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Cross-listing and the Value of Corporate Cash Holdings
: Evidence from China

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Abstract This paper examines how cross-listing of Chinese A- and Hong Kong H-shares (AH cross-listed) affects the value of corporate cash holdings. Using a sample of AH cross-listed firms, we find that the value of cash holdings is higher for cross-listed than for non-cross-listed firms. The results remain robust to alternative measures of change in cash and consideration of state-owned enterprises. The AH cross-listing valuation premium for cash holdings decreases after a governance reform in the Chinese stock market. Our results suggest that AH cross-listing enhances firms' transparency and disclosure, and thereby the value of cash holdings relative to non-cross-listed companies.

Keywords Cross-listing, Chinese AH share, Cash holdings, Corporate governance, Chinese split-share reform

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Ⅰ. Introduction

Corporate cash is sensitive to agency relationships between shareholders and managers due to its susceptibility to manipulation by the managers (Jensen and Meckling (1976)). Prior studies have paid considerable attention to the impact on firm value of corporate cash holding with agency problems. Dittmar and Mahrt-Smith (2006), for example, showing that corporate governance affects the value of cash, being nearly twice in well-governed than in poorly governed firms. Of the many external and internal governance mechanisms that can impede managers' potential extraction of private benefits, this paper analyzes cross-listing on an overseas stock market, an important external mechanism accompanied by significant differences in the legal, supervision, and disclosure requirements managers face. Particularly, in this paper, we focus on Chinese A-share and Hong Kong H-share cross-listed firms to study the effect of cross-listing on the value of cash holdings.

Although extensive research has explored the effect of cross-listing on corporate governance and firm value, the overall effect of cross-listing in China is little known. The literature suggests that corporate governance can be improved by cross-listing in the United States owing to the developed legal and supervision systems (i.e., Coffee (1998, 2002), Stulz (1999), Reese and Weisbach (2002), Karolyi (2006), and Frésard and Salva (2010)). However, the effect of cross-listing may vary over time and across countries (Ferris, Kim, and Noronha (2009)). Particularly, Allen, Qian, and Qian (2005) show that, while Hong Kong (H-share) has strong, mainland China A-share has among the poorest, disclosure and investor protection in their stock markets. China-specific organizational and operational conventions may give rise to substantial conflicts with different governance system. Jiang and Kim (2014) document an extensive review of the Chinese corporate governance and highlight its unique features such as prevalence of state ownership and controlling shareholders, inactive external governance mechanism (e.g., hostile takeover market, and weak legal environment), and different incentive

of CEO. Jiang and Kim (2014) also discuss the lack of studies that examine the effect of cross-listing on corporate governance using Chinese data in spite of importance of cross-listing as an effective governance mechanism. In this paper, therefore, we attempt to fill the void in the cross-listing literature by examining whether cross-listing in China enhances the corporate governance and firm value.

We first investigate how AH cross-listing impedes managers' extraction from, by measuring its value effects on, a firm's cash holdings. Following Faulkender and Wang (2006), we examine the association between changes in cash holdings and changes in firm value. We find for a sample of all A-shares listed on the Chinese market and AH cross-listed shares for the period 2003-2013, that the latter, relative to non-cross-listed firms, earn higher valuation premiums on their cash holdings. This finding implies that listing on the Hong Kong stock market, with its stricter supervision system and greater disclosure requirements, constrains self-beneficial extraction by managers and thereby increases the value of cash holdings. Controlling for other factors, an extra cash is valued, on average, 40.9% higher for AH cross-listed than non-cross-listed firms. Using a propensity score matched sample to mitigate potential endogeneity issues, we also find an extra cash to be valued, on average, 92.9% higher for cross-listed than non-cross-listed firms. The results are robust to the inclusion of firm-specific governance mechanism.

Next, to identify the underlying channel for the cross-listing premium, we examine whether the AH cross-listing premium diminishes after governance reforms and regulatory changes in the Chinese stock market. Specifically, Chinese non-tradable share reform completed during 2005 to 2006, and domestic Chinese investors are allowed to trade in the H-share market from 2007 (Li, Brockman, and Zurbruegg (2015)), reducing the gap in institutional factors and information structure between the two stock markets. Moreover, Chen, Chen, Schipper, Yu, and Xue (2012) examine the influences of Chinese share reform on corporate cash holding policies and find that the cash holdings of Chinese listed firms decreased significantly after the share reform, which can help to reduce

agency conflicts between controlling shareholders and minority shareholders. Thus, the Chinese share reform can be used to provide evidence for the underlying channel of the relationship between the AH cross-listing and the value of cash holdings. Dividing the full sample period into pre- and post-reform periods, 2003-2006 and 2007-2013, respectively, we find that the AH cross-listing valuation premium for cash holdings diminishes after the changes. Consistent with the previous literature, this finding implies that firms from a jurisdiction with weaker investor protection can benefit by bonding to a jurisdiction with better institutional factors through cross-listing, and thus the benefit can decrease as the gap between jurisdictions becomes smaller.[1)]

Our additional robustness tests by employing alternative measures of the expected change in cash, and multiple subsample tests taking account of state-owned enterprises and order of cross-listing, again confirm that the cross-listing enhances the value of cash holdings. Taken together, the findings of our research provide solid evidence that the agency risk to corporate cash reserves is significantly mitigated for Chinese firm that list on the Hong Kong stock market.

Our study joins a large body of literature that seeks to explain the corporate governance enhancement effect of cross-listing. But previous literature including Frésard and Salva (2010), who find that the value of excess cash holdings is significantly greater for foreign firms that list on U.S. exchanges and over-the-counter than for their domestic peers, is subject to potential concerns from heterogeneities across firms' home countries and the United States. We mitigate this concern by analyzing Chinese AH cross-listing firms, which are less affected by such heterogeneities owing to similarities in investor base and information access.

In other literature on the effect of AH cross-listing, Chi and Zhang (2010) find that changes in top executive compensation are more sensitive to increases in sales in cross-listed than in non-cross-listed firms, rules governing corporate governance and investor

1) AH cross-listing post governance reform still can increase the valuation of Chinese firms due to the remained gap in investor protection and foreign investor accessibility as in Li et al. (2015).

protection being stricter in the Hong Kong than in the mainland market. Ke, Rui, and Yu (2012), however, find that the bonding hypothesis does not apply to overseas listed state-controlled Chinese firms with respect to managerial pay-for-performance sensitivity. While prior literature examines the impact of cross-listing on corporate governance mainly by exploring internal changes, we examine the effects on investor valuation of corporate cash holdings and find that the AH cross-listing mitigates shareholders' agency concern in corporate cash holdings.

The remainder of this paper is structured as follows. We explain our empirical methodology and data in section 2, and present our main empirical findings in section 3. Our robustness check is described in section 4. Section 5 concludes.

Ⅱ. Empirical methodology and data

1. Empirical methodology

We examine how cross-listing influences the value of corporate cash holdings using Faulkender and Wang's (2006) model, which tests whether changes in cash holdings are associated with changes in firm value, measured as the excess return of firm i during year t, which is equal to the return of firm i during year t minus the return of its benchmark portfolio during year t. We choose as the benchmark return the value weighted-average market return (Shanghai main board, Shenzhen main board, and Growth Enterprise Market (GEM) board in Hong Kong) during year t owing to the high synchronicity in the Chinese stock market. Deducting the return of the benchmark portfolio effectively incorporates the time-series risk factors in the estimation. This is an important advantage of Faulkender and Wang's (2006) over Fama and French's (1998) model. Faulkender and Wang's (2006) model treats the unexpected change as the realized change in cash holdings, assuming the market expected level of cash holdings at end of year to equal the level of cash

holdings at the end of the previous year.[2] Both the dependent and independent variables being standardized by one-year lagged market value of equity, the regression coefficients of the change in cash holdings represent the change in firm value occasioned by a one RMB change in corporate cash.

We add a dummy variable of cross-listing and an interaction term between cross-listing and change in cash holdings. Cross-listing is the dummy variable that equals one if a firm is listed on both the Chinese A-share and Hong Kong (H-share) stock markets, and zero otherwise. The coefficient of the interaction term between cross-listing and change in cash holdings is interpreted as the difference in the marginal value of cash holdings between cross-listed and non-cross-listed firms in the Chinese stock market, and also accounts for the influence of AH cross-listing on the value of cash holdings. All control variables in Faulkender and Wang (2006) are included in our model except R&D expenditures, for which Chinese financial statements provide no comprehensive measurement item. Our baseline regression model is:

$$r_{i,t} - R_{i,t}^{M} = \alpha + \beta_1 \frac{\Delta C_{i,t}}{M_{i,t-1}} + \beta_2 CL_{i,t} + \beta_3 CL_{i,t} * \frac{\Delta C_{i,t}}{M_{i,t-1}} + \beta_4 \frac{\Delta E_{i,t}}{M_{i,t-1}} + \beta_5 \frac{\Delta NA_{i,t}}{M_{i,t-1}}$$
$$+ \beta_6 \frac{\Delta I_{i,t}}{M_{i,t-1}} + \beta_7 \frac{\Delta D_{i,t}}{M_{i,t-1}} + \beta_8 \frac{NF_{i,t}}{M_{i,t-1}} + bet_9 \frac{C_{i.t-1}}{M_{i,t-1}} + \beta_{10} \frac{C_{i.t-1}}{M_{i,t-1}} * \frac{(\Delta C_{i,t}}{M_{i,t-1}}$$
$$+ \beta_{11} L_{i,t} + \beta_{12} L_{i,t} * \frac{\Delta C_{i,t}}{M_{i,t-1}} + \epsilon_{i,t} \quad (1)$$

Where ΔX indicates the change in variable X of firm i from year $t-1$ to year t and all variables are standardized by one-year lagged market value of equity, $r_{i,t} - R_{i,t}^{M}$ is excess stock return with the value weighted average market return, $M_{i,t-1}$ is one-year lagged market value of equity, ΔC_t is the change in cash holdings, C_{t-1} is the value of cash holdings at the beginning of year t, CL is a dummy variable that takes the value of one if a firm is listed on both the mainland China and Hong Kong stock markets, and $CL^{*}\Delta C_t$ is the interaction term between the cross-listing dummy and change in cash

[2] Our robustness check employs three alternative measures of expected and unexpected changes in cash as the part of realized change net of expected change.

holdings. ΔE_t is the change in earnings, ΔNA_t is the change in net assets, ΔI_t is the change in interest expense, ΔD_t is the change in common dividends, L_t is the value of total debt divided by the sum of total debt and market value of equity, and NF_t is the value of equity issued plus debt issued. Following Faulkender and Wang (2006), we add two interaction terms, $C_{t-1}*\Delta C_t$ and $L_t*\Delta C_t$, in our baseline regression to control for the effects of changes in the value of cash for the different levels of cash holdings and leverage.

Moreover, we include two firm-specific governance variables, total board size and independent director ratio, into the model to control other governance mechanism which may affect the value of cash holdings (Fama and Jensen (1983), Hermalin and Weisbach (2003), Adams and Ferreira (2007), Knyazeva, Knyazeva, and Masulis (2013), and Kang, Kook, and Yoon (2015)). Total board size (TB_t) is measured as the natural log of the total number of directors at the end of year t and Independent director ratio (IDP_t) is measured as the ratio of independent directors to the total number of directors at the end of year t.

2. Data and summary statistics

We use data from the China Stock Market and Accounting Research (CSMAR) database. Our sample consequently includes all A-shares listed on the Chinese market from 2003 to 2013.[3] By the end of 2013, 83 cross-listed firms issued H-shares on the Hong Kong and A-shares on the Chinese stock market. We exclude 29 AH cross-listed firms in the finance and utilities industries. ST (Special Treatment) and PT (Particular Transfer) firms are also excluded from our regression analysis.[4] Lastly, we exclude firm-year observations for which net assets, market value of equity, operating revenue, or dividend is negative.

[3] Prior to 2003, companies listed on the Chinese stock market did not release the detailed financial data needed for this paper. Due to availability of corporate governance data, we do analysis with firm-specific governance variables for the period of 2005-2013.

[4] According to the Chinese Stock Listing Exchange Rule, a firm in a financial trouble is labeled as a ST (Special Treatment) firm. If a ST firm cannot recover from its financial trouble within the next 3 year, it is designated a PT (Particular Transfer) firm.

The final sample of 14,159 firm-year observations includes 333 cross-listing firm-year observations for 54 unique AH cross-listing firms, and 13,815 firm-year observations, of which 2,101 are for only A-share listed firms. Table 1 presents summary statistics for the full sample. Our key variables, excess stock returns and change in cash holdings, exhibit sizable cross-sectional variation. We also present statistics for our variables sorted by cross-listing. Table 2 reports descriptive statistics of our variables for both cross-listed and non-cross-listed firms. Both changes in cash holdings and cash holdings levels at the beginning of the year are significantly higher for cross-listed than for non-cross-listed firms.

Our sample of cross-listed companies is not randomly determined, and some observable firm-specific characteristics may influence the cross-listing decision. To mitigate this endogeneity concern, we employ a propensity score matched approach. Specifically, we estimate the propensity scores using a probit regression in which the dependent variable

〈Table 1〉 Summary Statistics for the Full Sample

This table presents descriptive statistics for key variables: $r_{i,t} - R_{i,t}^M$ is excess stock return with the value weighted average market return, ΔC_t is the change in cash holdings, C_{t-1} is the value of cash holdings at the beginning of year t, ΔE_t is the change in earnings, ΔNA_t is the change in net assets, ΔI_t is the change in interest expense, ΔD_t is the change in common dividends, L_t is the value of total debt divided by the sum of total debt and market value of equity, and NF_t is the value of equity issued plus debt issued. TB_t is the total board size and IDP_t is the independent director ratio. All variables except for L_t, TB_t, and IDP_t are standardized by one-year lagged market value of equity.

Variable	Mean	SD	Min	Median	Max	Obs
$r_{i,t} - R_{i,t}^M$	0.074	0.605	−1.817	−0.025	14.238	14,159
ΔC_t	0.015	0.132	−1.125	0.001	3.895	14,159
C_{t-1}	0.168	0.165	0.000	0.124	2.897	14,159
ΔE_t	0.009	0.083	−0.935	0.003	1.373	14,159
ΔNA_t	0.142	0.480	−2.387	0.068	18.704	14,159
ΔI_t	0.002	0.015	−0.357	0.000	0.505	14,159
ΔD_t	0.001	0.013	−0.223	0.000	0.341	14,159
L_t	0.310	0.202	0.000	0.276	0.921	14,159
NF_t	0.230	0.426	0.000	0.057	6.509	14,159
TB_t	2.240	0.224	0.000	2.197	3.178	13,095
IDp_t	0.359	0.061	0.000	0.333	1.000	13,095

〈Table 2〉 Descriptive Statistics for Cross-listing and Non-cross-listing Sample

This table presents descriptive statistics for the key variables in Table 1 for the cross-listing, non-cross-listing and matched non-cross-listing group. We match each cross-listed firm with a non-cross-listed firm based on the propensity score matching approach. We match each cross-listed firm with a non-cross-listed firm in the same industry and year and the closest firm characteristics. $r_{i,t} - R_{i,t}^{M}$ is excess stock return with the value weighted average market return, ΔC_t is the change in cash holdings, C_{t-1} is the value of cash holdings at the beginning of year t, ΔE_t is the change in earnings, ΔNA_t is the change in net assets, ΔI_t is the change in interest expense, ΔD_t is the change in common dividends, L_t is the value of total debt divided by the sum of total debt and market value of equity, and NF_t is the value of equity issued plus debt issued. All variables except for L_t are standardized by one-year lagged market value of equity. The t-statistics of the differences in all variables between cross-listed firms and matched non-cross-listed firms are shown. Significance level of t-statistics at 10%, 5%, and 1% levels are denoted by one, two, and three stars.

Variable	Cross-listed firms		Non-cross-listed firms			Matched non-cross-listed firms		
	Mean	Median	Mean	Median	Mean Diff	Mean	Median	Mean Diff
$r_{i,t} - R_{i,t}^{M}$	0.032	−0.051	0.075	−0.024	−0.043*	0.013	−0.041	0.019
ΔC_t	0.034	0.007	0.015	0.001	0.019***	0.036	0.012	−0.002
$C_{(t-1)}$	0.263	0.158	0.166	0.124	0.097***	0.244	0.150	0.019
ΔE_t	0.015	0.009	0.009	0.003	0.006	0.008	0.007	0.007
ΔNA_t	0.249	0.134	0.140	0.067	0.109***	0.370	0.157	−0.121
ΔI_t	0.004	0.001	0.002	0.000	0.002***	0.005	0.002	−0.001
ΔD_t	0.003	0.000	0.001	0.000	0.002***	0.003	0.000	0.000
L_t	0.464	0.447	0.306	0.272	0.158***	0.467	0.470	−0.003
NF_t	0.289	0.000	0.229	0.060	0.060**	0.213	0.000	0.076*
Observations	333		13,815			333		

is an indicator that takes the value of one if a firm is listed in both mainland China and Hong Kong stock markets and zero otherwise. To calculate the propensity score, we use variables including earnings, net issuance activity, size, leverage ratio, cash, and sales, and year and industry fixed effects. After propensity score matching, the difference in average propensity score between the cross-listed and non-cross-listed groups decreases significantly from 32.8% to 0.5%.

Our final matched sample consists of 333 cross-listing firm-year observations for 54 AH cross-listed and 54 non-cross-listed firms for the period 2003-2013. Table 2 reports descriptive statistics of our variables for matched non-cross-listed firms. After propensity score matching, most of the mean differences in the covariates across cross-listed and non-cross-listed firms become small and statistically insignificant. Thus, the matching

process has removed meaningful differences along observables between cross-listed and non-cross-listed and ensured that the matching regression estimates are less likely to be confounded by the observable differences.

Ⅲ. Empirical Results

1. Results for the full sample

Results of examining the influence of AH cross-listing on the value of cash holdings using our model (1) are presented in Table 3. First, to estimate the marginal value of cash holdings with full samples, we do not add the cross-listing dummy variable in the regression of excess stock returns. The marginal value of cash holding is measured in the regression as the sensitivity of a firm's excess return to the variable ΔC_t and interaction terms $C_{t-1}*\Delta C_t$ and $L_t*\Delta C_t$. The average one-year lagged cash holdings in Table 1 being equivalent to 16.8% of the market value of equity, and average leverage ratio being 31.0%, the marginal value of one RMB of cash to shareholders, on average, is 0.822 (= 1.510 + 0.144*16.8% + (−2.298*31.0%)) in the full sample regression.

The second column of Table 3 reports the impact of cross-listing on the value of corporate cash holdings. We add to this regression the cross-listing (CL) dummy and interaction between the cross-listing dummy and change in cash holdings ($CL*\Delta C_t$). The coefficients of these variables are positive and significant at the 1% level, which implies that cross-listing increases the marginal value of firms' cash holdings. To calculate the marginal value of cash holdings for non-cross-listed firms, we need the coefficients of the same three items (ΔC_t, $C_{t-1}*\Delta C_t$, and $L_t*\Delta C_t$). The marginal value of one RMB to investors in non-cross-listed firms is, on average, 0.799 RMB (1.508 + 0.078*16.6% + (−2.358*30.6%)).[5)]

5) For non-cross-listed firms, average one-year lagged cash holdings is equivalent to 16.6% of the market value of equity, and the average leverage ratio is 30.6%, as reported in Table 2.

〈Table 3〉 Cross-listing and the Value of Cash Holdings: Results for the Full Sample

This table examines the relation between the cross-listing of Chinese A- and H-shares and the value of corporate cash holdings for the period of 2003-2013. The dependent variable is the excess stock return with the value weighted average market return. Test results without the dummy variable of cross-listing for the value of cash holding are shown in the first, results with the cross-listing dummy in the second, column, where ΔC_t is the change in cash holdings, CL is a dummy variable that takes the value of one if a firm is listed on both the mainland China and Hong Kong stock markets. In the third column, we include additional firm-level governance mechanisms such as board size and independent director ratio. C_{t-1} is the value of cash holdings at the beginning of year t, ΔE_t is the change in earnings, ΔNA_t is the change in net assets, ΔI_t is the change in interest expense, ΔD_t is the change in common dividends, L_t is the value of total debt divided by the sum of total debt and market value of equity, and NF_t is the value of equity issued plus debt issued. TB_t is the total board size and IDP_t is the independent director ratio. All variables except for L_t, TB_t, and IDP_t are standardized by one-year lagged market value of equity. Significance of t-statistics at the 10%, 5%, and 1% levels are denoted by one, two, and three stars. Robust t-statistics appear in parentheses below the coefficient estimates.

	(1)	(2)	(3)
ΔC_t	1.510***	1.508***	1.506***
	(5.75)	(5.79)	(5.70)
$CL * \Delta C_t$		0.692***	0.709***
		(3.89)	(4.02)
CL		−0.031	−0.034
		(−1.29)	(−1.31)
ΔE_t	0.969***	0.968***	1.008***
	(7.64)	(7.64)	(7.36)
ΔNA_t	0.122***	0.126***	0.124***
	(3.66)	(3.83)	(3.70)
ΔI_t	−2.079**	−2.093*	−2.170***
	(−2.52)	(−2.53)	(−2.58)
ΔD_t	2.581***	2.603***	2.594***
	(3.99)	(4.03)	(3.81)
NF_t	0.100***	0.101***	0.099***
	(5.53)	(5.56)	(5.23)
$C_{(t-1)}$	0.476***	0.468***	0.472***
	(11.96)	(11.75)	(11.36)
$C_{(t-1)} * \Delta C_t$	0.144	0.078	0.082
	(0.60)	(0.33)	(0.33)
L_t	−0.768***	−0.764***	−0.789***
	(−26.10)	(−26.00)	(−25.23)
$L_t * \Delta C_t$	−2.298***	−2.358***	−2.359***
	(−4.58)	(−4.79)	(−4.71)
TB_t			0.052**
			(2.21)
IDp_t			−0.086
			(−0.97)
Year Fixed Effects	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes
Observations	14,159	14,159	13,095
Adj R^2	0.1690	0.1701	0.1690

Adding the coefficient of the interaction term $CL^{*}\Delta C_t$ to obtain the marginal value of cash holdings for cross-listed firms, we find the marginal value of one RMB of cash to shareholders to be, on average, 1.126 RMB (= 1.508 + 0.692 + 0.078*26.3% + (−2.358* 46.4%)).[6] These results show the marginal value of cash to be, on average, 0.327 RMB more for cross-listed than for non-cross-listed firms. This implies that AH cross-listings limit, through significant enhancement of disclosure requirements and supervision constraints, managers' ability to divert cash holdings to their private benefit.

In the third column of Table 3, we show how AH cross-listings affect the marginal value of cash holding with additional controls for corporate governance.[7] We add the total board size (TB_t) and the independent director ratio (IDP_t) in the regression. The results indicate that cross-listing still affect the value of cash holdings positively after controlling for other alternative governance mechanism. Specifically, the marginal value of cash in the cross-listed firms, on average, is 0.344 RMB more than that of the non-cross-listed firms. This result is consistent with that in column (2) of Table 3.

2. Results for the matched sample

Results for the matched sample of non-cross-listed and cross-listed firms are presented in Table 4. The model estimates the combined sample of the matched non-cross-listed firms and the cross-listed firms in the first and second columns and compares the cross-listed firm sample in the third column and the matched non-cross-listed firms in the fourth column.

The column 1 of Table 4 shows that the marginal value to shareholders of an extra RMB of cash is higher in the cross-listed than in the matched non-cross-listed firms. These results are consistent with the findings from the full sample regression. Specifically,

6) For cross-listed firms, the average one-year lagged cash holdings is equivalent to 26.3% of the market value of equity, and the average leverage ratio is 46.4%, as reported in Table 2.

7) In untabulated tests, we also find that the positive effect of cross-listing on the value of cash holding is stronger for better governed firms, measured by their total board size (TB_t) and the independent director ratio (IDP_t). The results are available upon request.

〈Table 4〉 Cross-listing and the Value of Cash Holdings : Results for the Matched Sample

This table examines the relation between the cross-listing of Chinese A- and H-shares and the value of corporate cash holdings for the period of 2003-2013 using the matched sample. We match each cross-listed firm with a non-cross-listed firm based on the propensity score matching approach. We match each cross-listed firm with a non-cross-listed firm in the same industry and year and the closest firm characteristics. The dependent variable is the excess stock return with the value weighted average market return. Test results for the matched sample including both cross-listed and non-cross-listed sample are shown in the first and second columns. In columns (3) and (4), we report the subsample regression results for each cross-listed sample and matched non-cross-listed sample, respectively. CL is a dummy variable that takes value of one if a firm is listed on both the mainland China and Hong Kong stock markets. Other variable definitions are in Table 1. Robust t-statistics appear in parentheses below the coefficient estimates. Significance of t-statistics at the 10%, 5%, and 1% levels are denoted by one, two, and three stars.

	Matched Sample		Cross-listed firms	Matched non-cross-listed firms
	(1)	(2)	(3)	(4)
ΔC_t	1.619***	1.937***	2.796***	1.238**
	(3.69)	(3.34)	(4.51)	(2.24)
$CL * \Delta C_t$	0.581**	0.545*		
	(2.25)	(1.94)		
CL	−0.012	−0.036		
	(−0.38)	(−1.07)		
ΔE_t	0.45	0.507	0.252	0.694
	(1.32)	(1.49)	(0.74)	(1.11)
ΔNA_t	0.064	0.037	0.088	0.035
	(1.01)	(0.63)	(1.56)	(0.37)
ΔI_t	1.834	1.906	3.126	1.903
	(1.26)	(1.43)	(1.41)	(0.95)
ΔD_t	0.755	2.322	1.736	0.211
	(0.42)	(1.16)	(0.70)	(0.09)
NF_t	0.067**	0.034	0.040	0.611
	(2.08)	(0.99)	(0.95)	(0.82)
$C_{(t-1)}$	0.484***	0.504***	0.421***	0.584***
	(6.23)	(6.23)	(4.01)	(5.62)
$C_{(t-1)} * \Delta C_t$	−0.083	0.249	−0.499	0.082
	(−0.18)	(0.38)	(−0.68)	(0.17)
L_t	−0.889***	−0.839***	−0.875***	−0.861***
	(−8.14)	(−7.51)	(−6.12)	(−4.86)
$L_t * \Delta C_t$	−2.074**	−2.994***	−2.785**	−1.363
	(−2.30)	(−2.66)	(−2.05)	(−1.15)
TB_t		0.104		
		(1.23)		
IDp_t		−0.496**		
		(−2.28)		
Year Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Observations	666	628	333	333
Adj R^2	0.281	0.264	0.321	0.242

the marginal value of cash to shareholders is 0.630 RMB in the non-cross-listed, and 1.216 RMB in the cross-listed, sample.[8] An extra RMB is valued, on average, 0.586 RMB more in cross-listed than in non-cross-listed firms. That the coefficient of the interaction between cross-listing and change in cash holding is significantly positive implies that cross-listing increases the market value of cash holdings. Additionally, in the second column of Table 4, our result remains robust to controlling for other alternative governance variables. More specifically, an extra RMB in the cross-listed firms, on average, is valued 0.559 RMB more than an extra RMB in the non-cross-listed firms.

The third and fourth columns of Table 4 compare the effects on the market value of cash holdings for subsamples by cross-listing. The value of cash holdings for the cross-listing firms is more statistically and economically significant than that for the matched non-cross-listing, which is consistent with our finding that AH cross-listing increases the value of cross-listed firms' cash holdings.

3. Split-share reform and regulation changes

Results thus far show AH cross-listing to increase corporate cash value consequent to the constraining effect of the Hong Kong market's strict supervision and investor protection system on managers' ability to self-benefit from cash holdings. We now explore the economic channel of our findings by examining whether the AH cross-listing premium diminishes after governance reforms and regulatory changes in the Chinese stock market that narrow the gap in supervision and investor protection between mainland China and Hong Kong markets.[9] In 2005, the Chinese government initiated a reform to convert all non-tradable common shares into tradable common shares and completed by 2006. In particular, Chen et al. (2012) find that cash holdings of Chinese-listed firms, on average, decrease significantly after the split-share reform and they argue

8) We find the average one-year lagged cash holdings to be equivalent to 24.4% of the market value of equity and average leverage ratio to be 46.7% for matched non-cross-listed firms, as reported in Table 2.

9) See Jiang and Kim (2014) for an extensive review of the Chinese corporate governance literature.

〈Table 5〉 Regression Results for pre- and post-Share Reform

This table examines the relation between the cross-listing of Chinese A- and H-shares and the value of corporate cash holdings for the subsample period. The dependent variable is the excess stock return with the value weighted average market return. In columns (1) and (2), we report the results for subsample from the pre-reform period (2003-2006) with and without other governance controls, respectively. In columns (3) and (4), we report the results for subsample from the post-reform period (2007-2013). ΔC_t is the change of cash holdings. CL is a dummy variable that has value of one if firm is listed in both mainland China and Hong Kong stock markets. C_{t-1} is the value of cash holdings at the beginning of year t. Other variable definitions are in Table 1. Robust t-statistics appear in parentheses below the coefficient estimates. Significance of t-statistics at the 10%, 5%, and 1% levels are denoted by one, two, and three stars.

	Pre-Reform Period		Post-Reform Period	
	(1)	(2)	(3)	(4)
ΔC_t	2.074***	2.217***	1.407***	1.404***
	(5.58)	(5.15)	(5.28)	(5.27)
$CL*\Delta C_t$	0.614***	0.640***	0.439	0.441
	(3.76)	(3.79)	(1.29)	(1.30)
CL	-0.017	-0.053	-0.035	-0.037
	(-0.32)	(-0.65)	(-1.27)	(-1.32)
ΔE_t	0.614***	0.649***	1.266***	1.265***
	(5.69)	(5.03)	(6.28)	(6.27)
ΔNA_t	0.256***	0.254***	0.089**	0.089**
	(3.87)	(3.53)	(2.53)	(2.54)
ΔI_t	1.612	1.559	-2.330**	-2.328**
	(1.11)	(0.93)	(-2.53)	(-2.53)
ΔD_t	2.888**	2.915**	2.136***	2.136***
	(2.38)	(2.10)	(2.98)	(2.98)
NF_t	0.101***	0.102***	0.084***	0.084***
	(3.76)	(3.19)	(3.82)	(3.79)
C_{t-1}	0.546***	0.576***	0.436***	0.437***
	(6.81)	(6.13)	(9.90)	(9.90)
$C_{t-1}*\Delta C_t$	0.052	0.091	-0.052	-0.050
	(0.13)	(0.19)	(-0.20)	(-0.19)
L_t	-1.081***	-1.281***	-0.668***	-0.673***
	(-18.25)	(-16.03)	(-20.06)	(-19.95)
$L_t*\Delta C_t$	-3.068***	-3.360***	-2.099***	-2.098***
	(-4.45)	(-4.27)	(-3.99)	(-3.98)
TB_t		0.137**		0.025
		(2.43)		(0.95)
IDP_t		-0.330		-0.047
		(-1.35)		(-0.50)
Year Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Observations	3,300	2,239	10,859	10,856
Adj R^2	0.239	0.243	0.149	0.149

that the reform eliminates significant market friction which affects agency conflicts between controlling shareholders and minority shareholders. Moreover, mainland Chinese investors were not allowed to trade H-shares listed on the Hong Kong stock exchange before 2007. In 2007, the Chinese government changed the regulations to have access to the H-shares, reducing the gap in investor composition and information structure (Li et al. (2015)). The governance reforms and regulatory changes in the Chinese stock market provide us with a suitable environment to test whether our findings of the AH cross-listing premium are derived mainly from the improvement in governance mechanism.

To examine the hypothesis, we divide the full sample period into pre- and post-reform periods, 2003-2006 and 2007-2013, respectively and we run the same regression as the model (1). Table 5 shows the results of the regression with the different sample periods. The coefficients of the interaction terms between cross-listing dummy and change in cash holdings ($CL^{*}\Delta C_t$) are significantly positive in pre-reform periods (2003-2006), which implies that the benefit of cross-listing decreases as the institutional gap such as listing rules and investor protection between the two stock markets becomes smaller. This suggests that the governance mechanism is a key economic channel that drives AH cross-listing valuation premium for cash holdings.

Ⅳ. Robustness Checks

1. Alternative measurements of expected change in cash

Whereas our main analysis uses realized change in cash holdings, assuming expected change to be zero, Faulkender and Wang (2006), pointing out that the expected change having been incorporated in the market equity value of a firm at the end of previous year, only the unexpected part influences a change in value, argue that realized change in cash holdings encompasses both the expected and unexpected change. Following

Faulkender and Wang (2006), we repeat our analysis using three different methods to measure unexpected changes in cash.

First, expected cash change being the average change in cash of the benchmark portfolio over the year, we choose the average change in cash holdings of the markets (Shanghai, Shenzhen, and GEM) as the expected change in cash, and measure the unexpected change as the difference between the realized change and average change in cash holdings of the market.

Alternatively, Faulkender and Wang (2006) use two models from Almeida, Campello, and Weisbach (2004) to estimate the expected change in cash holdings, in both cases as the realization of factors that influence the sources and uses of cash at the end of the previous year. The unexpected change is thus obtained by subtracting these estimates from the realized change. The first estimation is:

$$\Delta CashHoldings_{i,t} = \alpha_0 + \alpha_1 CashFlow_{i,t-1} + \alpha_2 Q_{i,t-1} + \alpha_3 Size_{i,t-1} + \varepsilon_{i,t} \quad (2)$$

where Cash Flow is the ratio of earnings before extraordinary items and depreciation (minus dividends) to the one-year lagged market value of equity, Q is market value divided by book value of assets, and Size is measured as the natural log of total assets.

On the basis of model (2), Almeida et al. (2004) add capital expenditures (Expenditures), acquisitions (Acquisitions), change in net working capital (ΔNWC), and change in short-term debt (ΔShortDebt) to the regression. All the variables are standardized by one-year lagged market value of equity. The second estimation follows the model (3):

$$\begin{aligned}\Delta CashHoldings_{i,t} = {} & \alpha_0 + \alpha_1 CashFlow_{i,t-1} + \alpha_2 Q_{i,t-1} + \alpha_3 Size_{i,t-1} \\ & + \alpha_4 \mathrm{Exp}enditures_{i,t-1} + \alpha_5 Acquisitions_{i,t-1} + \alpha_6 \Delta NWC_{i,t} \\ & + \alpha_7 \Delta ShortDebt_{i,t} + \epsilon_{i,t} \quad (3)\end{aligned}$$

Results of these alternative measures of variation in cash reported in Table 6 are consistent with the results obtained using realized change in cash. In all specifications of unexpected change in the cash, the impact of AH cross-listing on cash value ($CL^{*}\Delta C_t$) is similar in magnitude and statistically significant. Moreover, the marginal values to shareholders of an additional RMB, 1.110, 1.188, and 1.239 in AH cross-listed, and

〈Table 6〉 Regressions with Alternative Measurements of the Expected Change in Cash

This table examines the relation between the cross-listing of Chinese A- and H-shares and the value of corporate cash holdings for the subsample period with unexpected change in cash estimated as the difference between realized change in cash and expected change in cash using three alternative measurements. The dependent variable is the excess stock return with the value weighted average market return. The regression results using as the alternative measurement the market average change in cash are shown in the first column and results using the alternative measurements following Almeida et al. (2004, hereafter ACW), in the second and third columns, respectively. ΔC_t is the change of cash holdings. CL is a dummy variable that has value of one if a firm is listed in both mainland China and Hong Kong stock markets. C_{t-1} is the value of cash holdings at the beginning of year t. Other variable definitions are in Table 1. Robust t-statistics appear in parentheses below the coefficient estimates. Significance of t-statistics at the 10%, 5%, and 1% levels are denoted by one, two, and three stars.

	(1) Market Average	(2) ACW1	(3) ACW2
ΔC_t	1.343***	1.412***	1.448***
	(5.38)	(5.60)	(6.51)
$CL * \Delta C_t$	0.717***	0.735***	0.766***
	(4.00)	(4.86)	(4.01)
CL	−0.014	−0.006	−0.015
	(−0.57)	(−0.26)	(−0.60)
ΔE_t	0.983***	0.970***	0.922***
	(7.80)	(7.67)	(7.30)
ΔNA_t	0.127***	0.118***	0.131***
	(3.99)	(3.69)	(4.40)
ΔI_t	−2.093*	−1.986**	−1.879**
	(−2.52)	(−2.41)	(−2.31)
ΔD_t	2.725**	2.695***	2.699***
	(4.23)	(4.19)	(4.28)
NF_t	0.100***	0.097***	0.095***
	(5.56)	(5.43)	(5.52)
C_{t-1}	0.448***	0.458***	0.446***
	(11.33)	(11.38)	(11.36)
$C_{t-1} * \Delta C_t$	0.071	−0.041	0.048
	(0.31)	(−0.18)	(0.18)
L_t	−0.782***	−0.777***	−0.767***
	(−24.65)	(−25.23)	(−25.77)
$L_t * \Delta C_t$	−2.088***	−2.043***	−2.129***
	(−4.40)	(−4.32)	(−4.54)
Year Fixed Effects	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes
Observations	14,159	14,159	14,159
Adj R^2	0.1660	0.1681	0.1677

0.716, 0.780, and 0.804 in non-cross-listed, firms, are similar to the values, 1.126 and 0.799, respectively, obtained using realized change in cash. The stable regression coefficients of the different measures of change in cash imply that our empirical findings regarding the impact of AH cross-listing on the value of cash holdings are robust to the measure of change in cash.

2. State-owned enterprises and cross-listing

Overseas listing in China being influenced by political and noncommercial factors, 46 of 54 AH cross-listed firms in our final sample are state-owned enterprises (SOEs). Chen, Jiang, Lu, Ljungqvist, and Zhou (2017) show that Chinese SOEs experience a poorer allocation of their capitals compared to private firms (Non-SOEs), suggesting external monitoring mechanisms such as cross-listing can mitigate their agency problems. In this section, we test whether the AH cross-listing valuation premium for cash is more pronounced in SOE firms by performing the regressions for the subsamples of SOEs and Non-SOEs, separately. We first establish whether a firm is an SOE on Non-SOE according to the property of its actual controlling shareholder, as identified in the CSMAR database. Our final sample includes 5,379 SOE firm-year observations, 293 of which represent the 46 unique state-owned AH cross-listed firms.

Table 7 reports results for both the full and matched samples. The interaction terms of cross-listing and change in cash ($CL^{*}\Delta C_t$) are significantly positive in SOE sample firms, while Non-SOE sample firms show insignificant results. In the matched samples, the marginal value of an extra RMB of cash to shareholders is 0.499 RMB for non-cross-listed SOEs, and 1.179 RMB for cross-listed SOEs, on average. This result shows that the cross-listing valuation premium for cash holdings is more pronounced in SOEs, suggesting that cross-listing improves monitoring effectiveness.

3. Cross-listing sequence analysis

Whereas the literature on the bonding hypothesis of cross-listing focuses mainly on firms that list first on the domestic market and later on more developed markets, owing to the late formulation and immaturity of the Chinese capital market, Chinese firms tend to list first on the Hong Kong market and only later on the domestic market (First-H-then-A firms) or list on both markets at the same time (AH simultaneously firms) (Busaba, Guo, Sun, and Yu (2015)). Of the 54 AH cross-listed firms in the final

〈Table 7〉 Cross-listing and the Value of Cash Holdings: Regression for SOEs

This table examines the relation between the cross-listing of Chinese A- and H-shares and the value of corporate cash holdings with the subsample of state-owned enterprises (SOEs) and private firms (Non-SOEs). The dependent variable is the excess stock return with the value weighted average market return. ΔC_t is the change of cash holdings. CL is a dummy variable that has value of one if a firm is listed in both mainland China and Hong Kong stock markets. C_{t-1} is the value of cash holdings at the beginning of year t. Other variable definitions are in Table 1. Robust t-statistics appear in parentheses below the coefficient estimates. Significance of t-statistics at the 10%, 5%, and 1% levels are denoted by one, two, and three stars.

	Full Sample		Matched Sample	
	SOE	Non-SOE	SOE	Non-SOE
	(1)	(2)	(3)	(4)
ΔC_t	2.119***	1.232***	1.630***	3.170*
	(6.92)	(4.27)	(3.89)	(1.89)
$CL*\Delta C_t$	0.436**	0.171	0.652***	−1.180
	(2.51)	(0.19)	(2.66)	(−1.09)
CL	−0.060**	0.013	0.013	−0.045
	(−2.31)	(0.18)	(0.36)	(−0.62)
ΔE_t	0.728***	1.168***	0.293	1.361*
	(5.70)	(5.58)	(0.82)	(1.94)
ΔNA_t	0.142***	0.122***	0.062	0.188*
	(3.89)	(2.86)	(0.89)	(1.86)
ΔI_t	−1.545*	−3.010*	0.838	10.216**
	(−1.84)	(−1.84)	(0.54)	(2.57)
ΔD_t	2.167**	2.804***	0.943	3.664
	(2.13)	(3.54)	(0.49)	(1.06)
NF_t	0.071***	0.142***	0.061*	0.079
	(3.06)	(5.86)	(1.85)	(0.68)
C_{t-1}	0.535***	0.414***	0.443***	0.844***
	(9.56)	(7.55)	(5.01)	(4.11)
$C_{t-1}*\Delta C_t$	0.275	−0.120	0.083	1.536
	(1.10)	(−0.37)	(0.17)	(0.85)
L_t	−0.876***	−0.745***	−0.771***	−1.260***
	(−18.81)	(−19.47)	(−5.85)	(−5.88)
$L_t*\Delta C_t$	−3.195***	−2.038***	−2.365*	−4.513
	(−5.84)	(−3.43)	(−2.55)	(−1.55)
Year Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Observations	5,379	8,780	510	156
Adj R^2	0.212	0.153	0.286	0.391

sample, 26 listed first on Hong Kong market and 20 on both markets simultaneously. To address a concern that the sequence of cross-listing may drive our main findings, we split our sample into First-H-then-A firms and AH simultaneously firms and run analogous tests to our baseline regression. In Table 8, we find that the coefficients for the interaction terms between cross-listing and change in cash ($CL*\Delta C_t$), in the first

〈Table 8〉 Cross-listing and the Value of Cash Holdings : Cross-listing Sequence Analysis

This table examines the relation between the cross-listing of Chinese A- and H-shares and the value of corporate cash holdings for the subsample by cross-listing sequence. Test results for the subsample that listed on the Hong Kong stock market first are shown in the first, results for the subsample that listed on both the mainland China and Hong Kong stock markets simultaneously in the second, column. ΔC_t is the change of cash holdings. CL is a dummy variable that has value of one if a firm is listed in both mainland China and Hong Kong stock markets. C_{t-1} is the value of cash holdings at the beginning of year t. Other variable definitions are in Table 1. Robust t-statistics appear in parentheses below the coefficient estimates. Significance of t-statistics at the 10%, 5%, and 1% levels are denoted by one, two, and three stars.

	(1) First-H-then-A	(2) AH simultaneously
ΔC_t	1.511***	1.487***
	(5.72)	(5.61)
$CL * \Delta C_t$	0.736***	0.653*
	(4.12)	(1.70)
CL	-0.085***	0.028
	(-2.64)	(0.68)
ΔE_t	0.963***	0.995***
	(7.44)	(7.64)
ΔNA_t	0.125**	0.127***
	(3.70)	(3.75)
ΔI_t	-2.222***	-2.110**
	(-2.60)	(-2.48)
ΔD_t	2.704***	2.770***
	(4.13)	(4.20)
NF_t	0.105***	0.104***
	(5.51)	(5.45)
C_{t-1}	0.476***	0.480***
	(11.51)	(11.16)
$C_{(t-1)} * \Delta C_t$	0.074	0.111
	(0.31)	(0.45)
L_t	-0.775***	-0.778***
	(-25.51)	(-25.37)
$L_t * \Delta C_t$	-2.359***	-2.353***
	(-4.73)	(-4.67)
Year Fixed Effects	Yes	Yes
Industry Fixed Effects	Yes	Yes
Observations	13,959	13,911
Adj R^2	0.1726	0.1698

and second columns of Table 8, are significantly positive for these firms. The marginal values of cash holdings for shareholders are comparable between First-H-then-A firm (1.172 RMB) and AH simultaneously firms (1.077 RMB), and the both values are larger than the 0.799 for non-cross-listed firms. Our findings are robust to firms that list first on the Hong Kong stock market as well as to firms that listed on the A and H stock markets simultaneously.

Ⅴ. Conclusions

Corporate cash is easily diverted to, and its value greatly influenced by various corporate governance devices that impede the ability to extract, private benefit. Considerable research has shown one of these mechanisms to be cross-listing on an overseas stock market with stricter legal rules and supervision and greater transparency. Our examination of how the corporate governance enhancement effect of AH cross-listing affects the marginal value of corporate cash holdings reveals that shareholders value more highly the cash holdings of AH cross-listed than of non-cross-listed companies. The AH cross-listing valuation premium for cash holding is robust to a host of consistency checks.

Our results provide evidence that cross-listing is an external corporate governance mechanism with respect to the value of corporate cash holdings. Whereas past studies that have examined the evidence with international data are complicated by differences in legal, political, and financial systems, our analysis of Chinese AH cross-listed firms affords a homogeneous research setting with respect to investor base and information access. We further find that the AH cross-listing premium diminishes after the systematic changes in Chinese stock market. These empirical findings have implications as well for the effect of enhancements of Chinese corporate governance systems on corporate cash holdings.

References

Adams, R. B. and D. Ferreira, "A theory of friendly boards," *Journal of Finance*, Vol. 62 (2007), pp. 217-250.

Allen, F., J. Qian, and M. Qian, "Law, finance, and economic growth in China," *Journal of Financial Economics*, Vol. 77 (2005), pp. 57-116.

Almeida, H., M. Campello, and M. S. Weisbach, "The cash flow sensitivity of cash," *Journal of Finance*, Vol. 59 (2004), pp. 1777-1804.

Busaba, W. Y., L. Guo, Z. Sun, and T. Yu, "The dark side of cross-listing: A new perspective from China," *Journal of Banking and Finance*, Vol. 57 (2015), pp. 1-16.

Chen, D., D. Jiang, H. Lu, A. Ljungqvist, and M. Zhou, "State capitalism vs. private enterprise," *Working Paper*, New York University (2017).

Chen, Q., X. Chen, K. Schipper, Y. Xu, and J. Xue, "The sensitivity of corporate cash holdings to corporate governance," *Review of Financial Studies*, Vol. 25 (2012), pp. 3610-3644.

Chi, W. and H. Zhang, "Are stronger executive incentives associated with cross-listing? Evidence from China," *China Economic Review*, Vol. 21 (2010), pp. 150-160.

Coffee Jr, J. C., "Future as history: The prospects for global convergence in corporate governance and its implications," *Northwestern University Law Review*, Vol. 93, No. 3 (1998), pp. 641.

Coffee Jr, J. C., "Racing towards the top? The impact of cross-listings and stock market competition on international corporate governance," *Columbia Law Review*, Vol. 102, No. 7 (2002), pp. 1757-1831.

Dittmar, A., and J. Mahrt-Smith, "Corporate governance and the value of cash holdings," *Journal of Financial Economics*, Vol. 83 (2007), pp. 599-634.

Doidge, C. G., A. Karolyi., and R. M. Stulz, "Why are foreign firms listed in the US worth more?," *Journal of Financial Economics*, Vol. 71 (2004), pp. 205-238.

Fama, E. F. and K. R. French, "Taxes, financing decisions, and firm value," *Journal of Finance*, Vol. 53, No. 3 (1998), pp. 819-843.

Fama, E. F. and M. C. Jensen, "Separation of ownership and control," *Journal of Law and Economics*,

Vol. 26 (1983), pp. 301-325.

Faulkender, M. and R. Wang, "Corporate financial policy and the value of cash," *Journal of Finance*, Vol. 61 (2006), pp. 1957-1990.

Ferris, S. P., K. A. Kim, and G. Noronha, "The effect of crosslisting on corporate governance: A review of the international evidence," *Corporate Governance: An International Review*, Vol. 17 (2009), pp. 338-352.

Frésard, L. and C. Salva, "The value of excess cash and corporate governance: Evidence from US cross-listings," *Journal of Financial Economics*, Vol. 98 (2010), pp. 359-384.

Gao, H., J. Harford, and K. Li, "Determinants of corporate cash policy: Insights from private firms," *Journal of Financial Economics*, Vol. 109 (2013), pp. 623-639.

Hermalin, B. E. and M. S. Weisbach, "Boards of directors as an endogenously determined institution: A survey of the economic literature," *Federal Reserve Bank of New York Economic Policy Review*, Vol. 9 (2003), pp. 7-26.

Hung, M., T. J. Wong, and T. Zhang, "Political relations and overseas stock exchange listing: Evidence from Chinese state-owned enterprises," *Working Paper*, University of Southern California (2008).

Jensen, M. C. and W. H. Meckling, "Theory of the firm: Managerial behavior, agency costs and ownership structure," *Journal of Financial Economics*, Vol. 3 (1976), pp. 305-360.

Jiang, F., and K. A. Kim, "Corporate governance in China: A modern perspective," *Journal of Corporate Finance*, Vol. 32 (2014), pp. 190-216.

(Translated in English) Kang, Y., C. Kook, and J. Yoon, "How Does Good Corporate Governance Contribute to Firm Value?: Board Independence and Firm's Cash Holdings," *Asian Review of Financial Research*, Vol. 28 (2015), pp. 309-350.

Karolyi, G. A., "The world of cross-listings and cross-listings of the world: Challenging conventional wisdom," *Review of Finance*, Vol. 10 (2006), pp. 1-54.

Ke, B., O. Rui, and W. Yu, "Hong Kong stock listing and the sensitivity of managerial compensation to firm performance in state-controlled Chinese firms," *Review of Accounting Studies*, Vol. 17 (2012), pp. 166-188.

Knyazeva, A., D. Knyazeva, and R. W. Masulis, "The supply of corporate directors and board independence,"

Review of Financial Studies, Vol. 26 (2013), pp. 1561-1605.

Li, S., P. Brockman, and R. Zurbruegg, "Cross-listing, firm-specific information, and corporate governance: Evidence from Chinese A-shares and H-shares," *Journal of Corporate Finance*, Vol. 32 (2015), pp. 347-362.

Pagano, M., A. A. Röell, and J. Zechner, "The geography of equity listing: Why do companies list abroad?," *Journal of Finance*, Vol. 57 (2002), pp. 2651-2694.

Reese, W. A. and M. S. Weisbach, "Protection of minority shareholder interests, cross-listings in the United States, and subsequent equity offerings," *Journal of Financial Economics*, Vol. 66 (2005), pp. 65-104.

Sarkissian, S. and M. J. Schill, "The overseas listing decision: New evidence of proximity preference," *Review of Financial Studies*, Vol. 17 (2004), pp. 769-809.

Stulz, R. M., "Globalization, corporate finance, and the cost of capital," *Journal of Applied Corporate Finance*, Vol. 12 (1999), pp. 8-25.

〈Appendix〉 AH cross-listed firms in our final sample

No.	Company name	A-share code	A-share listing date	H-share code	H-share listing date
1	CIMC	000039.SZ	4/8/1994	2039.HK	12/19/2012
2	ZTE	000063.SZ	11/18/1997	0763.HK	12/9/2004
3	ZOOMLION	000157.SZ	10/12/2000	1157.HK	12/23/2010
4	WEICHAI POWER	000338.SZ	4/30/2007	2338.HK	3/11/2004
5	SCPH	000488.SZ	11/20/2000	1812.HK	6/18/2008
6	NEE	000585.SZ	12/13/1995	0042.HK	7/6/1995
7	JWTM	000666.SZ	12/10/1996	0350.HK	2/2/1996
8	XINHUA PHARM	000756.SZ	8/6/1997	0719.HK	12/31/1996
9	ANSC	000898.SZ	12/25/1997	0347.HK	7/24/1997
10	KELON	000921.SZ	7/13/1999	0921.HK	7/23/1996
11	GOLDWIND	002202.SZ	12/26/2007	2208.HK	10/8/2010
12	SHANDONG MOLONG	002490.SZ	10/21/2010	0568.HK	4/15/2004
13	BYD	002594.SZ	6/30/2011	1211.HK	7/31/2002
14	ZHEJIANG SHIBAO	002703.SZ	11/2/2012	1057.HK	5/16/2006
15	HNP	600011.SH	12/6/2001	0902.HK	1/21/1998
16	HDPI	600027.SH	2/3/2005	1071.HK	6/30/1999
17	SINOPEC CORP.	600028.SH	8/8/2001	0386.HK	10/19/2000
18	YANZHOUCOAL	600188.SH	7/1/1998	1171.HK	4/1/1998
19	FOSUN PHARMA	600196.SH	8/7/1998	2196.HK	10/30/2012
20	GYBYS	600332.SH	2/6/2001	0874.HK	10/30/1997
21	JCCL	600362.SH	1/11/2002	0358.HK	6/12/1997
22	ACC	600585.SH	2/7/2002	0914.HK	10/21/1997
23	TSINGTAO BREWERY	600600.SH	8/27/1993	0168.HK	7/15/1993
24	GSI	600685.SH	10/28/1993	0317.HK	8/6/1993
25	SPC	600688.SH	11/8/1993	0338.HK	7/26/1993
26	NPEC	600775.SH	11/18/1996	0553.HK	5/2/1996
27	KMJC	600806.SH	1/3/1994	0300.HK	12/7/1993
28	MAS C.L.	600808.SH	1/6/1994	0323.HK	11/3/1993
29	JINGCHENG MAC	600860.SH	5/6/1994	0187.HK	8/6/1993
30	YCF	600871.SH	4/11/1995	1033.HK	3/29/1994
31	DEC	600875.SH	10/10/1995	1072.HK	6/6/1994
32	LYG	600876.SH	10/31/1995	1108.HK	7/8/1994
33	CISC	601005.SH	2/28/2007	1053.HK	10/17/1997
34	FIRST TRACTOR	601038.SH	8/8/2012	0038.HK	6/23/1997
35	CHINA SHENHUA	601088.SH	10/9/2007	1088.HK	6/15/2005
36	CRCC	601186.SH	3/10/2008	1186.HK	3/13/2008
37	GAC GROUP	601238.SH	3/29/2012	2238.HK	8/30/2010
38	China Railway Group Limited	601390.SH	12/3/2007	0390.HK	12/7/2007
39	BEIJING N STAR	601588.SH	10/16/2006	0588.HK	5/14/1997
40	CHALCO	601600.SH	4/30/2007	2600.HK	12/12/2001
41	SHANGHAI PHARMA	601607.SH	3/24/1994	2607.HK	5/20/2011
42	MCC	601618.SH	9/21/2009	1618.HK	9/24/2009
43	GREAT WALL MOTOR	601633.SH	9/28/2011	2333.HK	12/15/2003
44	ZMJ	601717.SH	8/3/2010	0564.HK	12/5/2012
45	SHANGHAI ELECTRIC	601727.SH	12/5/2008	2727.HK	4/28/2005
46	CSR	601766.SH	8/18/2008	1766.HK	8/21/2008
47	CCCC	601800.SH	3/9/2012	1800.HK	12/15/2006
48	COSL	601808.SH	9/28/2007	2883.HK	11/20/2002
49	PETROCHINA	601857.SH	11/5/2007	0857.HK	4/7/2000
50	CHINA COAL ENERGY	601898.SH	2/1/2008	1898.HK	12/19/2006
51	ZIJIN MINING	601899.SH	4/25/2008	2899.HK	12/23/2003
52	DATANG POWER	601991.SH	12/20/2006	0991.HK	3/21/1997
53	BBMG	601992.SH	3/1/2011	2009.HK	7/29/2009
54	CMOC	603993.SH	10/9/2012	3993.HK	4/26/2007