



Received: 19 November 2013
Accepted: 14 September 2014
Published: 14 October 2014

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Reviewing editor:
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RESEARCH ARTICLE

Cross-listing, managerial compensation and corporate governance

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Abstract: This study examines the relationship between cross-listing and managerial compensation of Chinese firms that concurrently issued A- and B-shares or A- and H-shares during 2001–2010. The results show that executive compensation is a positive factor to motivate Chinese A-share firms to cross-list as B- or H-shares; it implies that cross-listings could be employed as a way of asset appropriation at the managers' discretion. The results also confirm that corporate governance is important in determining cross-listings. Under the weak corporate governance institution, Chinese firms were chosen to cross-list based on political considerations rather than on economic merits, serving as a vehicle to signal the quality of state owned enterprises. The results are drawn on agency theory, signalling hypothesis and bonding hypothesis.

Keywords: cross-listing, executive compensation, corporate governance, China

JEL classifications: G3, G15, G32, G38, J33

1. Introduction

There is a sizable literature on possible motivations for the cross-listing of shares (Karolyi, 2006), but the reasons why Chinese firms decide to cross-list probably will differ from their US and European



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PUBLIC INTEREST STATEMENT

Why do firms cross-list their shares on foreign exchanges? The literature elicits that cross-listing occurs due to agency cost, market signalling and legal bonding. However, the determinants of Chinese firms to cross-list are quite different from their counterparts in the US and Europe because the Chinese firms traditionally have separate, restricted classes of shares for domestic residents and foreigners, and China is the only country in which the government controls the size of the stock market, the pace of issue and the allocation of resources. This paper employs Logistic regressions showing that the level of Chinese executive compensation is highly associated with the decision of cross-listings, and cross-listings could be employed by the management as a way of asset appropriation when corporate governance is weak. The possible reasons for Chinese firms to cross-list overseas, especially in the early days, were based on political considerations rather than on economic merits. The results have important implication for international portfolio diversification.

counterparts. Typically, the Chinese firms have separate, restricted classes of shares for domestic residents and foreigners (Fernald & Rogers, 2002). The A-shares are largely available only for Chinese citizens, while B-shares can be purchased mainly by foreign investors before March 2001. Although many firms choose to cross-list in mainland China on either the Shanghai stock exchange (SHSE) or the Shenzhen stock exchange (SZSE), the firms also have options to cross-list on the Hong Kong Exchange (HKEX) as H-shares or other international markets.¹ However, the reasons for Chinese A-share firms to concurrently issue B- or H-shares might be quite different. For instance, Yang and Lau (2006) and Li, Yan, and Greco (2006) show that the returns on Chinese A-share and H-shares are significantly different and Chinese H-shares have advantages to B-shares. In addition, Eun and Huang (2007) show that Chinese investors value local A-shares more highly if the firm has corresponding B- or H-shares available to foreign investors; on the other hand, the Chinese domestic A-shares and overseas shares are segmented; the A-shares trade at a huge premium over H- or B-share counterparts (Jia, Sun, & Tong, 2005). Therefore, the study on Chinese cross-listings has broad implications for international portfolio diversification.

Other arguments on Chinese cross-listings are based on signalling hypothesis. Particularly, China is the only country in which the government controls the size of the stock market, the pace of issue and the allocation of resources. Gao (2002) shows that the Chinese government represents an extreme case in terms of setting strict regulations for initial public offerings (IPOs), the average length of time for Chinese firms to list on a domestic exchange is five years. Moreover, Zhang and King (2010) claim that government-owned banks take away the cheap and easy access to bank loans, limiting the sources of capital for Chinese firms. Most importantly, the Chinese government has a strong incentive to intervene in the domestic stock market and thereby the market prices of equity generally do not reflect the firms' intrinsic value (Chen, Chen, & Gu, 1997). As a result, the overseas listed Chinese shares are traded in big discounts relative to A-shares in domestic markets (Wang, Xu, & Zhu, 2004). Further, Hung, Wong, and Zhang (2008) point out that the Chinese overseas shares are selected by the government or dominated by state owned enterprises (SOEs), and their issuances are primarily determined by political relations, not by the firms' desire to find growth opportunities or expand foreign sales. Therefore, it is important to address the role of government and executives in cross-listings. Were the Chinese cross-listings simply served as a vehicle to signal the quality of SOEs based on political considerations? Could the Chinese firms gain superior quality and long-run profitability through cross-listings?

Moreover, China has a relatively weak corporate governance environment in contrast to those developed countries. Particularly, there are various types of non-tradable shares in the Chinese stock market since the Chinese government is fear of losing its control over the public firms. These non-tradable shares cause severe agency problems and lead to a weak corporate governance institution (Luo, Fang, & Esqueda, 2012). According to the bonding hypothesis (Coffee, 2002), firms incorporated in a jurisdiction with weak protection of minority shareholders can voluntarily subject themselves to higher disclosure standards and stricter enforcements in order to attract investors. Therefore, effective corporate governance and strong legal protection system are very important for preventing minority shareholders from expropriation by controlling shareholders (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 1998). In 2005, the Chinese government implemented the split share structure reform (also called reform hereafter) with an attempt to increase the proportion of shares that were freely tradable in the Chinese stock markets. As a result, substantial changes in corporate governance and overseas issuances were observed after the reform. This study analyses the effects of governance shift on the cross-listing decision, and thereby adds further insights into the understanding of the significance of corporate governance in emerging markets.

The results suggest that the level of Chinese executive compensation is positively associated with the decision of cross-listings, implying that cross-listings could be employed as a way of asset appropriation at the managers' discretion when corporate governance is weak. Moreover, the results confirm that the cross-listing decision of Chinese firms is primarily determined by political needs, not by a firm's desire to fund growth and expand foreign sales (Hung et al., 2008). Especially in the early

days, the possible reasons for Chinese firms to cross-list in Hong Kong were based on political considerations rather than on economic merits (Jia et al., 2005). Finally, the results show that changes in corporate governance have great impact on Chinese cross-listings. The results are drawn on agency theory, signalling hypothesis and bonding hypothesis.

2. Literature review and hypotheses

Why do firms attempt to issue new equity overseas? According to agency theory, an overseas listing contributes to corporate value by increasing the firms' free cash flow (FCF) and reducing the firms' leverage (Jensen, 1986). The presumption of agency theory is that funds raised via cross-listings will be channelled towards potentially profitable projects. However, FCF may be utilized as a means of investment in inefficient overseas projects, particularly in the Chinese context where corporate governance is weak. There are several reasons. First, the Chinese domestic market is relatively underdeveloped and therefore unable to digest large and continuous IPO pressure; while diverting large IPOs to overseas markets eases the issuing pressure in the domestic market (Megginson, Nash, Netter, & Poulsen, 2004; Subrahmanyam & Titman, 1999). Second, the overseas listings are traded intentionally low at a heavy discount relative to the domestic market price (Fernald & Rogers, 2002). The offering price of Chinese IPOs is always set far below the market level by the Chinese government to stimulate the incentives of domestic investors for a successful subscription (Pagano, Röell, & Zechner, 2002). Third, the Chinese executives were often selected by the government based on political connections or other political considerations (Opper & Brehm, 2007). In other words, the Chinese overseas listings went through a process that was not necessarily based on the economic merits of the firms, but political connections of the managers (Jia et al., 2005).

Agency problems are more likely to occur when firms are controlled by a large stockholder (Shleifer & Vishny, 1986), since the principal is motivated to divert benefits from the public firms; Johnson, La Porta, Lopez-de-Silanes, and Shleifer (2000) employ the term "tunneling" to describe such asset appropriation behaviours. Tunneling takes the form of legally or illegally transferring assets and profits to the controlling shareholders by exploiting the minority shareholders. Since the majority of Chinese firms are controlled by the state or legal-person entities and their managers are often appointed by the government, cross-listed firms could be an attractive prey for asset appropriation by the controlling shareholder. For example, the Chinese executives are usually opportunistic and overlook the risky projects which lead to no profit or loss in investment (Barkema & Gomez-Mejia, 1998); powerful chief executive officers (CEOs) can exercise enormous sway over the board, rendering the boards ineffective in setting appropriate CEO contracts (Bebchuk & Fried, 2004). Particularly, executives tend to undertake activities to increase their own welfare by consuming more resources at the expense of shareholders (Shleifer & Vishny, 1997). Therefore, due to the managers' self-serving nature and weak governance institution in the Chinese context, it is expected that executives in cross-listed firms are paid higher.

Hypothesis 1—Agency hypothesis: Executive compensation is positively associated with Chinese cross-listings.

The existing literature supports that globalization improves corporate governance and thereby lowers the cost of capital. Karolyi (2006) argues that controlling shareholders and corporate insiders may wish to bond themselves to not take private benefits to ensure access to external capital markets. The bonding hypothesis links cross-listed firms' gains to an increase in shareholder protection (Coffee, 2002), since the well-established exchanges provide unique gains to foreign firms due to more stringent listing requirements and accounting standards which help to improve operating performance of the cross-listed firms (Doidge, Karolyi, & Stulz, 2004). Because of the poor disclosure or transparency standards in the Chinese domestic markets, firms often make the decision to list on the foreign markets bonded with more rigorous corporate governance procedures. These bonded firms are likely to have better visibility and coverage in the financial press which may lead them to expropriate less. In fact, the bonding hypothesis is widely accepted in empirical studies. For example, Errunza and Miller (2000) report that foreign firms listed in the US experience an 11.4% decline in their cost of capital; Sarkissian and Schill (2009) conclude that firms listed in markets that

require greater information disclosure, on average, achieve higher abnormal returns. Hence, it is assumed that the pay incentives do not necessarily guarantee to solve the agency problems, but a scrutiny corporate governance mechanism does.

Hypothesis 2—Bonding hypothesis: Corporate governance is an important factor in determining cross-listings.

The signalling hypothesis states that cross-listing signals market participants about the firm's quality and long-run profitability. Ritter (1991) and Loughran and Ritter (1995) present evidence that companies successfully time their offerings for periods when valuations are high, with investors receiving low returns in the long-run; Core, Holthausen, and Larcker (1999), among others, claim that besides firms' corporate governance features, firm's economic characteristics are also very important factors in determining cross-listings. Specifically, Jensen (1986) and Stulz (1999) document that the leverage changes have significant effects on the aftermarket performance of publicly listed firms. In addition, Pagano et al. (2002) show that firm size is one of the major factors that can explain a firm's decision to cross-list in both the US and European markets, since large firms typically have more desirable resources for asset appropriation. Yang and Lau (2006) also investigate the difference between domestic A-shares and foreign shares issued by the Chinese firms; they suggest that the overseas markets may offer a better growth opportunity for Chinese firms compared to the domestic markets. Therefore, when considering the Chinese firms' cross-listing decision, the firms' specific economic factors such as firm performance, firm size, Market-to-Book ratio, and firm leverage should be controlled in the empirical analysis. Accordingly, it is assumed that:

Hypothesis 3—Signalling hypothesis: Firm performance and other firm-specific characteristics are important in determining cross-listings.

Starting from 2005, the CSRC launched the split share structure reform aiming at eliminating all non-tradable shares and transferring non-tradable shares into tradable shares. This reform has resulted in significant changes in the IPO issuance and decline in state ownership. Particularly, the domestic markets for new B-shares issuances were frozen after 2005. Prior to the reform, the dominance of state ownership in the Chinese stock markets created a conflict of interests between state and private shareholders; as a result, controlling shareholders had limited incentives to work with private shareholders to ensure that managers maximized the stock market value of the firm. Since the existence of non-tradable shares in the Chinese stock market causes severe agency problems (Luo et al., 2012), by abolishing the trading restrictions for state shareholders, this reform has increased the incentive alignment between state and private shareholders, encouraging them to monitor managers. Therefore, it is further hypothesized that:

Hypothesis 4: Split share structure reform has significant effects on executive compensation among Chinese cross-listed firms.

3. Data

3.1. Description of Chinese domestic and foreign shares

The data are collected from the annual reports of public firms compiled by the China Centre for Economic Research, a database of Chinese financial market research. This study focuses on the Chinese A-share firms and concurrently issued B-shares or H-shares during 2001–2010. The A- and B-shares are listed on either SHSE or SZSE in mainland China. The A-shares are largely available only for local investors, while the B-shares and H-shares are primarily open to foreign investors. Besides that, a growing body of Chinese firms have issued N-shares or American Depositary Receipts (ADRs) in the US market since 2005.

A summary of statistics for various types of Chinese shares is reported in Table 1. As of year 2010, a total number of 2,063 firms were listed in mainland China (including both SHSE and SZSE) as A- and B-shares with a total amount of capital raised of Chinese *yuan* 887.07 billion (equivalent to US\$140.68

Table 1. Statistics of Chinese domestic and foreign shares

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Panel A: Number of firms listed										
Number of domestic listed firms (A- and B-shares in total)	1,160	1,224	1,287	1,377	1,381	1,434	1,550	1,625	1,718	2,063
Number of firms listed on SHSE (A- and B-shares)	646	715	780	837	834	842	860	864	870	894
Number of firms listed on SZSE (A- and B-shares)	514	509	507	540	547	592	690	761	848	1,169
Number of domestic firms listed as A-shares only	1,140	1,213	1,277	1,363	1,358	1,411	1,527	1,602	1,696	2,041
Number of domestic firms listed as B-shares only	112	111	111	110	109	109	109	109	108	108
Number of domestic firms listed as both A- and B-shares	92	100	101	96	86	86	86	86	86	86
Number of domestic firms listed as both A- and H-shares	23	28	30	31	32	38	52	57	61	65
Number of domestic firms listed as N-shares or ADRs	4	2	4	18	16	16	56	8	16	65
Panel B: Number of shares issued (in billion)										
Total number of shares issued	14.15	29.17	28.14	22.79	56.71	128.78	63.72	18.03	41.60	92.84
Total number of A-shares issued	9.30	13.42	8.36	5.49	1.38	35.11	41.33	11.49	26.04	56.13
Total number of H- and N-shares issued	4.85	15.75	19.68	17.15	55.33	93.67	22.40	6.54	15.56	36.70
Total number of B-shares issued	0	0	0.1	0.15	0	0	0	0	0	0
Panel C: Amount of capital raised (in billion US\$)										
Total amount of capital raised	\$19.86	\$14.59	\$18.67	\$20.65	\$29.85	\$88.08	\$137.66	\$61.09	\$97.13	\$189.57
Total amount of capital raised by A-shares	\$18.75	\$11.71	\$10.13	\$9.94	\$5.36	\$38.44	\$121.61	\$54.84	\$79.37	\$140.68
Total amount of capital raised by B-shares	\$0.00	\$0.00	\$0.06	\$0.43	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Total amount of capital raised by H- and N-shares	\$1.11	\$2.89	\$8.48	\$10.28	\$24.49	\$49.65	\$16.05	\$5.03	\$17.02	\$37.52

Notes: This table reports the summary of statistics of Chinese shares listed in both domestic and overseas markets. The count for Chinese N-shares and ADRs does not include those from Hong Kong, and excludes “reverse mergers” and best efforts IPOs. The local currencies are converted to the US dollar as of the exchange rate on 30 December 2010 (1US\$ = 6.30559CNY).

Data Sources: China Securities Regulatory Commission (<http://www.csrc.gov.cn>), National Bureau of Statistics of China (<http://www.stats.gov.cn/>), Hong Kong Exchanges and Clearing Limited (<http://www.hkex.com.hk>), and Ritter’s (1991) statistics at <http://bear.warrington.ufl.edu/ritter/IPOs2011Foreign1912.pdf>.

billion). The total number of shares issued is 92.84 billion, including 56.13 billion A-shares and 36.7 billion H- and N-shares; among those overseas issuances, the total amount of capital raised by H- and N-shares was US \$37.52 billion. According to the statistics, there are 142 firms listed on the main board in the HKEX. As of year 2010, the total market capitalization of H-shares was US\$527.97 billion. Since 2005, the total number of N-shares and Chinese ADRs has increased remarkably; it shows that more than 50% of the new ADRs or IPO issuances in the US market were from mainland China in 2010(Ritter, 1991). It is worth noting that B-shares have been no longer issued by the domestic firms since the reform was implemented in 2005.

3.2. Description of Chinese executive compensation

The Chinese public firms have been required by the CSRC to disclose top executive compensation in their annual reports since 1998. According to the “Regulation for the Content and Format of Public Firms’ Information Disclosure, No. 2: Content and Format of Annual Reports,” public firms have to release executive compensation of the total management team as well as the three highest paid executives. Specifically, the total-management-team (TMT) compensation is the total remuneration to the members of the board of directors, the supervisory board and senior management, while the three-highest-paid (THP) executive compensation is the total annual cash compensation for CEOs and two other highest-paid executives (often vice CEOs). Moreover, compensation refers to the total cash compensation including base salary, bonuses and commissions, not including the granting of

stock options to executives. In contrast to the pay practice in the US or European economies, equity incentive is rarely used in China. The fact is that most publicly listed firms are former SOEs and these companies mainly issue non-tradable shares to executives and employees, which cannot be sold in the public market.

Figures 1 and 2 show that Chinese executive compensation has increased remarkably since 2001. On average, the TMT compensation of A-shares increased from Chinese *yuan* 0.784 million (US\$ 0.12 million) in 2001 to Chinese *yuan* 3.79 million (US\$ 0.601 million) in 2010; seemingly, the THP executive compensation of A-shares increased from Chinese *yuan* 0.28 million (US\$ 0.044 million) in 2001 to Chinese *yuan* 1.394 million (US\$ 0.221 million) in 2010. For those A- and B-shares, the average TMT compensation increased from Chinese *yuan* 1.139 million (US\$ 0.181 million) in 2001 to Chinese *yuan* 4.619 million (US\$ 0.733 million) in 2010; meanwhile, the average THP executive compensation increased from Chinese *yuan* 0.489 million (US\$ 0.078 million) in 2001 to Chinese *yuan* 1.726 million (US\$ 0.274 million) in 2010. For those A- and H-shares, the average TMT compensation increased from Chinese *yuan* 2.913 million (US\$ 0.462 million) in 2001 to Chinese *yuan* 5.731 million (US\$ 0.909 million) in 2010; meanwhile, the average THP executive compensation increased from Chinese *yuan* 1.48 million (US\$ 0.235 million) in 2001 to Chinese *yuan* 1.93 million (US\$ 0.306 million) in 2010. In general, cross-listed firms have higher level of executive compensation and the relative difference

Figure 1. THP executive compensation.

Notes: The figure depicts the average THP executive compensation of different types of Chinese shares during 2001–2010 (in million Chinese *yuan*).

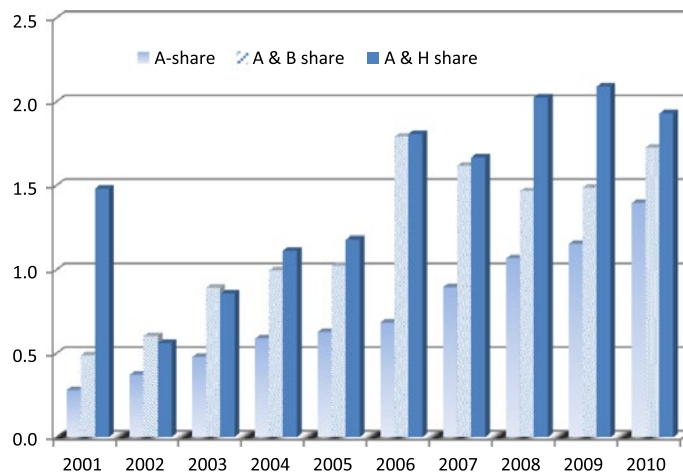
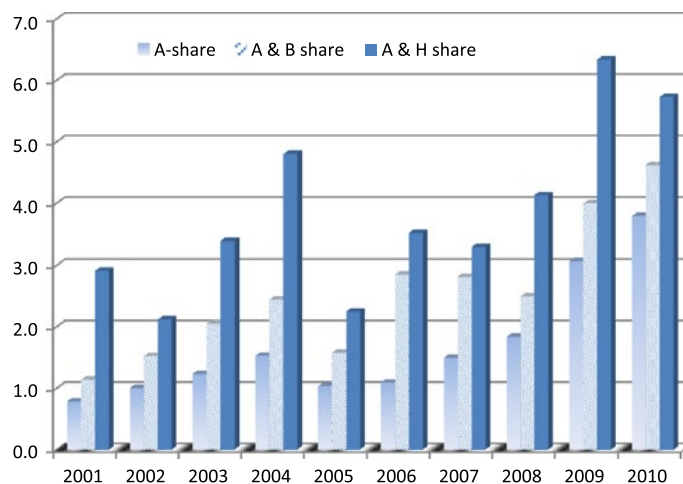


Figure 2. TMT compensation.

Notes: The figure depicts the average TMT compensation of different types of Chinese shares during 2001–2010 (in million Chinese *yuan*).



between the THP executive compensation and TMT compensation widens over time, particularly, after the reform.

4. Methodologies

To investigate the cross-listing decision of Chinese A-share firms to concurrently issue B-shares, I create a binary dummy variable D_BSHARE with a value of “1” if a domestic firm has B-shares and “0” otherwise. I also construct another binary dummy variable D_HSHARE with a value of “1” if a domestic firm concurrently issues H-shares and “0” otherwise. The binary logistic regression has the particular advantage to predict whether a cross-listing decision may occur based on observed characteristics of the firm. To explore the cross-listing decision of Chinese firms, I use Y_i as the binary dependent variable of either D_BSHARE or D_HSHARE. Specifically, Y_i can be expressed in Equation 1 as follows:

$$Y_i = \begin{cases} 0, & \text{when } \delta_i \leq 0 \\ 1, & \text{when } \delta_i > 0 \end{cases} \quad (1)$$

where $\delta_i = \alpha + \beta X_i - \varepsilon_i$, and X_i are observable independent variables. Now assuming that π_i is the probability of making cross-listing decisions. If the error terms are independently distributed and follow normal distribution $\Phi(\cdot)$, or $\varepsilon_i \sim N(0, 1)$, then the cumulative distribution function (CDF) of π_i of the Probit model can be constructed in Equation 2 as follows:

$$\pi_i = Pr(\delta_i < \alpha + \beta X_i) = \Phi(\alpha + \beta X_i) \quad (2)$$

Alternatively, if the error terms ε_i follow logarithmic distribution $\Lambda(\cdot)$, then the CDF of π_i of the Logit model can be constructed in Equation 3 as follows:

$$\pi_i = Pr(\delta_i < \alpha + \beta X_i) = \Lambda(\alpha + \beta X_i) \quad (3)$$

If π_i the probability of making cross-listing decisions is given by Equations 2 or 3, then the odds ratio in favour of cross-listings will be $\pi_i/(1 - \pi_i)$. Accordingly, it can generalize the Logit and Probit models to several explanatory variables in Equation 4 as follows:

$$\ln\left(\frac{\pi_i}{1 - \pi_i}\right) = \alpha + \beta_1 X_{i1} + \beta_2 X_{i2} + \dots + \beta_k X_{ik} = X_i' \beta \quad (4)$$

The independent variables include executive compensation, corporate governance and firm-specific characteristics. Therefore, the hypotheses can be transformed into a testable representation in Equation 5 as follows:

$$\ln\left(\frac{\pi_i}{1 - \pi_i}\right) = \alpha + \gamma_1 \text{Compensation}_i + \gamma_2 \Sigma \text{Governance}_i + \gamma_3 \Sigma \text{Firm_Char}_i + \varepsilon_i \quad (5)$$

In Equation 5, the main hypothesis is $\gamma_1 \neq 0$. Particularly, executive compensation is measured as ln THP, the natural logarithm of the THP executive compensation adjusted for annual inflation. The annual inflation rate is calculated by using national aggregate Consumer Price Index with 2001 as base year.

Following previous literature such as Core et al. (1999), among others, I use board meeting frequency, board size, board independence, largest shareholder ownership, state ownership dummy, CEO duality dummy and compensation committee to proxy firms' corporate governance. Specifically, ln MEET is the natural logarithm value of the number of meetings per year among board members. ln BOARD is the natural logarithm value of the number of persons on the board. IDR is the percentage of independent directors on the board. SHARE1 is the proportion of shares held by the largest shareholder.

STATE is a dummy variable which takes the value of 1 if it is controlled by the state, and 0 otherwise. DUAL is a dummy variable which takes the value of 1 if the CEO serves simultaneously as the director of the board and 0 otherwise, and COMP is a dummy variable which takes the value of 1 if the firm has a compensation committee and 0 otherwise.

To control for firm-specific factors, I use firms' return on assets (ROA), firm size, firm leverage and Market-to-Book ratio. ROA is return on assets defined as the ratio of annual earnings before interest and taxes to total assets for the prior year. \ln SIZE is the natural logarithm value of the total value of market capitalization. LEV is leverage, or the ratio of total debt to total equity in book value. M/B is the Market-to-Book ratio calculated by dividing the year-end closing price of the stock by the latest quarter's book value per share. In addition, I use SIC and YEAR as dummy variables to control for industry and year effects respectively. Specifically, the regression models can be expressed as follows:

$$\begin{aligned} \ln(\pi_i/(1-\pi_i)) = & \beta_0 + \beta_1 \ln \text{THP}_{i,t} + \beta_2 \text{ROA}_{i,t} + \beta_3 \ln \text{SIZE}_{i,t} + \beta_4 \text{LEV}_{i,t} + \beta_5 M/B_{i,t} \\ & + \beta_6 \ln \text{MEET}_{i,t} + \beta_7 \ln \text{BSIZE}_{i,t} + \beta_8 \text{IDR}_{i,t} + \beta_9 \text{SHARE1}_{i,t} + \beta_{10} \text{STATE}_{i,t} \\ & + \beta_{11} \text{DUAL}_{i,t} + \beta_{12} \text{COMP}_{i,t} + \sum \beta_j \text{SIC}_j + \sum \beta_k \text{YEAR}_k + u_{i,t} \end{aligned} \quad (6)$$

Since \ln THP measures the total annual cash compensation for CEOs and two other highest-paid executives (often vice CEOs), it is important to examine the role of the total cash remuneration to the members of the board of directors, the supervisory board, and senior management. Therefore, I also use the total management-team-compensation (\ln TMT) to proxy executive compensation. \ln TMT is defined as the natural logarithm value of the total management team compensation adjusted for annual inflation. Accordingly, we have Equation 7 as follows:

$$\begin{aligned} \ln(\pi_i/(1-\pi_i)) = & \beta_0 + \beta_1 \ln \text{TMT}_{i,t} + \beta_2 \text{ROA}_{i,t} + \beta_3 \ln \text{SIZE}_{i,t} + \beta_4 \text{LEV}_{i,t} \\ & + \beta_5 M/B_{i,t} + \beta_6 \ln \text{MEET}_{i,t} + \beta_7 \ln \text{BSIZE}_{i,t} + \beta_8 \text{IDR}_{i,t} + \beta_9 \text{SHARE1}_{i,t} + \beta_{10} \text{STATE}_{i,t} \\ & + \beta_{11} \text{DUAL}_{i,t} + \beta_{12} \text{COMP}_{i,t} + \sum \beta_j \text{SIC}_j + \sum \beta_k \text{YEAR}_k + u_{i,t} \end{aligned} \quad (7)$$

Since the reform has resulted in significant changes in corporate governance and IPO issuances, I further apply the following Ordinary Least Square (OLS) regression to examine the effects of the reform on Chinese executive compensation for different types of cross-listings. Specifically, I use SPLIT as a dummy variable to proxy this event in Equation 8. I first use \ln THP and then use \ln TMT as dependent variables. I also use both D_BShare and D_HShare as independent variables to obtain separate estimates as shown in Table 6 from Model (9) to Model (12). The specific models are expressed as follows:

$$\begin{aligned} \ln \text{THP}_{i,t} / \ln \text{TMT}_{i,t} = & \beta_0 + \beta_1 \text{SPLIT}_{i,t} + \beta_2 \text{D_BShare}_{i,t} / \text{D_HShare}_{i,t} + \beta_3 \text{ROA}_{i,t} + \beta_4 \ln \text{SIZE}_{i,t} \\ & + \beta_5 \text{LEV}_{i,t} + \beta_6 M/B_{i,t} + \beta_7 \ln \text{MEET}_{i,t} + \beta_8 \ln \text{BSIZE}_{i,t} + \beta_9 \text{IDR}_{i,t} + \beta_{10} \text{SHARE1}_{i,t} \\ & + \beta_{11} \text{STATE}_{i,t} + \beta_{12} \text{DUAL}_{i,t} + \beta_{13} \text{COMP}_{i,t} + \sum \beta_j \text{SIC}_j + \sum \beta_k \text{YEAR}_k + u_{i,t} \end{aligned} \quad (8)$$

5. Empirical results

5.1. Univariate data analyses

Table 2 reports the descriptive statistics of selected variables. Panel A shows that, for those Chinese A-shares that concurrently issued B-shares, the average \ln THP is 9.71 over the sample period 2001–2010, ranging from a high of 11.66 to a low of 6.73; the average \ln TMT is 8.99, ranging from a high of 10.67 to a low of 6.01. The average ROA is very low (0.03) with a minimum value of –0.23 and a maximum value of 0.19, while the average ERET is negative (–0.55) with a minimum value of –2.64 and a maximum value of 0.55. The standard deviation of firm performance indicates a potential violation of the normality assumption. Particularly, the standard deviations of firm size, firm leverage and M/B are all high above average, implying potential variations of economic characteristics across the firms. On average, the largest shareholder holds around 38% of the total shares; the highest

Table 2. Descriptive statistics

	Panel A: Cross-listed as B-shares					Panel B: Cross-listed as H-shares				
	Mean	Median	SD	Min	Max	Mean	Median	SD	Min	Max
ln THP	9.71	9.72	0.89	6.73	11.66	10.21	10.22	0.84	7.68	11.66
ln TMT	8.99	9.05	0.84	6.01	10.67	9.29	9.32	0.80	6.37	10.67
ROA	0.03	0.03	0.07	-0.23	0.19	0.05	0.04	0.07	-0.23	0.19
ERET	-0.55	-0.38	0.68	-2.64	0.55	-0.66	-0.47	0.76	-2.64	0.55
ln SIZE	22.15	22.11	0.92	20.13	25.97	23.54	23.53	1.61	16.83	28.44
LEV	1.31	1.00	1.20	0.07	6.77	1.38	0.89	1.44	0.07	6.77
M/B	4.57	3.48	3.42	0.80	16.93	4.06	2.90	3.10	0.80	16.93
ln MEET	2.01	2.08	0.41	0.69	3.26	2.07	2.08	0.48	0.69	4.03
ln BOARD	1.84	1.79	0.30	0.69	2.83	1.87	1.95	0.36	0.00	2.64
IDR	0.51	0.50	0.20	0.00	1.25	0.59	0.56	0.24	0.00	1.25
SHARE1	0.38	0.36	0.17	0.10	0.77	0.47	0.48	0.14	0.10	0.77
STATE	0.20	0.00	0.40	0.00	1.00	0.20	0.00	0.40	0.00	1.00
DUAL	0.87	1.00	0.34	0.00	1.00	0.86	1.00	0.35	0.00	1.00
COMP	0.65	1.00	0.48	0.00	1.00	0.86	1.00	0.35	0.00	1.00

Notes: This table reports the descriptive statistics of selected variables of Chinese A-share firms that concurrently issued B- and H-shares during 2001–2010.

ln THP is the natural logarithm of the three-highest-paid executive compensation. ln TMT is the natural logarithm of the total-management-team compensation. ROA is return on assets. ERET is excess stock return. ln SIZE is the natural logarithm of firms' market capitalization. LEV is total debt to equity ratio. M/B is Market-to-Book ratio. ln MEET is the natural logarithm of the number of board meetings per year. ln BOARD is the natural logarithm of the number of board members. IDR is the percentage of independent directors on the board. SHARE1 is ownership of the largest shareholder. STATE is a state control dummy. DUAL is a CEO duality dummy. COMP is a compensation committee.

ownership is 77.0%, and the lowest ownership is about 10%. In contrast, Panel B shows that, for those A-share firms that concurrently issued H-shares, the average ln THP is 10.21 over the sample period 2001–2010, ranging from a high of 11.66 to a low of 7.68; the average ln TMT is 9.29, ranging from a high of 10.67 to a low of 6.37. The average ROA is about 5% with a minimum value of -0.23 and a maximum value of 0.19, while the average ERET is negative (-0.66) with a minimum value of -2.64 and a maximum value of 0.55. On average, the largest shareholder holds around 47% of the total shares, ranging from a high of 77.0% to a low of 10%. It implies that state ownership is prevailing and highly concentrated in the Chinese cross-listed firms. In addition, the results show that the majority of public firms have compensation committees or CEO dualities. Typically, the A-share firms that concurrently issued H-shares have higher executive compensations and better firm performance relative to those A- and B-share firms.

Table 3 reports the Pearson correlation matrix of selected variables. It shows that the two compensation measures—ln THP and ln TMT are highly correlated (0.86); the correlation between board size and board independence (-0.61) is significantly negative. Firm performance ROA has a positive correlation with executive compensation ln THP (0.28), suggesting that there is a positive pay-for-performance responsiveness. It also shows that firms' ownership structure (i.e. state control and the largest shareholder's ownership) is negatively associated with executive compensation, suggesting that the role of government is very important in determining Chinese executive compensation. In addition, the presence of a compensation committee on the board (as indicated by coefficients of 0.30 and 0.37) and firm size (as indicated by coefficients of 0.46 and 0.44) are important factors in determining executive compensation. In sum, the correlation matrix suggests that linear logistic regression will be appropriate in model specification.²

Table 3. Correlation matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1) ln THP	1.00													
(2) ln TMT	0.86*	1.00												
(3) ROA	0.28*	0.28*	1.00											
(4) ERET	0.08*	-0.10*	0.11*	1.00										
(5) ln SIZE	0.46*	0.44*	0.40*	-0.05*	1.00									
(6) LEV	0.05*	0.07*	-0.34*	-0.08*	-0.03*	1.00								
(7) M/B	0.07*	0.09*	0.16*	-0.02*	0.31*	0.14*	1.00							
(8) ln MEET	0.14*	0.19*	-0.01	-0.16*	0.14*	0.13*	0.09*	1.00						
(9) ln BOARD	-0.02	-0.10*	0.01	0.11*	0.07*	-0.02	-0.06*	-0.11*	1.00					
(10) IDR	0.23*	0.33*	0.05*	-0.19*	0.09*	0.09*	0.01	0.19*	-0.61*	1.00				
(11) SHARE1	-0.07*	-0.11*	0.14*	0.12*	0.19*	-0.06*	-0.07*	-0.09*	0.06*	-0.10*	1.00			
(12) STATE	-0.01	0.03*	-0.01	-0.03*	-0.13*	0.02*	0.13*	0.11*	-0.20*	0.14*	-0.25*	1.00		
(13) DUAL	0.03*	0.01	0.01	-0.01	0.05*	0.03*	-0.03*	0.05*	0.05*	0.01	0.05*	-0.11*	1.00	
(14) COMP	0.30*	0.37*	0.08*	-0.20*	0.20*	0.08*	0.11*	0.22*	-0.17*	0.39*	-0.12*	0.05*	0.03*	1.00

Notes: This table reports the correlation matrix of selected variables of Chinese public firms that concurrently issued B-share and H-shares during 2001–2010.

ln THP is the natural logarithm of the three-highest-paid executive compensation. ln TMT is the natural logarithm of the total-management-team compensation. ROA is return on assets. ERET is excess stock return. ln SIZE is the natural logarithm of firms' market capitalization. LEV is total debt to equity ratio. M/B is Market-to-Book ratio. ln MEET is the natural logarithm of the number of board meetings per year. ln BOARD is the natural logarithm of the number of board members. IDR is the percentage of independent directors on the board. SHARE1 is ownership of the largest shareholder. STATE is a state control dummy. DUAL is a CEO duality dummy. COMP is a compensation committee.

*Significance at the 5% level.

5.2. The determinants of cross-listings for A & B-shares

Table 4 reports the determinants of Chinese A-shares to cross-list as B-shares. The results of Probit regressions show that executive compensation has positive effects on the decision to cross-list as A- and B-shares. Specifically, the odds of cross-listing as B-shares increase by 1.296 (equivalent to the exponential of 0.259) when the logarithmic THP executive compensation increases by one unit. Seemingly, the results of Logit regressions illustrate that the coefficient (0.345) of ln THP is positive and significant, which implies that a one-unit increase in ln THP is associated with an increase in the predicted odds of cross-listed as A- and B-shares by 1.412 (equivalent to the exponential of 0.345). Therefore, the results support agency theory or hypothesis 1. The implication is that under weak corporate governance institution in the Chinese context, cross-listed firms could be an attractive prey for asset appropriation at the manager's discretion.

Table 4 shows that corporate governance factors are important in determining cross-listings. The results show that board size, state ownership, government control, and compensation committee are all significant and have negative effects on the odds to cross-list as B-shares. However, no significant results are found for board meeting frequency; and the evidences to support board independence and CEO duality are also very weak. The reasons rely on the fact that most managers were selected by the government based on political connections or other political considerations (Oppen & Brehm, 2007). In addition, although the boards of directors are elected during shareholders' general meetings, in practice, boards of directors generally lack independence and tend to rubber-stamp the decisions by management and the controlling shareholders. In 2001, the CSRC issued guidelines for introducing independent directors; and 90% of listed companies had introduced at least two independent directors. However, in practice, supervisory boards have little real authority to monitor firm behaviour. In other words, the monitoring function of the Chinese boards is very weak (Luo & Jackson, 2012). In sum, the results support bonding hypothesis or hypothesis 2.

Table 4. The determinants of cross-listing for A- and B-shares

	Probit regression		Logit regression	
	Model (1)	Model (2)	Model (3)	Model (4)
ln THP	0.259*** (8.93)		0.345*** (10.95)	
ln TMT		0.368*** (12.13)		0.683*** (10.70)
ROA	-2.792*** (-7.15)	-2.706*** (-7.13)	-2.954*** (-7.55)	-5.616*** (-7.54)
ln SIZE	0.272*** (9.77)	0.172*** (7.28)	0.252*** (9.07)	0.467*** (8.63)
LEV	-0.027 (-1.33)	-0.03 (-1.59)	-0.026 (-1.31)	-0.055 (-1.40)
M/B	0.056*** (7.29)	0.034*** (5.02)	0.054*** (7.04)	0.096*** (6.48)
ln MEET	-0.047 (-0.83)	-0.042 (-0.79)	-0.054 (-0.96)	-0.140 (-1.26)
ln BOARD	-0.280*** (-3.09)	-0.207** (-2.43)	-0.257*** (-2.83)	-0.472*** (-2.62)
IDR	-0.393** (-2.45)	-0.19 (-1.40)	-0.404** (-2.50)	-0.735** (-2.30)
SHARE1	-1.194*** (-8.51)	-0.921*** (-6.89)	-1.127*** (-8.01)	-2.386*** (-8.40)
STATE	-0.392*** (-6.72)	-0.372*** (-6.56)	-0.402*** (-6.85)	-0.826*** (-6.73)
DUAL	0.096 (1.44)	0.109* (1.69)	0.110* (1.65)	0.234* (1.72)
COMP	-0.202*** (-3.61)	-0.222*** (-4.09)	-0.209*** (-3.72)	-0.365*** (-3.26)
N	10,183	10,183	10,183	10,183
LR χ^2	575.40	619.43	569.34	614.71
Pseudo R ²	0.114	0.123	0.113	0.122

Notes: This table reports the determinants of cross-listing of A- and B-shares.

ln THP is the natural logarithm of the three-highest-paid executive compensation. ln TMT is the natural logarithm of the total-management-team compensation. ROA is return on assets. ln SIZE is the natural logarithm of firms' market capitalization. LEV is total debt to equity ratio. M/B is Market-to-Book ratio. ln MEET is the natural logarithm of the number of board meetings per year. ln BOARD is the natural logarithm of the number of board members. IDR is the percentage of independent directors on the board. SHARE1 is ownership of the largest shareholder. STATE is a state control dummy. DUAL is a CEO duality dummy. COMP is a compensation committee.

The industry and year effects are included. *t*-statistics in parentheses.

*Significance at the 10% level.

**Significance at the 5% level.

***Significance at the 1% level.

Table 4 generally supports signalling hypothesis or hypothesis 3. It shows that the coefficients of ROA are negative and the odds to cross-list as B-shares decrease when firms perform better. The results confirm that firm size and firm's growing opportunity have positive effects on the odds to cross-list as B-shares. Initially, the Chinese government wished to use foreign listings as a means of improving the quality of SOEs and of making them role models for locally listed SOEs, eventually, Chinese SOEs that listed overseas went through a process that was not necessarily based on the

economic merits of the firms, but political connections (Jia et al., 2005). When firms are controlled by a large stockholder, expropriation is more likely to occur because the principal is motivated to divert benefits from the publicly listed companies, resulting in long-run performance deterioration (Shleifer & Vishny, 1986). For example, executives are usually opportunistic and overlook the risky projects which lead to no profit or loss in investment (Barkema & Gomez-Meija, 1998). The results reveal that the domestic capital market is unable to digest large and continuous IPO pressure; therefore, diverting large IPOs to overseas markets eases the issuing pressure in the domestic market (Megginson et al., 2004; Subrahmanyam & Titman, 1999). It suggests that the possible reasons for Chinese firms to cross-list as B-shares were based on political considerations rather than on economic merits; in other words, cross-listings simply served as a vehicle to signal the quality of SOEs based on political considerations (Jia et al., 2005).

5.3. The determinants of cross-listings for A- and H-shares

Table 5 reports the determinants of Chinese A-shares to cross-list as H-shares. The results of Probit regression show that both \ln THP and \ln TMT have significantly positive effects on the decisions to cross-list as A- and H-shares. Specifically, the odds of cross-listing as H-shares increase by 1.474 (equivalent to the exponential of 0.388) when the logarithmic THP executive compensation increases by one unit. Seemingly, the results of Logit regressions show that the coefficient 0.761 of \ln THP is positive, implying that a one-unit increase in \ln THP is associated with an increase in the predicted odds to cross-list as H-shares by 2.14 (equivalent to the exponential of 0.761). The results confirm that cross-listed firms have higher levels of executive compensation. The results are in support of agency theory or hypothesis 1.

Table 5 also confirms that corporate governance factors are important in determining overseas listings. The results illustrate that board size, board meeting frequency, board independence and the presence of compensation committee have significant and positive effects on the odds to cross-list as H-shares. On the contrary, firm performance is found to have significant and negative effects on the odds to cross-list as H-shares. The empirical results are in support of signalling hypothesis and bonding hypothesis.

Table 5 illustrates that CEO duality has no significant impacts on cross-listing decisions. Jensen (1993) claims that when the CEO also performs as the chairman of the board, the lack of board independence makes it “extremely difficult for the board to respond early to failure in its top management team,” and the decision is more favourable towards the managers’ interests. In China, a majority of firms have a CEO who is also the chair or members on the board. When the CEO is also the board chair, the agency costs are higher (Brickley, Coles, & Jarrell, 1997). Although the primary goal for Chinese firms to list overseas is raising capital, another possible reason might be based on political considerations rather than on economic merits (Jia et al., 2005). Moreover, powerful CEOs can exercise enormous sway over the board, rendering the boards ineffective in setting appropriate CEO contracts (Bebchuk & Fried, 2004), particularly, when the corporate governance institution is weak.

5.4. Executive compensation, cross-listing and corporate governance reform

Table 6 uses SPLIT as a dummy variable to proxy the reform, where SPLIT equals one for years before the reform, and zero otherwise. I use both measures of executive compensation as dependent variables. By applying pooled cross-sectional OLS regression, I find that the reform does not significantly affect the THP executive compensation, but significantly affect the TMT compensation (0.627 and 0.623 at the 1% level). On the contrary, state control dummy (STATE) is significant and negatively correlated to the THP executive compensation (-0.053 and -0.063 at the 1% level). The results suggest that the reform has limited effects on Chinese executive compensation, while government control and state ownership have significant effects on Chinese executive compensation, particularly on the THP executive compensation.

Table 6 shows that cross-listed firms generally have higher executive compensation than single-listed firms. However, the reason why the Hong Kong stock market is relatively different from the

Table 5. The determinants of cross-listing for A- and H-shares

	Probit regression		Logit regression	
	Model (5)	Model (6)	Model (7)	Model (8)
ln THP	0.388*** (8.15)		0.761*** (7.84)	
ln TMT		0.264*** (5.60)		0.553*** (5.28)
ROA	-4.223*** (-6.64)	-3.194*** (-5.31)	-8.359*** (-6.17)	-7.721*** (-5.83)
ln SIZE	0.582*** (15.80)	0.585*** (18.03)	1.300*** (16.30)	1.356*** (17.05)
LEV	0.026 (0.84)	0.026 (0.89)	0.052 (0.80)	0.074 (1.16)
M/B	-0.050*** (-3.20)	-0.076*** (-5.70)	-0.118*** (-3.49)	-0.133*** (-3.97)
ln MEET	0.263*** (3.02)	0.219*** (2.75)	0.570*** (3.19)	0.632*** (3.56)
ln BOARD	0.499*** (3.79)	0.514*** (4.12)	0.869*** (3.08)	1.070*** (3.80)
IDR	1.010*** (4.71)	0.935*** (4.80)	1.916*** (4.13)	2.190*** (4.72)
SHARE1	-0.012 (-0.05)	-0.032 (0.15)	-0.467 (-0.99)	-0.866 (-1.85)
STATE	-0.534*** (-4.19)	-0.472*** (-3.95)	-1.085*** (-3.72)	-1.080*** (-3.73)
DUAL	-0.050 (-0.44)	-0.040 (-0.38)	-0.003 (-0.01)	-0.019 (-0.08)
COMP	0.320*** (3.19)	0.286*** (3.13)	0.635*** (2.98)	0.640*** (3.03)
N	9,172	9,172	9,172	9,172
LR χ^2	992.21	914.32	1,019.60	980.44
Pseudo R ²	0.369	0.328	0.379	0.365

Notes: This table reports the determinants of cross-listing of A- and H-shares.

ln THP is the natural logarithm of the three-highest-paid executive compensation. ln TMT is the natural logarithm of the total-management-team compensation. ROA is return on assets. ln SIZE is the natural logarithm of firms' market capitalization. LEV is total debt to equity ratio. M/B is Market-to-Book ratio. ln MEET is the natural logarithm of the number of board meetings per year. ln BOARD is the natural logarithm of the number of board members. IDR is the percentage of independent directors on the board. SHARE1 is ownership of the largest shareholder. STATE is a state control dummy. DUAL is a CEO duality dummy. COMP is a compensation committee. The industry and year effects are included. *t*-statistics in parentheses.

*Significance at the 10% level.

**Significance at the 5% level.

***Significance at the 1% level.

mainland B-share market is not quite clear. One reason might be the fact that the Chinese stock market is still in the early stage and lacks of market efficiency. For example, H-share firms were serving as a vehicle of signalling the quality of SOEs, at least in the early stage, were based on political considerations rather than on economic merits (Jia et al., 2005). Another possible reason might be that the Chinese domestic market is dominated by retail investors rather than institutional holders, and thereby the Chinese domestic market is highly speculative and full of unexpected risks. It is also

Table 6. Cross-listing, executive compensation and split share structure reform

	ln THP		ln TMT	
	Model (9)	Model (10)	Model (11)	Model (12)
SPLIT	-0.006 (-0.13)	0.003 (0.06)	0.627*** (14.89)	0.623*** (14.68)
D_BShare	0.266*** (9.01)		0.316*** (11.43)	
D_Hshare		0.258*** (5.65)		0.113*** (2.62)
ROA	2.989*** (20.82)	2.997*** (20.77)	2.843*** (21.15)	2.799*** (20.65)
ln SIZE	0.345*** (36.56)	0.340*** (34.81)	0.314*** (35.59)	0.321*** (34.96)
LEV	0.075*** (10.39)	0.074*** (10.16)	0.058*** (8.46)	0.057*** (8.28)
M/B	-0.043*** (-14.35)	-0.040*** (-13.47)	-0.024*** (-8.65)	-0.022*** (-7.78)
ln MEET	0.094*** (4.76)	0.090*** (4.51)	0.093*** (5.02)	0.090*** (4.84)
ln BOARD	0.313*** (9.88)	0.300*** (9.45)	0.159*** (5.38)	0.149*** (5.02)
IDR	0.384*** (6.97)	0.357*** (6.45)	0.267*** (5.17)	0.248*** (4.77)
SHARE1	-0.766*** (-15.65)	-0.808*** (-16.57)	-0.616*** (-13.43)	-0.669*** (-14.60)
STATE	-0.053*** (-2.92)	-0.063*** (-3.48)	-0.016 (-0.92)	-0.028* (-1.67)
DUAL	-0.001 (-0.06)	0.001 (0.07)	-0.051** (-2.48)	-0.048** (-2.32)
COMP	0.160*** (8.27)	0.151*** (7.80)	0.142*** (7.82)	0.134*** (7.37)
N	10,623	10,623	10,623	10,623
F	246.66	244.04	265.29	258.52
Adj. R ²	0.430	0.430	0.451	0.444

Notes: This table reports the determinants of executive compensation of Chinese public firms that concurrently issued B-share or H-shares during 2001–2010.

The dependent variables are ln THP and ln TMT. ln THP is the natural logarithm of the three-highest-paid executive compensation.

ln TMT is the natural logarithm of the total-management-team compensation. SPLIT is a dummy variable of split share structure reform. The industry and year effects are included. *t*-statistics in parentheses.

*Significance at the 10% level.

**Significance at the 5% level.

***Significance at the 1% level.

true that the Hong Kong stock market is a market “external” to China, in contrast to other international financial markets, the independence of the Hong Kong stock market is relatively weak. In sum, the reasons why many Chinese companies seek to list as H-shares rather than as B-shares are still open for discussion, although they are more likely due to political arrangements rather than corporate decisions.

Literature suggests that firm performance should be measured by using both internal accounting performance and external market performance (Cheung, Jing, Lu, Rau, & Stouraitis, 2009; Core et al., 1999). For robustness checking, I also use firm's stock market excess return ERET as an indicator of firm performance. The excess stock return ERET is defined as the yearly stock market return relative to the market return on a value-weighted Shanghai Composite Stock Index. Unfortunately, a significant relationship between ERET and the cross-listing decision is not supported by the empirical findings. The results of ERET measures are available upon request.

6. Conclusions

This study examines the relationship between cross-listing and managerial compensation of Chinese public firms that concurrently issued A- and B-shares or A- and H-shares during 2001–2010. Using both Probit and Logit regressions, this study shows that Chinese executive compensation has significantly positive effects on cross-listings. The results are in support of agency theory, implying that cross-listings could be employed as a way of asset appropriation at manager's discretion.

The results confirm that corporate governance is an important factor in determining cross-listings. The results show that board meeting, board size, board independence and the presence of compensation committee have positive effects on cross-listings. Typically, the cross-listed SOEs have more professional boards of directors, use greater accounting conservatism and exhibit higher investment efficiency (Jia et al., 2005). However, the reasons why many Chinese companies seek to list as H-shares rather than as B-shares are still open for discussion, although they are more likely due to political arrangements rather than corporate decisions.

The results illustrate that firm performance measured by ROA has significantly negative effects on cross-listings; the occurrence of cross-listings is not only associated with expansion in firms' leverage, but also firms' liquidity and growing opportunities. The results are robust when using stock market performance measure. The results generally support signalling hypothesis and suggest that cross-listings decisions were mainly based on political considerations rather than on economic merits (Jia et al., 2005). The results have broad implications for portfolio diversification.

The results suggest that the split share structure reform has limited effects on executive compensation, while government control and state ownership have more pronounced effects on THP executive compensation. In general, the motives of Chinese firms to list abroad differ by the types of issues and by the market location (Zhang & King, 2010), which is different from Sarkissian and Schill's (2004) findings in the US and European markets.³ Although we find executive compensation is a key determinant of cross-listing, the argument is that could it be a reverse causal relationship, or do the firms with high executive compensation engage in more cross listings? Could it be possible that the adjustments are not instantaneous but happens over a period of time? Those issues are of particular interest and should be addressed in the future research.

Acknowledgements

I would like to express my thankfulness to Dr Dave O. Jackson, Dr Haiyan Zhou, Dr Thanh N. Ngo, Dr Salvador Contreras and the two anonymous referees for their insightful comments and constructive suggestions on this manuscript. The early version of the manuscript is accepted for presentation at Southwestern Finance Association (SWFA) conference 2013 at Albuquerque, NM, USA. I would like to thank the participants in the conference for their helpful comments. I also would like to thank Dr Otto B. Schacht, Wayland Baptist University and other colleagues for their support

Funding

The author received no direct funding for this research.

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Citation information

Cite this article as: Cross-listing, managerial compensation and corporate governance, Y. Luo, *Cogent Economics & Finance* (2014), 2: 967361.

Notes

1. There are two official exchanges in the Chinese mainland stock market: the SHSE was opened in 1990, the SZSE was established in 1991. All the A- and B-shares

- are listed on the mainland stock exchanges and subject to the regulations enforced by the China Securities Regulatory Commission (CSRC). H-shares are listed on the HKEX and they are enforced to meet more stringent listing requirements and regulations by the HKEX.
- Other diagnostic checks are also performed to ensure the basic assumptions of model specification are met. Specifically, we conduct data histogram and P-P plot to check for distribution of normality, employ Mahalanobis distance to detect outliers, and compare Variance Inflation Factor values with their corresponding critical values to examine multicollinearity problems.
 - Sarkissian and Schill (2004) find that cross-listings are attractive due to the market size and liquidity rather than regional preference or cultural similarity in the US and European markets.
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