Does Overseas-Listing Benefit the Shareholder?

Tung-Yueh Pai[1], Chien-Ming Huang[2]*, Yun -Lung Wan[3]

Abstract

This paper aims to investigate whether cross-listed companies experience changes in their ownership structure after the oversea listing to improve the firm performance or exploit the weak shareholder's rights. The conclusions are still ambiguous in the existence of current studies. Therefore, using the sample group of cross-listed companies in the Hang Seng China AH Premium Index from 2005 to 2014, we adopt the two-stage least square method to examine the alignment effects, conflict-of-interest hypothesis or strategic alignment hypothesis. To capture the relevant relationships between firm performance and controlling shareholders, the indicators of accounting-based performance and market-based performance are used in our analysis. The empirical results found that the largest ten shareholders will tend to increase the holding proportions when firm size and leveraged effect increase and the stock price commonly exists in over-reaction. Moreover, when the increase in the controlling shareholders' holdings can improve supervised qualification and increase firm profitability, foreign institutional investors will tend to sell their shares to the largest shareholders after cross-listing. This finding is consistent with the strategic alignment hypothesis. Finally, we conclude that the variation of foreign institutional holdings will provide important information to determine whether the stock price presents a premium or discount.

Keywords: Cross-Listed companies, Alignment effects, Strategic alignment hypothesis

JEL Classification: G1, G3

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[1] Assistant Professor, Department of Institute of Management, Minghsin University of Science and Technology, Taiwan
[2] Assistant Professor, Department of Banking and Finance, TamKang University, Taiwan (*Corresponding Author, E-mail: snapshop68@yahoo.com.tw)
[3] PhD candidate, Tamkang University, Taiwan

1. Introduction

With the rapid development of the Chinese economy, the capitalization of the stock market become the world's major benchmark, and the capitalization of the stock market also presents significant growth. Therefore, the numbers of initial public offerings (IPOs) are persistently increasing. In general, IPOs are marketed to other investors and offer the shares to the market. Although the underwriting process can give minor investors a fair opportunity to participate in the offering, the mispricing problem and information asymmetric problem may exist among investors. In particular, the companies listed in China can be divided into two groups of public and state-owned, and the firm-specific characteristics of non-tradable and tradable stock are different from other countries. Therefore, cross-listing has become a channel for improving liquidity in recent years. Many researchers have been devoted to investigating the motives of cross-listing, observing the variations of firm's value, and capturing the behaviors of controlling shareholders.

Thus far, the conclusions of motives of cross-listings are still ambiguous. There are several reasons to explain why the companies decide to offer their shares. One reason is that the supervised qualification will be improved and effectively enhance the financial capacity when the company has cross-listings. In particular, if the initial price can be accurate pricing, the stock trades will have more liquidity. However, another statement is that the controlling shareholders can sell their shares to other investors through a cross-listing process. When mispricing and information asymmetry exist in the cross-listing process, the agency problem of exploiting weak shareholders will be raised. Consequently, these issues still need to be investigated in the developing stage of the Chinese stock market.

Of primary concern to this paper is a focus on whether the controlling shareholders change their shares after cross-listing to improve the firm performance, which is alignment effects (Bushee, 1998) or to exploit the weak shareholder's rights (Shleifer & Vishny, 1997; Porta *et al*., 1999; Ayyagari & Doideg, 2010), namely, conflict-of-interest hypothesis and strategic alignment hypothesis. In contrast to past studies, we employ two-stage least square method to examine these effects to avoid multicollinearity and use different performance indicators to capture realized relationships among relevant variables. Moreover, considering that

the characteristics of the Chinese stock market are different from other counties, it presents the features of non-tradable stock and tradable stock resulting in increases in a number of cross-listed recent years. Therefore, this study further observes the influences of ownership structure in pre-listing and post-listing using the AH Premium Index components. The controlling shareholders are divided into three major parts: the largest ten shareholders, foreign institutional investors, and stated holdings. It can help us to do our objectives.

The remainder of the paper is organized as follows. Section II is a literatures review related to studies of cross-listings. Section III describes the variables definitions and two-stage least square method. Section IV presents the data sources and descriptive statistics of relevant variables. The estimation and analysis from different models are also reported in this section. Finally, section V summarizes our empirical results and concludes the paper.

2. Literature Review

Stapleton & Subrahmanyam (1997) proposed the segmented markets hypothesis and argued that the initial public process can reduce the equity cost and risk undertaking. Therefore, Karolyi (1998, 2006) examined why do companies pursue to list shares abroad? The author surveyed relevant literature and concluded that a firm may pursue the benefit from a lower cost of capital, the more accessible to global investors, and mitigation of the restriction of international investment barriers. In addition, Bianconia, Chen, & Yoshino (2013) presented empirical evidence on the variations of a firm's value on cross-listing. They indicated that the Sarbanes-Oxley Act of 2002 may have segmented markets, but the market also result in that regulation is more stringent.

On the other hand, the conclusion of Amihud & Mendelson (1986) implied that the liquidity of stock price of cross-listings is dependent on trading system, market structures, and market characteristics. Lang, Lins, & Miller (2003) argued that cross-listed companies get accurate analyst forecasts and increase a firm's value. In addition, Wang & Jiang (2004) found that H-shares behave more similar to Hong Kong stocks than mainland Chinese stocks and provide foreign investors well diversification

opportunities. Similarly, Mittoo (1992), Fanto & Karmel (1997) & Berkman, Nguyen (2010), & Bahlous (2013) also support with the liquidity hypothesis. However, some studies provide different statements. From the perspective of the bonding hypothesis, Stulz (1999) and Reese & Weisbach (2002) noted that cross-listing companies can mitigate the exploitation of small shareholder's rights and agency problems and further obtain lower costs of equity. In addition, these companies provide small shareholder protection well (Abdallah & Goergen, 2008). Doidge, Karolyi, & Stulz (2004) supported the liquidity hypothesis. They argued that the process of cross-listing can decrease the exploitation from large shareholders, along with obtaining lower cost of capital and higher liquidity (Valero, Lee, & Cai, 2009). Similar conclusions can also be found in Huang, Elkinawy, & Jain (2013).

In the ownership structure, Li, Brockmanb, & Zurbruegg (2015) suggested that institutional factors can explain the benefits of cross-listing companies, and given a well corporate governance qualification, foreign investors can provide the advantages of information improvement. Moreover, Jian, Tingting & Shengchao (2011) found that corporate governance is an important factor between the cross-listing strategy and firm performance. Finally, Doidge *et al*. (2009) investigated how firms decide to cross-list in the U.S. The author argued that when companies with high private benefits, controlling shareholders do not choose to cross-list. By these statements, we can infer that cross-listing will affect a firm's performance and stock liquidity, but it depends on corporate governance. In other words, thus far, the Chinese stock market lies in the developing stage. All investors should know whether there is agency problem and information is asymmetric in cross-listing companies.

3. Variables and Empirical models

This paper aims to investigate the listed companies of A shares over H shares in China from 2005 to 2014, which is the company cross market, after initial public offerings (IPO), what are the variations of the proportions of the largest ten shareholder holdings, foreign institutions holding, and state holdings? Whether there is a significant effect on firm performance.

3.1 Variables Definition
1. Dependent variables

In general, the operating efficiency of firm operation can reflect two types. They are currently used in the literature: accounting-based measures, such as return on assets, and market-based measures, such as stock returns. Conceptually, the accounting-based measures use historical data and, hence, constitute an ex-post perspective. In contrast, market-based measures use stock returns ($Return$), which represent how investors or shareholders evaluate firm performance in the future. Therefore, this is an ex-ante point of view. In this study, the Return on Assets (ROA) is defined as net income divided by average total assets. In addition, the stock returns are used to measure market-based performance as is calculated as the closing price at the end of the fiscal year divided by the closing price at the end of the previous fiscal year.

3.1.2 Control variables

Past studies, such as Valero *et al.* (2009), argue that oversea-listing companies with high asset size will obtain lower costs of issue equity than companies with a small size and get higher market liquidities. In addition, Fama & French (2002) and Lipson & Mortal (2009) use the nature logarithm of total assets to measure firm size. They argue that the bankruptcy cost and credit rating, firm size is expected to have high financial capacity, and a positive relationship between firm size and leverage (Huang & Song, 2006). Therefore, this study uses the definitions of the leverage effect in previous studies as the ratio of total debt to total assets.

To isolate the other relevant effects, we also control for the influences of firm growth opportunities, firm-specific risk, and firm age. Intuitively, a high-growth firm might be reluctant to lend more, a lower cost to issue equity, and a stable stock price due to more confidence from market investors. Moreover, from the perspectives of information asymmetry and stability of operating profitability, although mature firms are expected to have high market shares and stable cash flow, this might also reflect lower sale growth. Therefore, there is an uncertain relationship between firm performance and firm age. By above, this study considers firm size ($Size$) measured by the nature logarithm of book value of asset the growth opportunities ($Growth$) using the market to book ratio of equity, the debt ratio ($DebtRatio$) as a ratio of the total liability divided by total asset,

market to book ratio, stock return volatility ($SVolatility$) calculated as three-year standard deviations of stock return, and firm age(Age), which is the length of establishment date of firm.

3.1.2 Independent Variables

Regarding the effects of ownership structure on firm performance, this study uses the proportions of the largest ten shareholders shares ($TenSH$), foreign institutional shares ($InstitSH$) and Chinese government holdings ($GovSH$) to examine whether high ownership concentration exploits weak shareholder benefits after cross-listed in AH shares index. In particular, because of high concentration on foreign institutional holdings and no tradable stock from government holdings, firms with a concentration of controlling shareholders may produce high information asymmetric problems and motive to exploit weak shareholder's rights, resulting in poor firm performance (Shleifer & Vishny, 1997; Porta *et al*., 1999). Therefore, there may be a negative relationship between concentration on controlling shareholders and firm performance. However, from the perspectives of efficient supervise and alignment effects, foreign institutional investors hold advantages of professional technology and information accessibility; they intend to improve supervised qualifications, to increase firm profitability and to decrease agency problems (Bushee, 1998).

However, according to the conflict-of-interest hypothesis and strategic alignment hypothesis, institutional investors tend to corporate with firm managers to exploit weak shareholders. Therefore, concentration on controlling shareholders will negatively affect firm performance (Pound, 1988). Consequently, when a firm process oversea-listing behaviors, it is still ambiguous to conclude from the concentration of ownership structures on firm performance. Finally, past studies such as Glosten & Milgrom (1985) and Bortolotti & Siniscalco (2004) argue that high state shares will make bad corporate governance qualifications and result in low stock liquidities before non-tradable stock reform in 2005. However, the number of shares outstanding rose after non-tradable stock reform. As a result, firm profitability and information efficiency can be expected to improve.

3.2. Model Specification

To do this, this paper follows the research from Ayyagari & Doidge (2010) to extend the sample period from 2008 to 2014, and further to examine the effects of ownership structure and on stock returns. We adopt the two-stage least square (2SLS) method to overcome the collinear problems. Using the companies of AH share, the empirical will provide if the cross-listed companies exploit weak shareholder rights and to replace their own private benefits. The empirical models are as follows.

$$TenSH_{i,t} = Constant + \beta_1 Size_{i,t} + \beta_2 DebtRatio_{i,t} + \beta_3 Growth_{i,t} + \beta_4 SVolatility_{i,t} + \beta_5 Age_{i,t} + \varepsilon_{i,t}^1 \tag{1}$$

$$InstitSH_{i,t} = Constant + \beta_1 Size_{i,t} + \beta_2 DebtRatio_{i,t} + \beta_3 Growth_{i,t} + \beta_4 SVolatility_{i,t} + \beta_5 Age_{i,t} + \varepsilon_{i,t}^2 \tag{2}$$

$$GovSH_{i,t} = Constant + \beta_1 Size_{i,t} + \beta_2 DebtRatio_{i,t} + \beta_3 Growth_{i,t} + \beta_4 SVolatility_{i,t} + \beta_5 Age_{i,t} + \varepsilon_{i,t}^3 \tag{3}$$

For the equations (1) to (3), the dependent variables $TenSH_{i,t}$, $InstitSH_{i,t}$ and $GovSH_{i,t}$ represent the proportions of the largest ten shareholders holding, foreign institutional holding, and state-owned holding, repectively, at i firm at year t. In addition, the control variables include that the $SVolatility_{i,t}$ is the standard deviation of three years of stock returns as a proxy of firm size; the $Size_{i,t}$ is firm size and is denoted by the nature logarithm of book value of asset; the $DebtRatio_{i,t}$ is the total liability divided by total asset; and finally the $Growth_{i,t}$ and $Age_{i,t}$ are market to book ratio and the establishment age, respectively. The $\varepsilon_{i,t}^j$ is the error item and follows the assumption of a normal distribution pattern.

After estimating the first-stage regression, the collinear problem with ownership structure and firm-specific characteristics have been isolated. In the second-stage regression, the net effects of ownership structure from equation (1) to equation (3) are three error terms. On the other hand, considering the influences of listing in AH shares index and state-owned companies, this paper sets up two dummy variables

($PubDummy$, $GovDummy$) to measure the impact of the corresponding variables, for example, when the i bank is the subsidiary of the financial holding, it is set to be 1, and the opposite is set to be 0. According to statements of Stoughton *et al*. (2001) and Sherman & Titman (2002), they point out that accurate pricing of IPO can bring high stock liquidity, but the mispricing of initial offerings will be less liquid. In particular, when a substantial amount of private information is not considered in stock's initial price, it will negatively affect firm's value. Therefore, the behaviors of cross-listing companies might have high information asymmetry. Similarly, Stoughton *et al*. (2001) and Sherman & Titman (2002), Ayyagari & Doideg (2010) investigate whether controlling shareholders of foreign firms to facilitate changes in ownership and control. Empirical results found that controlling shareholders are more likely to sell their shares to foreign investors. The change in voting rights from controlling to foreign investors was found in oversea-listing companies. Consequently, this study builds the two dummy variables to examine the effects of cross-listing companies and state-owned companies. It is as follows:

$$ROA_{i,t} = Constant + \beta_1 Size_{i,t} + \beta_2 DebtRatio_{i,t} + \beta_3 Growth_{i,t} +$$
$$\beta_4 SVolatility_{i,t} + \beta_5 Age_{i,t} + \beta_6 PubDummy + \beta_7 GovDummy +$$
$$\beta_8 \varepsilon_{i,t}^1 + \beta_9 \varepsilon_{i,t}^2 + \beta_{10} \varepsilon_{i,t}^3 + \beta_{11} \varepsilon_{i,t}^1 \times PubDummy + \beta_{12} \varepsilon_{i,t}^2 \times$$
$$PubDummy + \beta_{13} \varepsilon_{i,t}^3 \times PubDummy + \varepsilon_{i,t}^4 \qquad (4)$$

$$Return_{i,t} = Constant + \beta_1 Size_{i,t} + \beta_2 DebtRatio_{i,t} + \beta_3 Growth_{i,t} +$$
$$\beta_4 SVolatility_{i,t} + \beta_5 Age_{i,t} + \beta_6 PubDummy + \beta_7 GovDummy +$$
$$\beta_8 \varepsilon_{i,t}^1 + \beta_9 \varepsilon_{i,t}^2 + \beta_{10} \varepsilon_{i,t}^3 + \beta_{11} \varepsilon_{i,t}^1 \times PubDummy + \beta_{12} \varepsilon_{i,t}^2 \times$$
$$PubDummy + \beta_{13} \varepsilon_{i,t}^3 \times PubDummy + \varepsilon_{i,t}^5 \qquad (5)$$

4. Comparison and Analysis

4.1. Data Sources

This paper focuses our analysis on cross-listed companies listed in the Hang Seng China AH Premium Index (AH Premium Index), which was

launched on 9 July 2007. It measures the absolute price premium of the company of both A-share over H-share listings. The sample data are collected from Taiwan Journal Economic (TEJ) database. In the past three decades, the stock market in China has become a major financial market in the world, and the number of listed companies has increased significantly.

In particular, because institutional transformation makes the ownership structure in Chinese listed companies hold a high proportion of non-tradable shares, the policymaker decides to perform stock reform since 2005 and to accelerate the transformation from non-tradable shares to tradable shares. Therefore, the phenomenon is significantly different from other stock markets and drives many companies to list in Hong Kong. It is called AH shares. By above, to capture the variations of ownership structure of cross-listed companies, using the yearly data the sample period covers from 2005 to 2014. After deleting missing data, the completed data have 272 observations, and the total number of cross-listed companies is 37.

According to our objectives, the relevant variables in financial statements gathered from TEJ include total assets at the end of per year, total liability at the end of per year, and book value in equity at the end of per year. In the ownership structures, the concentrations on major shareholders include the largest ten shareholders shares, foreign institutional shares, and stated-owned shares. Finally, the yearly closing stock price and outstanding shares are also obtained from the TEJ stock price database to measure stock returns and market value in equity.

As for the exclusion criteria of key variables, this paper uses several criteria for the categorization and organization. The main criteria include the following: (1) the company is listed in the AH index constituent in 2014; (2) the parent company with consolidated financial reports has completed data including the information of major shareholders holdings and stock closing price since 2005; if there is any missing data, the company would be excluded; and (3) according to historical statistics from the TEJ database, if the company is unable to be distinguished with reasonable information, it would also be excluded.

4.2. Descriptive Statistics

Using the two-stage least square (2SLS) this study attempts to explore the relationships between firm performance and ownership structure in the companies AH shares index components. The impacts of change in controlling shareholders shares after cross listing are inconsistent in the existent of literatures, which are explained as alignment effects, conflict-of-interest hypothesis or strategic alignment hypothesis Therefore, we gather the related variables from financial statement listed companies in AH shares during 2005 to 2014. The descriptive statistics is presented in Table 1.

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In the firm profitability, the averaged values and standard deviations of both accounting-based performance, ROA, and market-based performance, $Return$, are (0.0441, 0.0466) and (0.0055, 0.2885), respectively. The preliminary results indicate that the performance of cross-listing companies is significantly different. In particular, the range of two performance indicators achieves 46.79% in return on assets and 177.69% in stock return, which are calculated by maximum value minus minimum value. In other words, the information asymmetric problem or market inefficiency may exist among different companies when these companies have cross-listing issues in equity. In addition, by observing the firm-specific characteristics the means of stock return volatility ($SVolatility$) and the establishment time (Age) also present that the mean value is less than standard deviation. The results may be attributed to mispricing of initial offerings.

In terms of other firm-specific characteristics, the averaged values of $Size$, $DebtRatio$, and $Growth$ are 18.2175, 0.1652, and 2.4683, respectively, and the maximum values are 21.6009, 0.5794, and 17.5958, respectively. These results state that the firm size and financial capacity in the whole sample are significantly changed after cross-listing and further

increase stock liquidity (Valero, Lee, & Cai, 2009). However, the extreme growth opportunities measured by market to book ratio can also be inferred that there is a serious information asymmetric problem between young companies and mature companies. Finally, the distribution types of all firm-specific variables present right skew. The mean values are consistently larger than median value.

As for the ownership structures, the averaged proportions of the largest ten shareholders shares, foreign institutional share, and non-tradable state-owned shares are 76.67%, 1.79%, and 19.30%, respectively. The ranges from maximum value to minimum value are 76.15%, 53.73%, and 86.29%, respectively. It presents that the shares of controlling shareholders have significant change in the pre-listed period and the post-listed period. From the perspectives of Ayyagari & Doideg (2010), they argue that companies may have a change in voting rights from controlling to foreign investors. The statements are so far inconsistent, providing detailed examinations are also the major purposes of this study.

Table 1. Descriptive Statistics of the Listed Companies in China AH Premium Index

	mean	std	min.	25%	median	75%	max.
Firm Performance							
ROA	0.0441	0.0466	0.2221	0.0188	0.0417	0.0685	0.2458
$Return$	0.0055	0.2850	0.9424	0.1538	0.0017	0.1892	0.8345
Firm Characteristics							
$SVolatility$	0.9291	1.0429	0.2442	0.4566	0.6202	0.9392	8.3855
$Size$	18.2175	1.3224	15.2340	17.3291	18.1788	19.0457	21.6009
$DebtRatio$	0.1652	0.1360	0.0000	0.0699	0.1327	0.2287	0.5794
$Growth$	2.4683	2.1669	0.5617	1.2628	1.7791	2.9922	17.5958
Age	19.4689	20.0616	2.0000	9.2500	14.0000	20.0000	111.0830
Stockholder Structure							
$TenSH$	0.7667	0.1655	0.2201	0.6565	0.8092	0.8917	0.9816
$InstitSH$	0.0179	0.0875	0.0000	0.0000	0.0000	0.0000	0.5373
$GovSH$	0.1930	0.2473	0.0000	0.0000	0.0200	0.4226	0.8629

Note: The sample is the largest and most liquid mainland China companies with both A-share and H-share listings from 2005 to 2014. The total numbers of cross market companies are 38 after deleting the missing data. In addition, the ROA and $Return$ present the net earnings divided by book value of total asset and yearly stock returns. The $SVolatility$ is the standard deviation of yearly stock returns. The $Size$, $DebtRatio$, $Growth$ and Age are the nature logarithm of book value of asset, the total liability divided by total asset, market to book ratio, and firm age. Finally, $TenSH$, $InstitSH$, and $GovSH$ are the proportion of largest ten shareholder shares, foreign institutional shares, and state shares.

4.2. Regression Results

To do our objectives, because it may have multi-collinearity among independent variables, namely, ownership structure and firm characteristics, to capture the realized effects, the two-stage least square method was proposed to examine our purposes. Accordingly, the pooled regression analyses in our empirical model would not result in biased estimations. Table 2 presents the regression results of firm characteristics on ownership structure in the listed companies in AH share index. In the largest ten shareholders model, the proportion of the largest ten shareholders ($TenSH_{i,t}$) is found to be positively related to firm size ($Size_{i,t}$), leveraged effect ($DebtRatio_{i,t}$), and firm age ($Age_{i,t}$) under at least 10% significant standard. The estimated coefficients are 0.0320, 0.2018, and 0.0006. Assuming that the company tends to maintain the original capital structure, it is reasonable to explain why the large shareholders will increase their holdings to obtain higher expected returns when the firm's assets are prepared to expand and increase the outside finance because the high leveraged effect is expected to produce higher firm performance and to enhance the efficiency of asset uses.

Table 2. Regression Results of Firm Characteristics on Ownership Structure in the Listed Companies in China AH Premium Index

Parameters	$TenSH_{i,t}$ Coeff. (Std error)	$InstitH_{i,t}$ Coeff. (Std error)	$GovSH_{i,t}$ Coeff. (Std error)
Constant	0.1288 (0.1639)	0.0895* (0.0543)	0.2362 (0.2628)
$Size_{i,t}$	0.0320*** (0.0087)	-0.0038 (0.0026)	-0.0050 (0.0142)
$DebtRatio_{i,t}$	**0.2018***** (0.0552)	**-0.0417*** (0.0214)	-0.0935 (0.1132)
$Growth_{i,t}$	0.0054 (0.0037)	**-0.0035**** (0.0017)	**0.0226***** (0.0059)
$SVolatility_{i,t}$	-0.0052 (0.0095)	0.0083 (0.0066)	**0.0411***** (0.0103)
$Age_{i,t}$	0.0006* (0.0004)	**0.0003*** (0.0002)	**-0.0014**** (0.0006)
Observations	272	272	272
SSE.	6.6452	2.0108	15.1275

	$TenSH_{i,t}$	$InstitH_{i,t}$	$GovSH_{i,t}$
Adj. R square	0.0849	0.0106	0.0666
Log likelihood	117.9300	279.9013	6.4668

Note: The Eicker-White estimated standard errors of are shown in the parentheses. The sample is the largest and most liquid mainland China companies with both A-share and H-share listings from 2005 to 2014. The dependent variables, $TenSH$, $InstitSH$, and GovSH, are the proportions of largest ten shareholders shares, foreign institutional shares, and state shares. The SVolatility is the standard deviation of yearly stock returns. The Size, DebtRatio, Growth and Age are the nature logarithm of book value of asset, the total liability divided by total asset, market to book ratio, and firm age. The *, ** and *** in the table refer the standard of significant by 10%, 5% and 1% respectively.

However, these influences were not found in foreign institutional shareholders and stated government shareholders. Although the high market-to-book ratio reflects market investors hold optimistic prospection, the foreign institutional shareholders model ($InstitH_{i,t}$) was negatively related to growth at the 5% significant level. This finding implies that the stock price might be an over-reaction. In addition, the proportion of stated holdings was positive growth opportunity ($GovSH_{i,t}$) and stock return volatility ($SVolatility_{i,t}$) under a 1% significance level, along with negative relations to firm age. The coefficients are 0.0226, 0.0411, and -0.0014, respectively. Two possible reasons are the following: 1. Political goals, the change in proportion of stated holdings might consider different reasons and 2. Infant industry argument, the policymaker would increase their shares based on assisting the infant industry. Generally, as higher holdings will bring good news such as high supervised qualification and financial capacity, the negative coefficient of firm age can be expected.

Through the first-stage estimation, we obtain the error terms, $\varepsilon_{i,t}^1$, $\varepsilon_{i,t}^2$, and $\varepsilon_{i,t}^3$, which present net effects of different controlling shareholders on firm-specific characteristics. In spite of stock price divergence between A shares and H shares attributing to different market environments, different investors and inconvertibility, the firm's characteristics still affect the proportions of major shareholders. Therefore, it is necessary to isolate the interaction effects. Instead of the proportions of controlling shareholders, Table 3 shows the regression results of $\varepsilon_{i,t}^1$, $\varepsilon_{i,t}^2$, and $\varepsilon_{i,t}^3$ on firm performance. In terms of firm-specific characteristics the debt ratio ($DebtRatio_{i,t}$) presents consistently negative influences on return on assets; the estimated coefficients are between -0.0853 and -0.1085 under a

1% significance level, but it is between 0.2153 and 0.3743 in market-based performance under at least a 10% significance level. This result implies that an increase in debt ratio increases the pressures of interest expenses and further reduces the accounting profits, but not in market-based performance. The results were consistent with perspectives of leveraged benefits. At least a 10% significance level, the firm age was consistently negatively related to firm performance, and the growth opportunity presented consistently positive relations. Finally, we can observe that the dummy variables have little effect on firm performance. The $PubDummy$ and $GovDummy$ denote the dummy variables. When the variables are equal to one, which is the initial offering date listed in the AH Premium Index or state-owned and is zero otherwise.

Table 3. Regression results from firm performance in the listed companies in China AH premium index

Parameters	$ROA_{i,t}$			$Return_{i,t}$		
	Coeff. (Std error)	Coeff. (Std error)	Coef. (Std error)	Coeff. (Std error)	Coeff. (Std error)	Coeff. (Std error)
$Constant$	0.0999*** (0.0363)	0.1359*** (0.0483)	0.1257*** (0.0483)	0.3468* (0.1884)	0.0915 (0.2289)	0.1133 (0.2416)
$Size_{i,t}$	-0.0009 (0.0019)	-0.0030 (0.0027)	-0.0027 (0.0028)	-0.0181* (0.0106)	-0.0044 (0.0138)	-0.0052 (0.0139)
$DebtRatio_{i,t}$	**-0.0853***** (0.0231)	**-0.1065***** (0.0305)	**-0.1085***** (0.0305)	**0.2153*** (0.1158)	**0.3707**** (0.1472)	**0.3743***** (0.1485)
$Growth_{i,t}$	**0.0057***** (0.0013)	**0.0042**** (0.0020)	**0.0046**** (0.0020)	**0.0465***** (0.0090)	**0.0595***** (0.0098)	**0.0585***** (0.0097)
$SVolatility_{i,t}$	-0.0070** (0.0030)	-0.0035 (0.0036)	-0.0044 (0.0039)	**-0.1827***** (0.0132)	**-0.2086***** (0.0148)	**-0.2066***** (0.0147)
$Age_{i,t}$	-0.0002** (0.0001)	-0.0001 (0.0001)	-0.0001 (0.0002)	**-0.0014**** (0.0006)	**-0.0028***** (0.0008)	**-0.0027**** (0.0008)
$PubDummy$	-0.0348*** (0.0130)	-0.0167 (0.0200)	-0.0151 (0.0187)	0.0338 (0.0611)	-0.0358 (0.0942)	-0.0392 (0.0966)
$GovDummy$	0.0007 (0.0073)	0.0004 (0.0072)	0.0057 (0.0075)	-0.0289 (0.0522)	-0.0270 (0.0522)	-0.0380 (0.0537)
$\varepsilon_{i,t}^1$	**0.0609**** (0.0248)	**0.0582**** (0.0259)	**0.0674**** (0.0339)	-0.1846 (0.1687)	-0.1008 (0.1657)	-0.1214 (0.1669)
$\varepsilon_{i,t}^2$		0.0354	0.0313		**0.3456*****	**0.3546*****

	$ROA_{i,t}$			$Return_{i,t}$		
		(0.0299)	(0.0314)		(0.1158)	(0.1194)
$\varepsilon^3_{i,t}$			-0.0528			0.1159
			(0.0569)			(0.3221)
$\varepsilon^1_{i,t}$ $\times PubDummy$	-0.0248	-0.0211	-0.0075	**0.3678**[*]	0.2785	0.2514
	(0.0381)	(0.0379)	(0.0434)	(0.2099)	(0.2084)	(0.2130)
$\varepsilon^2_{i,t}$ $\times PubDummy$		0.5119	0.3823	**-4.1929**[*]	**-3.9103**[*]	
		(0.5391)	(0.5506)	(2.2588)	(2.2422)	
$\varepsilon^3_{i,t}$ $\times PubDummy$			0.0232			-0.0544
			(0.0580)			(0.3264)
Observations	272	272	272	272	272	272
SSE.	0.4556	0.4516	0.4405	10.0734	9.8973	0.1957
Adj. *R* square	0.1980	0.1989	0.2126	0.5248	0.5295	0.5282
Log likelihood	481.0583	486.2608	485.6345	61.5627	63.9519	64.6190

Note: The Eicker-White estimated standard errors of are shown in the parentheses. The sample is the largest and most liquid mainland China companies with both A-share and H-share listings from 2005 to 2014. The dependent variables, ROA and $Return$, the net earnings divided by book value of total asset and yearly stock returns. The SVolatility is the standard deviation of yearly stock returns. The Size, DebtRatio, Growth and Age are the nature logarithm of book value of asset, the total liability divided by total asset, market to book ratio, and firm age. *, ** and *** in the table refer the standard of significant by 10%, 5% and 1% respectively. The $\varepsilon^1_{i,t}$, $\varepsilon^2_{i,t}$, and $\varepsilon^3_{i,t}$ denote that the $TenSH$, $InstitSH$, and GovSH are net effects of the proportions of largest ten shareholders shares, foreign institutional ten, and state ten. The $PubDummy$ and $GovDummy$ denote the dummy variables. When the variables are equal to one, which is initial offering date listed in AH premium index or state-owned and is zero otherwise. The *, ** and *** in the table refer the standard of significant by 10%, 5% and 1% respectively.

Regarding the effects of controlling shareholders, the proportion of the largest ten shareholders was positively correlated with ROA at a 5% significance level, and the proportion of foreign institutional shareholders was positively correlated with stock returns. From statements of alignment effects, the increase in controlling shareholders shares is expected to be a highly supervised qualification and can mitigate the agency problem. However, we further observe the interaction of controlling shareholders after cross-listings on firm performance. The foreign institutional investors present significant negative effects, which are -4.1929 and -3.9103. The estimated coefficients indicate that the foreign institutional investors will tend to sell their shares but not found in the largest ten shareholders when the company behavior cross-lists. This finding is inconsistent with

conclusions of Ayyagari & Doideg (2010), who point out that the companies may have a change in voting rights from controlling to foreign investors. Moreover, the net effect of foreign institutional investors was -4.5385 (-4.1929+0.3456) and -4.2649 (-3.9103+0.3546) after cross-listing, respectively. This result is consistent with strategic alignment hypothesis.

5. Conclusions

Using cross-listed companies in the Hang Seng China AH Premium Index from 2005-2014, this paper attempts to examine whether controlling shareholders exploit weak shareholder's rights. According to the statements of past studies, such as Bushee (1998) and Ayyagari & Doideg (2010), the changes in proportions of controlling shareholders might have alignment effects, conflict-of-interest hypothesis or strategic alignment hypothesis. The conclusions are still inconsistent and ambiguous. Therefore, we adopt the two-stage least square method to estimate the influences of controlling shareholders on accounting-based performance and market-based performance. From the empirical results of first-stage regression, given the condition of that the company tends to maintain the original capital structure, the large shareholders will tend to increase their shares when firm size and leveraged effect increase. However, the influences were not found in other major shareholders. In addition, we found that the AH stock price exists in the overreaction phenomenon. Moreover, the results of the second-stage regression point out that the increase in major shareholder holdings will improve supervised qualifications and decrease the agency problem among shareholders. However, foreign institutional investors will tend to sell their shares to the largest shareholders after cross-listing. This finding is inconsistent with the conclusions of Ayyagari & Doideg (2010) and supports the strategic alignment hypothesis. Consequently, we suggest that the variation of foreign institutional holdings will provide more information to determine whether the stock price has over-reaction if market investors want to adjust their investment allocation of cross-listed companies, and the change in largest shareholders holding also provide relevant information.

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