Do Cross-listed Firms Have a Better Governance Structure and Lower Agency Costs?: Evidence from Chinese Firms

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Background

➢ Global financial markets have become more integrated and the interdependence among local markets has greatly increased

➢ However, the Chinese A-share listed domestic market continued to decline, despite the open door policy and its sound economic fundamentals

➢ Chinese firms turned to foreign markets for sustainable finance, and many submitted listing applications to the Hong Kong Stock Exchange (hereafter HKSE)

> **Cross-listing, Corporate Governance and Agency Costs**

- – Cross-listings achieve great importance in the international financial markets, and studies in correlation with them are a major theme in the financial field (Karolyi, 1998, 2006).

- – Cross-listing is <u>when a company lists its shares on more than one stock exchange</u>

- – With cross-listings and corporate governance being hot topics, it is unsurprising that the intersection between the two, <u>especially in an emerging market</u>, attracts much interest.

> **Cross-listing, Corporate Governance and Agency Costs**

- We examine the <u>HKSE cross-listing effects of Chinese firms on corporate governance and agency costs</u>

- Our perspective on corporate governance is an <u>agency perspective</u>, or separation of ownership and control (Shleifer and Vishny, 1997)

- We show that cross-listing reduces agency costs, → is associated with <u>significant improvement in corporate governance structures</u>

➢ **Cross-listing, Corporate Governance and Agency Costs**

- – This study included a total of 132 sample firms comprising 66 Chinese firms cross-listed on the HKSE and 66 firms listed only on the A-share local exchange;
  - – these are matched manually by considering the financial aspects of each firm in 2013–2015 .
- – In particular, we investigate whether <u>a different effect occurs on corporate governance</u>, <u>thus affecting agency costs between the two sample groups</u>.

➢ **Cross-listing literature**

- Since the pioneering work of Stapleton and Subrahmanyam (1977) , researchers have started paying attention to cross-listing issues
- Coffee (1999 , 2002); Reese and Weisbach (2002); Wojcik, Clark, and Bauer (2004); Doidge et al. (2007)

➢ Chinese literature

- Cross-listing has positive effects on corporate governance, reducing capital cost, and strengthen their competitiveness (Lu (2003), Zhao (2006), He et al. (2010))

➢ **Chinese literature (cont'd)**

– Ji and Liu 2011: superior board structure & more independent outside directors ← role of the board

– Li and Han 2012: increase in firm values of cross-listed

– Cui (2004) and Qiu (2005): to reduce capital costs

➢Contributions
- – <u>Few studies</u> examine the difference between corporate governance effect of the Chinese cross-listed and domestic firms on agency costs
- – We shed some light on the effects of cross-listing on agency costs through <u>the improved corporate governance of Chinese firms</u>.
- – In other words, revealing cross-listing's role in reducing agency costs through better corporate governance may be meaningful

Hypotheses Development I

➢Hypotheses 1-3

1. *The equity ownership of majority shareholders is negatively associated with the agency cost*

2. *The managerial equity ownership has a negative relation with the agency cost.*

3. *The degree of ownership check has an indeterminate relationship with agent costs.*

➢ Hypotheses 4-7

4. *The size of the board has an indeterminate relationship with agency costs*

5. *The ratio of outside directors is negatively related to agency costs*

6. *Agency costs are higher for firms in which the chairman and CEO are the same person*

7. *There is a negative relationship between agency costs and board activities*

Hypotheses Development III

➢ Hypotheses 8-9

8. *Institutional investors' equity ownership has a negative relationship with agency costs*

9. *Managerial compensation has an indeterminate relationship with agency costs.*

➢ **Two groups of sample firms**

- − **Cross-listed:** 66 across seven industrial sectors

- − **Domestic firms:** 66 A-share in the same sector with a similar firm size (market capitalization value) in a one-to-one matching manner

- − The sample period is 2013–2015

- − All data—including financial data and corporate governance data—are extracted from the CSMAR database

Data and Methodology II

➢ **Measurement of Agency Costs**

 − Dep. Variable: two different proxy measures

 − 1) Asset Turnover Ratio (Ang et al. 2000, Singh and Davidson 2003, Henry 2010) → AC1

 − 2) Selling, General, and Administrative Expense Ratios (Ang et al. 2000; Singh and Davidson 2003; Park and Noh 2008; Henry 2010; Du 2014) → AC2

➢ **Definition of Independent and Control Variables**

- − Indep. Variables: Board size, board's activities, the CEO duality, the ratio of outside directors on the board, largest shareholder ownership, managerial ownership, institutional ownership, and managerial compensation

- − Ctrl. Variables: firm size, debt ratio, cash ratio, year dummy and industry dummy

<Table 2> Variable Definition and Measurements

Variable	Definition and Measurement
Agency costs (AC1)	Measured as annual total revenue divided by annual total assets. This provides a relative quantitative measure of the effectiveness of firm investment decisions and the ability of the firm's management to direct assets to their most productive use. Firms with lower asset utilization ratios are making sub-optimal investment decisions or using funds to purchase unproductive (non-revenue-generating) assets and creating agency costs for shareholders. This is similar to the variables used by Ang et al. (2000) and Singh and Davidson III (2003).
Agency costs (AC2)	Measured as the selling, general, and administrative expense divided by the annual total revenue. Firms with higher selling, general, and administrate expense ratios make sub-optimal investment decisions when unnecessary costs occur as a result of management's discretionary decisions, thus indicating that the agent cost increases. This is similar to variables used by Ang et al. (2000), Singh and Davidson III (2003), Park and Noh (2008), and Du (2014).
Board size (persons)	Measured as the natural logarithm of the total number of board members
Board activity (times)	Measured as the natural logarithm the total frequency of board meetings during a specific year
CEO Duality	Defined by an indicator variable coded 1 if the CEO is also the chairperson of the board of directors and 0 otherwise
Outside director ratio	Measured as the proportion of the total board comprised of independent directors
Largest shareholder ownership	Measured as the proportion of the largest shareholders' ownership
Managerial ownership	Measured as the proportion of total firm equity capital held by all company directors
Institutional ownership	Measured as the total shareholding ratio of all institutional shareholders
Control right restraint (times)	Measured as the sum of the number of shares from the second-largest shareholder to the fifth-largest shareholder divided by that of the largest shareholder.
Board Compensation (¥10,000 RMB)	Measured as the natural logarithm of the sum of total annual benefits paid to all board members (including directors and auditors)
Firm size (¥100 Mil. RMB)	Measured as the natural logarithm of total assets at the end of the financial year
Debt ratio	Measured as the total debt divided by the total assets
Cash ratio	Measured as the cash and cash equivalents divided by current liabilities

➢ **Methodology**

- − 1) we examined whether any difference occurs in corporate governance attributes between cross-listed firms and domestic ones.

- − 2) we examined how agency costs are related to those governance variables

- − We used the following specification <u>via a fixed-effects controlled model</u> for firm i and year t.

- − $AC_{i,t}^{1\,or\,2} = \beta_0 + \sum_{j=1}^{n} \beta_j \left(Gov._{ji,t} \right) + \sum_{k=n+1}^{n+m} \beta_k \left(Fin._{ki,t} \right) + \sum_{l=n+m+1}^{n+m+o} \beta_l \left(Dum._{li,t} \right) + c_i + u_{it}$

Empirical Results I

➢ Descriptive Statistics: Panel A

<Table 3> Descriptive Statistics for the Overall Sample Period 2013–2015

Variable	Mean	SD	Min.	Max.	N
Panel A: Overall period of 2013–2015					
Agency costs (AC1)	0.6023	0.4576	0.0863	3.2808	396
Agency costs (AC2)	0.1099	0.0735	0.0120	0.4944	396
Board size (persons)	9.7625	2.1558	5.0000	18.0000	396
Board activity (times)	10.6490	5.5411	2.0000	48.0000	396
Duality	0.1591	0.3662	0.0000	1.0000	396
Outside director ratio	0.3799	0.0639	0.2500	0.8000	396
Largest shareholder ownership	0.4389	0.1515	0.0180	0.8635	396
Managerial ownership	0.0381	0.1145	0.0000	0.5342	396
Institutional ownership	0.2813	0.2060	0.0008	0.9506	396

➤ Descriptive Statistics: Panel B

Control right Restraint (times)	**0.6872**	**0.8560**	**0.0057**	**13.7000**	**396**
Board Compensation (¥10,000 RMB)	978.28	967.82	120.40	8,222.40	396
Firm size (¥100 Mil. RMB)	1,159.73	2,791.60	4.6273	24,053.78	396
Debt ratio	0.5632	0.1874	0.0103	1.1037	396
Cash ratio	0.5440	1.8112	0.0014	33.2261	396

Panel B: Annual mean values of 2013–2015			
	2013	2014	2015
AC1	0.6466	0.6128	0.5476
AC2	0.1050	0.1094	0.1152
Board size (persons)	9.9620	9.8333	9.4923
Board activity (times)	9.7196	10.7803	11.4469
Duality	0.1515	0.1591	0.1667
Outside director ratio	0.3785	0.3728	0.3886
Largest shareholder ownership	0.4433	0.4426	0.4307
Managerial ownership	0.03930	0.03715	0.03790
Institutional ownership	0.2918	0.2763	0.2758
Control right Restraint (times)	0.6553	0.7211	0.6852
Board Compensation (¥10,000 RMB)	919.75	982.31	1,032.79
Firm size (¥100 Mil. RMB)	1,024.26	1,195.61	1,259.32
Debt ratio	0.5615	0.5683	0.5597
Cash ratio	0.6980	0.4672	0.5818

Note: Panel A provides summary statistics for all firms in 2013−2015 used in our analysis. Meanwhile, Panel B provides means in an annual panel of these firms for 2013−2015. <Table 2> provides variable definition and measurements.

➤ T-Test Results

<Table 4> Descriptive Statistics and t-Test Results for Cross-Listed and Domestically Listed Firms

variable	Cross-listed firms				A-share listed firms				diff.	t-value
	Mean (A)	SD	Min	Max	Mean (B)	SD	Min	Max	(A - B)	
AC1	0.6573	0.5076	0.1080	3.2808	0.5473	0.3952	0.0863	2.1089	0.1100	2.41**
AC2	0.1085	0.0747	0.0120	0.3744	0.1112	0.0724	0.0131	0.4944	-0.0027	-0.36
BodSize	2.2724	0.2342	1.6094	2.8904	2.2376	0.1979	1.6094	2.8332	0.0348	1.60
BodAct	2.3096	0.5081	0.6931	3.8712	2.2083	0.3860	1.0986	3.4657	0.1013	2.24**
Duality	0.1364	0.3440	0.0000	1.0000	0.1818	0.3867	0.0000	1.0000	-0.0454	-1.24
OutDir	0.3884	0.0664	0.2857	0.6667	0.3714	0.0602	0.2500	0.8000	0.0170	2.67***
Own	0.4434	0.1415	0.1513	0.8635	0.4343	0.1612	0.0180	0.8034	0.0091	0.59
DirOwn	0.0187	0.0798	0.0000	0.4604	0.0576	0.1385	0.0000	0.5342	-0.0389	-3.42***
InsHold	0.3630	0.1875	0.0008	0.9506	0.1996	0.1910	0.0021	0.7378	0.1634	8.59***
CR2-5-1	0.8311	0.4540	0.1300	2.0920	0.5433	1.1051	0.0057	13.7000	0.2878	3.39***
BodComp	15.9208	0.8363	14.0012	18.2250	15.6161	0.7093	14.1815	17.8575	0.3047	3.91***
Size	24.6667	1.6860	20.0000	29.0000	23.7677	1.4728	20.0000	28.0000	0.8990	5.65***
Lev	0.5776	0.1763	0.1228	1.0373	0.5487	0.1972	0.0103	1.1037	0.0289	1.54
Cash	0.3514	0.3287	0.0014	1.8753	0.7366	2.5288	0.0154	33.2261	-0.3852	-2.13**

Note: This table reports summary statistics between cross-listed and domestically listed firms and presents results from the t-test between the two groups. <Table 2> provides variable definition and measurements.

*, **, and *** indicate statistical significance at 10%, 5%, and 1% levels, respectively.
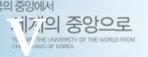
➢ Correlation Analysis I

<Table 5> Pearson Pairwise Correlations between the Major Variables for Cross-Listed Firms

	AC1	AC2	BodSize	BodAct	Duality	OutDir	Own	DirOwn	InsHold	CR2-5-1	BodComp	Size	Lev	Cash
AC1	1													
AC2	-.0847 (.2356)	1												
BodSize	0.1031 (.1484)	-.0554 (.4387)	1											
BodAct	-.0815 (.2537)	.1650 (.0202**)	.1476 (.038)	1										
Duality	.1288 (.0705**)	.0158 (.8257)	.0325 (.6494)	-.1146 (.108)	1									
OutDir	.0164 (.8187)	.0070 (.9217)	-5569 (<.0001)	-.0005 (.9948)	.1044 (.1433)	1								
Own	.1728 (.0149**)	-2225 (.0016**)	-.0550 (.4418)	.0238 (.7395)	-.1627 (.022)	.1223 (.0861)	1							
DirOwn	-.0813 (.2549)	.0769 (.2817)	-.2226 (.0016)	.0048 (.9463)	.1443 (.0425)	.0730 (.307)	-.2342 (.0009)	1						
InsHold	.1426 (.045**)	-.0660 (.3555)	.1181 (.0975)	-.0554 (.4382)	.0934 (.1907)	-.1505 (.0343)	-.2984 (<.0001)	-.0306 (.6692)	1					
CR2-5-1	-.1345 (.0588*)	.004 (.9558)	.1144 (.1084)	-.0377 (.5981)	.1256 (.078)	-.1412 (.0473)	-.7819 (<.0001)	.2953 (<.0001)	0.3073 (<.0001)	1				
BodComp	.0765 (.284)	.0905 (.2048)	.1494 (.0356)	.2510 (.0004)	.1207 (.0904)	.0908 (.2035)	-.1416 (.0467)	.0075 (.9168)	.0664 (.3529)	.1094 (.1249)	1			
Size	.0792 (.2676)	-.4366 (<.0001***)	.1207 (.0903)	.0590 (.4087)	-.0525 (.4625)	.1869 (.0084)	.4217 (<.0001)	-.2045 (.0039)	-.2415 (.0006)	-.2291 (.0012)	.4438 (<.0001)	1		
Lev	-.0679 (.3421)	-.0455 (.5241)	.0782 (.2733)	.2436 (.0005)	-.0084 (.9063)	.0731 (.3058)	.0769 (.2814)	-.048 (.5018)	-.1016 (.1558)	-.0766 (.2834)	.1750 (.0137)	.3840 (<.0001)	1	
Cash	-.2295 (.0011**)	.1391 (.0506*)	.0014 (.9845)	.0262 (.7142)	-.0628 (.3797)	-.011 (.8774)	-.226 (.0014)	.0062 (.9307)	.1275 (.0734)	.2305 (.0011)	-.0118 (.869)	-.3041 (<.0001)	-.4402 (<.0001)	1

Note: <Table 2> provides variable definition and measurements. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. T-statistics are presented in parentheses.

Empirical Results Ⅴ

➢ Correlation Analysis II

<Table 6> Pearson Pairwise Correlations between the Major Variables for Domestically Listed Firms

	AC1	AC2	BodSize	BodAct	Duality	OutDir	Own	DirOwn	InsHold	CR2-5	BodComp	Size	Lev	Cash
AC1	1													
AC2	-.2026 (.0042)	1												
BodSize	-.0222 (.7558)	-.1057 (.1382)	1											
BodAct	.1339 (.06*)	-.1607 (.0237**)	.0272 (.7034)	1										
Duality	-.0946 (.185)	.0621 (.3845)	-.2715 (.0001)	.0345 (.6296)	1									
OutDir	.003 (.967)	-.1498 (.0351**)	-.4819 (<.0001)	.0945 (.1855)	.212 (.0027)	1								
Own	.118 (.0977*)	-.5025 (<.0001***)	.0382 (.5935)	-.2572 (.0003)	-.1253 (.0785)	.0517 (.4693)	1							
DirOwn	-.1191 (.0946*)	.3178 (<.0001***)	-.2021 (.0043)	.0571 (.4241)	.4045 (<.0001)	-.0404 (.5723)	-.3136 (<.0001)	1						
InsHold	-.1306 (.0667*)	.1982 (.0051*)	.0199 (.7807)	.1683 (.0178)	-.154 (.0303)	-.1322 (.0634)	-.2361 (.0008)	-.1202 (.0916)	1					
CR2-5	.0083 (.9072)	.2062 (.0036**)	.0449 (.5299)	.1006 (.1587)	.0031 (.9654)	-.0435 (.5433)	-.5265 (<.0001)	.0719 (.3142)	.0439 (.5392)	1				
BodComp	.2227 (.0016**)	.0576 (.4205)	.0877 (.219)	.0928 (.1933)	-.1583 (.026)	.0232 (.7455)	-.0086 (.9041)	-.1209 (.0897)	.1933 (.0064)	.021 (.7695)	1			
Size	.1593 (.025**)	-.5533 (<.0001***)	.1243 (.081)	-.0536 (.4536)	-.2463 (.0005)	-.2433 (.0006)	.4797 (<.0001)	-.4193 (<.0001)	-.0368 (.6071)	-.1985 (.0051)	.3554 (<.0001)	1		
Lev	.2106 (.0029**)	-.345 (<.0001***)	.0697 (.3292)	.1236 (.0827)	-.1525 (.032)	.0883 (.216)	.1351 (.0578)	-.3146 (<.0001)	.1353 (.0574)	-.028 (.6958)	.1329 (.062)	.479 (<.0001)	1	
Cash	-.1179 (.0981*)	.0719 (.3141)	-.0272 (.7033)	-.0067 (.9251)	-.0269 (.7068)	.0187 (.7937)	-.0094 (.8958)	-.0168 (.814)	-.0129 (.8572)	.0026 (.9709)	-.1007 (.1581)	-.2207 (.1581)	-.4027 (<.0001)	1

Note: <Table 2> provides variable definition and measurements. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. T-statistics are presented in parentheses.

➤ Regression Results

<Table 7> Fixed-Effect Controlled Regressions of Corporate Governance and Agency Costs

Dependent variable: agency costs	Cross-listed firms		Domestically listed firms	
	AC1	AC2	AC1	AC2
Board size	0.2397** (2.36)	-0.01320 (-0.72)	-0.2621** (-2.21)	0.0124 (0.23)
Board activity	0.0247 (0.64)	0.0013 (0.19)	-0.00138 (-0.05)	-0.0061 (-0.47)
Duality	0.0419 (0.92)	-0.0079 (-0.96)	0.0451 (0.76)	-0.0267 (-0.97)
Outside director ratio	0.2863 (1.26)	-0.0449 (-1.10)	-0.1493 (-0.50)	0.0477 (0.35)
Largest shareholder ownership	0.7729* (1.94)	-0.1889*** (-2.63)	-0.0785 (-0.46)	-0.0192 (-0.25)
Managerial ownership	-2.0816 (-1.12)	-0.3409** (-1.02)	-0.3848 (-0.73)	-0.4354* (-1.81)
Institutional ownership	0.1298* (1.66)	-0.0282** (-2.01)	-0.0959 (-1.04)	0.0962** (2.29)
Control right restraint	0.2660*** (3.03)	-0.0183 (-1.15)	0.00824 (0.91)	-0.0016 (-0.39)
Board compensation	0.0986*** (3.09)	-0.0160*** (-2.79)	0.00087 (0.03)	0.0406** (2.58)
Firm size	-0.1517** (-2.13)	-0.0174 (-1.36)	-0.0094 (0.43)	-0.0269*** (-2.83)
Debt ratio	-0.0792 (-0.04)	0.1052*** (2.87)	-0.5304*** (-4.26)	0.0822 (1.45)
Cash ratio	-0.0815* (-1.73)	0.0044 (0.52)	-0.0059* (-1.75)	-0.00054 (-0.35)
Constant	-1.2099 (-1.18)	0.8999*** (3.10)	1.6725** (2.30)	0.0739 (0.22)
Adjusted R^2	0.40	0.31	0.45	0.26
Wald statistic	5.66***	3.70***	5.96***	2.54***

Note: Although year dummy variables are included in the regression models, their coefficients are not reported in Table 7. We calculated Z-statistics using robust standard errors and reported them in parentheses. <Table 2> provides variable definition and measurements. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

➢**Robustness**

- Potential <u>endogeneity</u> issue

- Following Henry (2010), ***<u>strict exogeneity</u>***
  <u>test</u> for panel data (Wooldridge (2002))

  - based on the estimation of the following fixed-effects model with <u>the future values of</u>
    <u>explanatory variables</u> for firm i and year t:

$$AC_{i,t}^{1 \text{ or } 2} = \alpha + \beta X_{i,t} + \gamma W_{i,t+1} + c_i + u_{it}$$

> ## Robustness: Strict Exogeneity Test

<Table 8> Strict Exogeneity Tests Using Fixed Effects for the Relationship b/w CG and

Dependent variable: agency costs	Cross-listed firms		Domestically listed firms	
	AC1	AC2	AC1	AC2
Board size$_t$	0.0509 (0.20)	0.00692 (0.21)	-0.4544** (-2.48)	-0.01324 (-0.19)
Board activity$_t$	-0.0818** (-2.15)	0.00545 (0.52)	0.02034 (0.52)	0.00709 (0.48)
Duality$_t$	-0.00261 (-0.47)	-0.00772 (-0.51)	0.1392 (1.35)	-0.08358** (-2.14)
Outside director ratio$_t$	0.3270 (1.61)	-0.07125 (-1.29)	0.1205 (0.27)	0.09318 (0.56)
Largest shareholder ownership$_t$	-0.07277 (-1.27)	-0.02906 (-0.19)	-0.5180* (-1.86)	0.08482 (0.81)
Managerial ownership$_t$	-0.01431 (-0.10)	-0.02622 (-0.69)	-0.6525 (0.56)	-1.3483*** (-3.06)
Institutional ownership$_t$	-0.00456 (-0.03)	-0.01088 (-0.30)	0.03251 (0.57)	-0.0206 (-0.45)
Control right restraint$_t$	-0.01909 (-1.00)	0.02291 (0.44)	-0.0510 (-0.68)	0.00141 (0.05)
Board compensation$_t$	0.0405 (1.21)	-0.01285 (-1.41)	0.02548 (0.54)	0.04395** (2.48)
Firm size$_t$	-0.02406*** (-2.78)	0.02182 (0.92)	-0.00290 (-0.10)	-0.00037 (-0.03)
Debt ratio$_t$	0.2606 (0.85)	0.03678 (0.44)	-0.4127* (-1.76)	0.00509 (0.06)
Cash ratio$_t$	-0.00371 (-0.72)	0.00582 (0.41)	-0.00612 (-1.56)	-0.000010 (-0.01)
Board size$_{t-1}$	0.1256 (1.04)	0.03417 (1.04)	-0.01897 (-1.06)	0.00322 (0.05)
Board activity$_{t-1}$	-0.01061** (-2.28)	0.00973 (0.77)	0.06192 (1.61)	-0.00451 (-0.31)
Duality$_{t-1}$	0.1244*** (2.91)	-0.01351 (-1.16)	-0.03898 (-0.43)	-0.01421 (-0.41)
Outside director ratio$_{t-1}$	0.4868* (1.81)	0.02715 (0.37)	-0.02623 (-0.06)	0.1178 (0.74)
Largest shareholder ownership$_{t-1}$	0.5931* (1.70)	0.06671 (0.70)	0.1585 (0.42)	-0.1606 (-1.13)
Managerial ownership$_{t-1}$	2.9451 (0.82)	-0.9044 (-0.93)	-1.1659 (-1.28)	-0.2638 (-0.77)
Institutional ownership$_{t-1}$	0.02800 (0.45)	-0.00777 (-0.46)	0.2718 (1.56)	-0.02423 (-0.37)
Control right restraint$_{t-1}$	0.05333 (0.69)	0.00830 (0.39)	-0.07409 (-0.78)	0.00031 (-0.01)
Board compensation$_{t-1}$	0.09271** (2.66)	-0.01010 (-1.06)	-0.02802 (-0.55)	0.000092 (0.00)
Firm size$_{t-1}$	0.09538 (1.00)	-0.05850** (-2.25)	0.0401 (0.43)	-0.03098** (-2.54)
Debt ratio$_{t-1}$	-0.04455** (-2.61)	0.1618*** (3.47)	-0.01883 (-1.08)	-0.1014 (-1.54)
Cash ratio$_{t-1}$	0.02238 (0.41)	0.00876 (0.59)	-0.01957 (-0.67)	0.00465 (0.42)
Adjusted-R	0.72	0.43	0.56	0.61
Wald statistic	4.29***	1.25	1.93**	2.34***

Note: Although year dummy variables are included in the regression models, their coefficients are not reported in Table 7 We calculated Z-statistics using robust standard errors and reported them in parentheses. <Table 2> provides variable definition and measurements. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

➤ **Robustness**

- − Potential endogeneity issue

- − <u>2SLS with instrumental variables</u>

  - ▪ Note that endogenous relationships were observed between asset efficiency proxy for agency costs and certain governance attributes and other control variables but *only for cross-listed firms*

  - ▪ Instruments: <u>lagged values of the identified endogenous variables</u> (Hermalin and Weisbach (1998), Coles et al. (2008), McKnight and Weir (2009), and Henry (2010))

➢ **Robustness: 2SLS with Instruments**

\<Table 9\> Fixed Effects IV Regression

Dependent variable: agency costs	Cross-listed firms
	AC1
Board size	0.2961 (0.79)
Board activity	-0.02679 (-0.27)
Duality	0.1381 (0.65)
Outside director ratio	-1.568533 (-0.73)
Largest shareholder ownership	0.8746 (1.60)
Managerial ownership	-0.4058 (-1.43)
Institutional ownership	0.6074** (2.06)
Control right restraint	0.08725 (0.76)
Board compensation	0.01481 (0.25)
Firm size	0.02786 (0.94)
Debt ratio	-0.5305** (-2.32)
Cash ratio	-0.4082*** (-3.56)
Adjusted-R^2	0.72
Wald-statistic	4.29***

Note: Although year dummy variables are included in the regression models, Table 9 does not report their coefficients. Z-statistics are calculated using robust standard errors and are reported in parentheses. Table 2 provides the variable definition and measurements. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

➢ We analyzed the effects of the Chinese companies cross-listed on HKSE compared with the domestically listed ones on agency costs for 2013–2015

- – <u>Two proxy variables</u> used for agency costs

➢ We found that companies with an HKSE cross-listing generally had <u>better corporate governance</u> than companies without the cross-listing.

- – The HKSE cross-listed firms had better corporate governance in terms of *the largest shareholder ownership, institutional ownership, and managerial compensation.*

- – By contrast, domestically listed firms experienced the *adverse effects of institutional blockholders' roles and higher board pay.*

Conclusions II

➢ The results remain similar if we control for the potential endogeneity problem

- – *2SLS estimation* using the one-year lagged value of the endogenous explanatory variables as instruments

- – confirms that *institutional ownership* has a statistically significant influence on reducing agency costs for only cross-listed firms.

➢ Limitations and Future Research
  - – Suggests that many issues remain to be resolved with the governance structure of domestic companies in China.
  - – For future research, it would be worthwhile *extending the overall sample period by including coverage of more firms* and developing *better agency cost proxies* that reflect the specific incentives of managers in Chinese firms.

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Thank you!