並不一致。此外，關於負的長期績效，本文的實證發現，需要強制性的股東同意權的規定，並不能實質地改善現金增資所產生的管理者代理問題。

關鍵詞：現金增資、強制性的股東同意權、代理成本；長期績效

JEL Codes: G14, G30, G32

1. INTRODUCTION

Earlier studies show that seasoned equity offerings (SEOs) have, on average, negative announcement returns and poor long-run performance (Loughran and Ritter, 1995 and 1997; Spiess and Affleck-Graves, 1995; Corwin, 2003; Walker and Yost, 2008; Fu, 2010). These findings emerge from equity issuances by U.S. public firms. However, the findings are challenged by the phenomenon of a positive market reaction to equity financing in Hong Kong (Wu, Wang and Yao, 2005). In an attempt to reconcile the disparate findings, Holderness (2018) employs the meta-analysis to explore the announcement returns of the equity issuances, including SEOs, private placements, and right offerings, by public firms in international financial markets outside U.S. He finds that announcement abnormal returns are negative for SEOs for issuers in countries where managers may unilaterally issue equity without shareholder approval. This finding is consistent with the U.S. evidence documented in the earlier studies. However, the announcement returns are significantly positive for SEOs when shareholders must vote to approve equity issuances. Holderness (2018) concludes that mandatory shareholder approval of equity issuance can effectively mitigate the managerial agency problem associated with SEOs.

The results of meta-analysis by Holderness (2018), which focuses on the short-run market reactions only, motivate us to examine thoroughly the performance of the issuers of SEOs. We ask an important research questions: Does mandatory shareholder approval can really dispel the managerial agency problem arisen by the equity issuance? To address on the issue, we empirically examine the announcement return as well as the long-run performance of SEOs conducted by public firms in four East Asian countries, including Hong Kong, Korea, Singapore, and Taiwan, where the shareholder approval is required for equity issuance.

Three important findings emerges from our empirical analysis. First, SEOs tend to have significantly positive stock-price run-ups and higher market-to-book ratios in pre-issue period. It probably attributes to the valuable growth opportunities or market timing (Rhodes-Kropf, Robinson and Viswanathan, 2005; Hertznel and Li, 2010). Second, the average announcement and long-run post-issue abnormal returns for overall sample are

significantly negative. The result is consistent with findings in Loughran and Ritter (1997). Third, when we classify the entire sample by cohort year and by markets, the negative abnormal returns are pervasive and not clustered in specific period or market. Overall, the findings reported in this paper are consistent with the earlier evidences from studies on U.S. (e.g., Corwin, 2003) and are in line with the view of market timing hypothesis as well. Our empirical results contradict the argument in Holderness (2018), which asserts that the mandatory shareholder approval of equity issuance can effectively mitigate the managerial agency problem associated with SEOs.

Moreover, in the multivariate analysis, we find that the long-run post-issue stock performance is negatively related to total institutional ownership. When institutional investors are classified as domestic and foreign institutional investors, the negative association between post-issue performance and institutional ownership is also revealed for domestic and foreign institutional ownership both. These findings are not consistent with the monitoring hypothesis that institutional investors are believed to play in the emerging markets. However, the Hausman's specification test suggests that the institutional ownership and long-run performance suffer from endogeneity problem. Accordingly, we conduct the two-stage least square (2SLS) and conclude that, although the relationship between domestic institutional ownership and long-run performance remains negative, foreign institutional ownership can positively contribute to post-issue performance. Our finding supplements to the literature that foreign institutional investors can monitor local firms and result in higher firm valuation and better operating performance in emerging markets, as documented by Ferreira and Matos (2008), Huang and Shiu (2009), and Bena, Ferreira, Matos and Pires (2017).

Our empirical study complements the debate on the announcement returns and long-run performance of SEOs. Although several studies, as discussed earlier, document that over-valuation and managerial discretion over free cash flow are the driving forces behind the negative announcement returns and long-run underperformance, a recent study challenges such view. Holderness (2018) asserts that mandatory shareholder approval of equity issuance can effectively mitigate the managerial agency problem associated with SEOs. His argument would predict a positive announcement return and better long-run performance on SEOs in four East Asian markets, where equity issuance requires shareholder approval. Our empirical results show that SEOs in these four East

Asia markets suffer negative announcement abnormal returns and poorer long-run performance. We suggest that investors, particularly institutional investors, should effectively monitor the operating activities and usage of the proceeds post-issuance.

We organize the remainder of this paper as follows. Section 2 describes the data used in this study. Section 3 presents the main empirical results and findings. Section 4 summarizes and concludes this study.

2. DATA

2.1 Sample

To construct the sample for this study, we search the Global New Issues from the Thompson Financials Securities Data Company (SDC) Platinum database. Only SEOs announced in four East Asian markets (i.e., Hong Kong, Korea, Singapore, and Taiwan) between January 1, 2003 and December 31, 2015 are considered in our study. We exclude private placements, pure rights offerings, unit issues, and issuances in foreign markets. There are 2,895 completed SEOs in the final sample.

Panel A of Table 1 reports the frequency distribution of SEOs by markets. As shown, Hong Kong has the highest SEO volume (1,692), accounting for 58.5% of our sample. Taiwan has the second highest number (538 offerings; 18.6%) and Korea follows (417 offerings; 14.4%). Singapore has the fewest number (248 offerings; 8.6%). Panel B reports the frequency distribution by cohort year. The SEO volume gradually increase from 132 offerings in 2003 to 323 offerings in 2007, but drops to 140 offerings in 2008, presumably due to the global financial crisis. The market rebounds quickly in 2009, and the new issuance activities in this area still flourish in subsequent years in terms of the SEO volume.

Table 1 Frequency Distribution of SEOs

The table reports the frequency distribution of seasoned equity offerings (SEOs) made by public firms in East Asia markets (Hong Kong, South Korea, Singapore, and Taiwan) from January 2003 to December 2015. The initial sample is obtained from the Thompson Financials Securities Data Company (SDC) Platinum database. We exclude private placements, pure rights offerings, unit issues, and issuances in foreign markets. There are 2,895 completed SEOs in the final sample. Panel A reports the frequency distribution of issuances by markets. Panel B presents the frequency distribution of sample firms by cohort year. Panel C reports the frequency distribution of issuances by industry (using the Fama-French 12-industry classification).

Panel A: Frequency Distribution of SEOs by Markets

Markets	Number of obs.	Percentage of sample
Hong Kong	1,692	58.45
Korea	417	14.40
Singapore	248	8.57
Taiwan	538	18.58
Total	2,895	100.00

Panel B: Frequency Distribution of SEOs by Cohort Year

Year	Number of obs.	Percentage of sample
2003	132	4.56
2004	165	5.70
2005	153	5.28
2006	225	7.77
2007	323	11.16
2008	140	4.84
2009	430	14.85
2010	284	9.81
2011	183	6.32
2012	215	7.43
2013	215	7.43
2014	244	8.43
2015	186	6.42
Total	2,895	100.00

Panel C: Frequency Distribution of SEOs by Industry

Industry	Number of obs.	Percentage of sample
1: Consumer Non-Durables	154	5.32
2: Consumer Durables	92	3.18
3: Manufacturing	332	11.47
4: Energy	61	2.11
5: Chemicals and Allied Products	79	2.73
6: Business Equipment	480	16.58
7: Telecom	24	0.83
8: Utilities	54	1.87
9: Shops	415	14.34
10: Healthcare	113	3.90
11: Finance	410	14.16
12: Other	681	23.52
Total	2,895	100.00

Panel C of Table 1 reports the frequency distribution for issuers' industry on the basis of the Fama-French 12-industry classification. As seen in the industry distribution, our sample is by far representative of economic activities in the East Asia area, with some concentration in the business equipment (16.6% of total sample), shops (14.3%), and manufacturing (11.5%).

2.2 Characteristics of the issuing firms

In this subsection, we present descriptive statistics on firm characteristic variables for our sample of issuing firms. We acquire stock prices and financial data from the Datastream database. All financial variables are the annual or the year-end figures for the year preceding the year of issue. We collect firm-level institutional holding data from the FactSet Equity Ownership database, which provides the holdings of institutional investors on a quarterly basis.¹ We match our initial sample (from SDC) with Datastream using the identifier Datastream Code (DSCD) and with Factset using the identifiers Stock Exchange Daily Official List (SEDOL) and International Securities Identification Number (ISIN). We define these variables in the following discussion.

Our proxies for firm size is market capitalization, which is the consolidated market value of the issuer displayed in US\$ millions and is calculated by multiplying the share price by the number of ordinary shares before the issue. As shown in Table 2, the mean (median) market capitalization is \$809.8 (122.5) million. The proxy for financial leverage is total debt ratio, which is computed as the total debt divided by total book assets. The mean (median) total debt ratio is 41.6% (41.5%). The proxy for operating performance is return on assets (ROA), which is calculated as earnings before interest and taxes (EBIT) divided by total book assets. The mean (median) ROA is -0.6% (2.9%). We calculate R&D expenditure as the research and development expense relative to total book assets. The mean R&D expenditure is 0.5%.

¹ FactSet claims that Equity Ownership covers the holdings of more than 7,300 global institutions in 120 countries. The institutions covered in the database are professional money managers such as mutual funds, investment advisers, pension funds, bank trusts, hedge funds, sovereign wealth funds, insurance companies, and others, as described by Ferreira and Matos (2008). Also refer to the FactSet website: https://www.factset.com/data/company_data/ownership.

Table 2 Summary Statistics for the Firm Characteristics of Issuers

The sample comprises 2,895 SEOs by public firms in East Asia markets (Hong Kong, Korea, Singapore, and Taiwan) from January 2003 to December 2015. This table presents descriptive statistics for the firm characteristics of issuers. *Market capitalization* is the consolidated market value in millions of USD (Datastream item MVC). Market value is calculated as the share price multiplied by the number of ordinary shares in issue. *Financial leverage* is computed as the total liabilities (Worldscope item 03351) divided by total assets (Worldscope item 02999). *Return on assets* is calculated as earnings before interest and taxes (Worldscope item 18191) divided by total assets. *R&D expenditure* is calculated as the research and development expenditure (Worldscope item 01201) divided by total assets. *Market-to-book* is computed as the market value of equity (Worldscope item 08001) divided by common equity (Worldscope item 03501). *Stock price run-ups* is the issuer's prior 1-year buy-and-hold abnormal return (during the period from 12 months before to 1 month before the issuance announcement), and the market index is proxied by Datastream market index. *Total institutional ownership* is the holdings by all institutional investors as a fraction of total shares outstanding (Factset Ownership), while *domestic (foreign) institutional ownership* is the holdings by all domestic (foreign) institutional investors as a fraction of total shares outstanding. Institutional ownership are recorded at the end of quarter preceding the date of announcement. Variables of firm characteristics are winsorized at the top and bottom 1%.

	Mean	Std. Dev.	Q1	Median	Q3
Market capitalization (US\$ million)	809.82	1585.10	43.22	122.51	550.61
Financial leverage (%)	41.61	22.63	23.44	41.54	58.41
Return on assets (%)	-0.62	14.70	-4.58	2.90	8.21
R&D expenditure (%)	0.46	0.97	0.00	0.00	0.22
Market-to-book	2.23	2.10	0.84	1.50	2.71
Stock price run-ups (%)	33.74	101.37	-30.85	2.19	59.21
Total institutional ownership (%)	5.39	8.96	0.00	0.09	7.41
-Foreign institutional ownership	3.46	6.48	0.00	0.01	3.58
-Domestic institutional ownership	1.66	3.12	0.00	0.00	1.78

As mentioned earlier, a firm with a high market-to-book ratio is regarded as a sign of a valuable growth opportunity or overvaluation. Similarly, high stock price run-ups are believed to be an indication of valuable growth opportunities (Carlson, Fisher, and Giammarino, 2006) or being overpriced. We compute market-to-book as the market value of equity divided by common equity. Stock price run-ups is the issuer's prior 1-year buy-and-hold abnormal return (during the period from 12 months before to 1 month before the issuance announcement), and the market index is proxied by Datastream market index.² The mean (median) market-to-book ratio is 2.23 (1.50), and the mean (median) stock price run-ups is 33.7% (2.19%).

² We will introduce the details of buy-and-hold abnormal returns in later section.

Institutional ownership is computed as the number of shares held by the institution divided by total shares outstanding. We consider all types of stock holdings, including ordinary shares, preferred shares, American Depositary Receipts, Global Depositary Receipts, and dual listings because holders of these equity types can exert their influence on the management team. We compute the pre-announcement institutional ownership by aggregating all institutional ownership in the issuer at the quarter-end preceding the announcement of the SEO. As reported in Table 2, the mean (median) total institutional ownership in the issuing firm is 5.4% (0.1%). To classify domestic and foreign institutional investors, we consider the nationality of the institutional investors. A domestic (foreign) institution is defined as an institutional investor in the (other than) country where a stock is listed. As reported, the mean (median) foreign institutional ownership for issuing firms is 3.5% (0.0%), which is higher than the mean (median) domestic institutional ownership of 1.7% (0.0%).

3. EMPIRICAL RESULTS

3.1 Announcement abnormal returns and long-run performance of SEOs

We use the market model to calculate the announcement period abnormal return. First, we run a regression of the firm's daily stock returns on the market return:

$$R_{i,t} = \alpha + \beta \cdot R_{m,t} + \varepsilon_{i,t} \quad (1)$$

where $R_{i,t}$ is the daily return of stock i on date t , $R_{m,t}$ is the daily market return and the market index is proxied by Datastream market index, and α and β are parameters. The parameters are estimated in the period from day -120 through day -11, with day 0 being the initial announcement day of the issue.

We then compute the abnormal returns around the announcement day, as:

$$AR_{i,t} = R_{i,t} - (\hat{\alpha} + \hat{\beta} \cdot R_{m,t}) \quad (2)$$

where $AR_{i,t}$ is the abnormal return on date t , and $\hat{\alpha}$ and $\hat{\beta}$ are estimated parameters from equation (1). We then calculate announcement abnormal return as the cumulative abnormal returns in the period from day -1 through 1, CAR [-1, 1]:

$$CAR [-1, 1] = \sum_{t=-1}^{+1} AR_{i,t} \quad (3)$$

To measure the long-run performance, we follow the method in Loughran and Ritter (1995) to compute the 36-month buy-and-hold abnormal return (BHAR36) following issuance:

$$BHAR36 = \prod_{t=1}^{36} (1 + R_{i,t}) - \prod_{t=1}^{36} (1 + R_{m,t}) \quad (4)$$

In equation (4), $R_{i,t}$ is the monthly return of stock i on month t , $R_{m,t}$ is the monthly market return and the market index is proxied by Datastream monthly market index.

Table 3 Descriptive Statistics for Long-Run Performance of SEOs

The sample comprises 2,895 SEOs by public firms in East Asia markets (Hong Kong, Korea, Singapore, and Taiwan) from January 2003 to December 2015. The announcement abnormal return is the cumulative abnormal returns in the period from day -1 through 1, CAR [-1, 1], with day 0 being the announcement day. The long-run performance of SEOs is measured by BHAR36, which is 36-month buy-and-hold abnormal return following issuance. The market index is proxied by Datastream market index. Statistics with p-values of 0.05 or less are highlighted in bold-faced type.

	Number of obs.	Announcement abnormal return			BHAR36		
		Mean	(p-value)	Median	(p-value)	Mean	(p-value)
Panel A: All sample							
All sample	2,895	-1.26	(0.00)	-1.82	(0.00)	-25.93	(0.00)
Panel B: By cohort year							
2003	132	-1.12	(0.18)	-1.97	(0.02)	-47.21	(0.00)
2004	165	-0.72	(0.45)	-1.84	(0.02)	-22.50	(0.01)
2005	153	-0.63	(0.51)	-1.54	(0.05)	-31.29	(0.00)
2006	225	0.98	(0.23)	-1.04	(0.23)	-7.25	(0.19)
2007	323	5.49	(0.00)	2.53	(0.00)	-21.42	(0.00)
2008	140	-1.99	(0.09)	-2.20	(0.04)	-25.58	(0.00)
2009	430	-2.94	(0.00)	-3.33	(0.00)	-48.37	(0.00)
2010	284	-2.50	(0.00)	-2.43	(0.00)	-39.60	(0.00)
2011	183	-3.39	(0.00)	-2.66	(0.00)	-11.37	(0.03)
2012	215	-4.03	(0.00)	-2.87	(0.00)	8.25	(0.18)
2013	215	-2.30	(0.00)	-1.90	(0.00)	-2.69	(0.61)
2014	244	-2.05	(0.00)	-1.46	(0.00)	-31.55	(0.00)
2015	186	-2.85	(0.00)	-1.89	(0.00)	-40.76	(0.00)
Panel C: By country							
Hong Kong	1,692	-0.84	(0.01)	-2.27	(0.00)	-24.85	(0.00)
Korea	417	-5.62	(0.00)	-4.72	(0.00)	-33.71	(0.00)
Singapore	248	1.42	(0.04)	-0.33	(0.29)	-22.86	(0.00)
Taiwan	538	-0.42	(0.04)	-0.59	(0.00)	-24.71	(0.00)

The results of announcement abnormal returns and long-run performance of SEOs are reported in Table 3. As reported in Panel A of Table 3, the mean (median) CAR [-1, 1] for overall sample of SEOs is -1.26% (-1.82%), and the mean (median) BHAR36 is -25.93% (-44.17%). All of these abnormal return measures are statistically and economically significant. To examine whether the negative abnormal returns cluster in some specific years, we classify all SEOs by cohort years. As reported in Panel B, almost all of the sample years have negative announcement abnormal returns. The only one except is 2007, which has a significantly positive market reaction. It is noteworthy that the announcement abnormal returns are significantly negative in recent years (after 2008). The negative long-run post-issue performance also reveal in almost of sample years. There are 10 out of 13 sample years have significantly negative long-run abnormal returns.

We also classify all SEOs by markets, and report the results in Panel C. As shown, three of four markets have a negative announcement return; the only one exception is Singapore. More importantly, the SEOs in these four markets underperform in the long-run. The mean (median) BHAR36 is -24.9% (-48.4%) for Hong Kong, -33.7% (-42.5%) for Korea, -22.9% (-39.4%) for Singapore, and -24.7% (-36.4%) for Taiwan. These long-run abnormal returns are not only statistically but also economically significant.

3.2 Multivariate analysis for the long-run performance of issuers

Using a multivariate model, we further analyze the influence of factors such as firm characteristics, pre-issue stock returns, and institutional ownership on the post-issue performance of SEOs. The dependent variable is the BHAR36. We report the results in Table 4.

Table 4 Multivariate Analysis of Long-Run Stock Performance

This table presents the regression results of long-run stock performance for SEOs. The sample comprises 2,895 SEOs made by public firms in East Asia markets (Hong Kong, Korea, Singapore, and Taiwan) from January 2003 to December 2015. The dependent variable is the *BHAR36*, which is 36-month buy-and-hold abnormal return following issuance. The market index is proxied by Datastream market index. *Total institutional ownership* is the holdings by all institutional investors as a fraction of shares outstanding. *Domestic (Foreign) institutional ownership* is the holdings by all domestic (foreign) institutional investors as a fraction of total shares outstanding. Institutional ownership are recorded at the end of quarter preceding the date of issuance. *Log (Market capitalization)* is the logarithm of the consolidated market value in millions of USD, and market value is calculated as the share price multiplied by the number of ordinary shares in issue. *R&D expenditure* is calculated as the research and development expenditure divided by total assets. *Stock price run-ups* is the issuer's prior 1-year buy-and-hold abnormal return (during the period from 12 months before to 1 month before the date of issuance), and the market index is proxied by Datastream market index. *Market-to-book* is computed as the market value of equity divided by common equity. *Financial leverage* is computed as the total liabilities divided by total assets. The numbers in parentheses are White (1980) heteroskedasticity-adjusted t-statistics. ***, **, and * indicate statistical significance based on two-sided tests at the 1%, 5%, and 10% level, respectively.

	Dependent variable: BHAR36			
	(1)	(2)	(3)	(4)
Total institutional ownership	-0.458 ** (-2.27)	-0.491 ** (-2.40)		
Domestic institutional ownership			-0.286 (-0.58)	-0.214 (-0.43)
Foreign institutional ownership			-0.634 ** (-2.28)	-0.727 ** (-2.58)
Log (Market capitalization)	7.895 *** (7.20)	7.099 *** (5.89)	8.098 *** (7.01)	7.363 *** (5.98)
R&D expenditure	-52.573 (-0.36)	155.255 (0.86)	-60.292 (-0.41)	156.436 (0.87)
Stock price run-ups	-0.097 *** (-6.76)	-0.100 *** (-6.78)	-0.098 *** (-6.83)	-0.101 *** (-6.88)
Market-to-book	3.477 *** (3.86)	3.325 *** (3.75)	3.461 *** (3.84)	3.298 *** (3.71)
Financial leverage	13.858 ** (1.98)	17.950 ** (2.48)	14.110 ** (2.02)	18.446 ** (2.54)
Intercept	-128.236 *** (-9.91)	-126.996 *** (-8.52)	-130.475 *** (-9.88)	-130.150 *** (-8.54)
Country dummies	No	Yes	No	Yes
Industry dummies	No	Yes	No	Yes
Year dummies	No	Yes	No	Yes
Number of observations	2,895	2,895	2,895	2,895
Adj-R ²	0.040	0.080	0.040	0.080

In the regression (1), the coefficient on *Total institutional ownership* is significantly negative of -0.458 (with a t-statistic of -2.27), indicating that issuers with higher institutional ownership have poorer long-run post-issue performance. In the regression (2), when we control for country-, industry-, and year-effects, the coefficient on *Total institutional ownership* remains significantly negative. When total institutional ownership is decomposed into domestic and foreign institutional ownership (in regressions (3) and (4)), the coefficient of *Foreign institutional ownership* are significantly negative, while the coefficient of *Domestic institutional ownership* is insignificant; this result indicates that the negative association between long-run performance and total institutional ownership is mainly driven by the effect of foreign institutional ownership. The finding is inconsistent with the view that foreign institutional investors can monitor non-US firms and result in higher firm valuation and better operating performance, as documented by Ferreira and Matos (2008), Huang and Shiu (2009), and Bena et al. (2017). It probably attributes to the endogeneity issue, which will be discussed in the later section.

The coefficient on *Log (Market capitalization)* is significantly positive, indicating that larger issuers have better long-run performance than smaller ones. Issuers with higher stock-price run-ups have poorer post-issue performance, being consistent with the prediction of the market-timing hypothesis. The coefficient on *Market-to-book* is significantly positive, suggesting that issuers with valuable growth opportunities have better post-issue performance, which is consistent with the finding documented in Hertz and Li (2010). Interestingly, the coefficient on *Financial leverage* is significantly positive, probably attributable to the benefit that the new equity issuance relieves issuers' financial constraints.

3.3 Endogeneity issue

Our OLS findings indicate that stocks with higher total institutional ownership have worse stock performance over the long run. However, this probably raises an issue regarding the simultaneity bias occurs between institutional ownership and firm performance. Another issue is the unobservable or omitted firm characteristics. These issues violate the basic assumptions for OLS model. To mitigate the effects of an

endogeneity problem on inference, we construct an instrumental variable (IV) and use the two-stage least squares (2SLS) approach. An idea instrument could affect variations in total institutional ownership, but it is unrelated to the long-term performance of the acquirer. We follow Huang and Shiu (2009) in using the lagged market capitalization (*Log (Market capitalization)*) and the lagged *Tobin's Q* as instruments.

We then follow the method in Roberts and Whited (2013) to conduct the Hausman's specification test to verify the necessity of remedy for endogeneity problem. Accordingly, under the null hypothesis of no endogeneity, both the ordinary least square (OLS) and the IV estimators are consistent. Under the alternative hypothesis of endogeneity, only the IV estimator is consistent. We find that the value of the test statistic (chi-squared) for Hausman's test is 20.05 with 7 degrees of freedom and is highly significant (p-value =0.0056) indicating that the IV estimator is more efficient than the OLS estimator.

Table 5 Multivariate Analysis of Long-Run Stock Performance: 2SLS

This table presents the two-stage least square regression results of long-run stock performance for SEOs. The sample comprises 2,895 SEOs made by public firms in East Asia markets (Hong Kong, Korea, Singapore, and Taiwan) from January 2003 to December 2015. In the first stage, the dependent variable is *Total IO* (total institutional ownership), *Domestic IO* (domestic institutional ownership), and *Foreign IO* (foreign institutional ownership), respectively. The dependent variable in the second stage is BHAR36, which is the 36-month buy-and-hold abnormal return following issuance. The independent variables in the first stage, *Log (Market capitalization)* and Tobin's Q, are measured at year-end prior to the date the institutional ownership is recorded. For the definitions of other variables, please refer to Table 4. The numbers in parentheses are White (1980) heteroskedasticity-adjusted t-statistics. ***, **, and * indicate statistical significance based on two-sided tests at the 1%, 5%, and 10% level, respectively.

Dependent Variable	1 st Stage	2 nd Stage	1 st Stage		2 nd Stage
	Total IO	BHAR36	Domestic IO	Foreign IO	BHAR36
	(1)	(2)	(3)	(4)	(5)
Pred. Total IO		-4.063 *** (-5.95)			
Pred. Domestic IO					- 244.026 *** (-5.06)
Pred. Foreign IO					81.024 *** (4.72)
Tobin's Q	-0.620 *** (-5.71)		-0.142 *** (-3.51)	-0.496 *** (-6.24)	
Log (Market capitalization)	3.274 *** (38.35)	17.592 *** (7.68)	0.826 *** (26.49)	2.353 *** (35.26)	15.544 *** (6.65)
R&D expenditure		204.001 (1.13)			238.311 (1.33)
Stock price run-ups		-0.109 *** (-7.51)			-0.094 *** (-6.35)
Market-to-book		0.794 (0.82)			3.168 *** (2.81)
Financial leverage		24.427 *** (3.38)			14.731 * (1.95)
Intercept	-33.059 *** (-31.10)	- *** 235.157 (-9.47)	-7.868 *** (-19.72)	-24.172 *** (-29.58)	-55.667 (-1.25)
Country dummies	Yes	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes
Number of observations	2,895	2,895	2,895	2,895	2,895
Adj-R ²	0.435	0.093	0.253	0.423	0.101

Table 5 presents the results for the IV and 2SLS approach. All Equations (1) to (5) account for the country-, industry-, and year-fixed effects. Equation (1) is a first-stage regression with *Total institutional ownership* as the dependent variable and equation (3) (and (4)) is a first-stage regression for Domestic (Foreign) institutional ownership, whereas the instrument lagged *Log (Market capitalization)* and lagged *Tobin's Q* are considered in the independent variables. The results of the first-stage regression demonstrate the quality of the instruments. For example, as shown in equation (1), the coefficients of lagged *Tobin's Q* and lagged *log (Market capitalization)* in the first stage are -0.620 (t-statistic = -5.71) and 3.274 (t-statistic = 38.35), indicating that lagged market size and market valuation are important determinants for institutional holdings. These results suggest that the instrument variable can explain variations in *Total institutional ownership* as well as *Domestic* and *Foreign institutional ownership*, and confirm the validity of our instrument choice.

In equation (2), the long-run performance is regressed on the fitted values of Total institutional ownership (Pred. Total IO) and firm characteristic variables. The coefficient of Pred. Total IO remains negative and is significantly different from zero. The findings for the second-stage regression confirm the negative relationship between post-issue performance and Total institutional ownership, even after controlling for the potential endogeneity.

However, when Total institutional ownership is decomposed into domestic institutional ownership (Domestic IO) and foreign institutional ownership (Foreign IO), we find that the influences of domestic and foreign institutional investors on post-issue long-run performance become different. In Equation (5), the coefficient on Pred. Domestic IO is significantly negative, which is similar to our earlier findings. In contrast, the coefficient on Pred. Foreign IO is significantly positive, which is contrary to our findings in OLS estimator. This finding is consistent with the view that foreign institutional investors can monitor local firms and result in higher firm valuation and better operating performance (Ferreira and Matos, 2008; Huang and Shiu, 2009; Bena et al. 2017).

3.4 Discussion

Our empirical results show that the issuers of SEOs in the four East Asian markets suffer from negative announcement returns and poor long-run post-issue performance. Since shareholders' approval is required for public offerings in these four markets, our results are not consistent with the prediction of Holderness (2018), who asserts that mandatory shareholder approval of equity issuance can effectively mitigate the managerial agency problem associated with SEOs.

Surprisingly, our multivariate analysis also demonstrates a negative association between long-run performance and the institutional ownership, particularly domestic institutional ownership. The results indicate that institutional investors do not play monitoring roles to improve the performance of issuers of SEOs. These findings are inconsistent with the view of active monitoring activities by institutional investors (e.g., Shleifer and Vishny, 1986; McCahery, Sautner and Starks, 2016). However, in the IV and 2SLS models, we find that the association between post-issue performance and foreign ownership becomes positive after controlling for the endogeneity problem. This finding confirms that foreign institutional investors can play the monitoring role on the issuers in emerging markets (Ferreira and Matos, 2008; Huang and Shiu, 2009; and Bena et al., 2017).

We conjecture that the negative association of institutional ownership with the post-issue performance of issuers is attributed to the positive attitude toward the equity issuance in the proxy voting guidelines. For example, J.P. Morgan state that “... *We will generally vote in favor of equity increases which enhance a company's long term prospects, but we will vote against issuance terms that we consider excessively dilutive.*”³ The Institutional Shareholder Services (ISS), a professional advisory agent for institutional investors voting guidelines, also have similar statements.⁴ Since the agency costs of free cash flow would become severe when firms issue new equity, we suggest that institutional investors should seriously evaluate the fund-raising proposal

³ Refer to Corporate Governance Principles and Proxy Voting Guidelines, February 2019, by J.P. Morgan via <https://am.jpmorgan.com/content/dam/jpm-am-aem/asiapacific/au/en/policies/corporate-governance-policy-voting-guidelines.pdf>.

⁴ For example, for Taiwan market, refer to <https://www.issgovernance.com/file/policy/active/asiapacific/Taiwan-Voting-Guidelines.pdf>. The other three markets are also available upon request.

and the intended use of proceeds, and effectively monitor the operating activities post-issuance.

4. Conclusions

Our empirical results show that SEOs in four East Asian markets, where the shareholder approval is required for equity issuance, have negative announcement returns and long-run poor stock performance. The findings are consistent with the traditional view that issuers of public offerings tend to suffer from over-valuation and managerial discretion over free cash flow. Our results showing that issuers tend to have high pre-issue price run-ups and stocks with higher run-ups have poorer long-run performance are also consistent with the prediction of market-timing hypothesis. However, our empirical results contradict the argument in Holderness (2018), which asserts that the mandatory shareholder approval of equity issuance can effectively mitigate the managerial agency problem associated with SEOs.

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