

Does bonding really bond? Liability of foreignness and cross-listing of Chinese firms on international stock exchanges

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ABSTRACT

This study examines the relationship between cross-listing and firm valuation in the context of Chinese firms cross-listed on major international exchanges, such as the NASDAQ, New York Stock Exchange (NYSE), Hong Kong Main Board, Hong Kong Growth Enterprise Market (GEM), Singapore Stock Exchange, and London Alternative Investment Market (LAIM). Through the lenses of bonding theory and liability of foreignness-based multinational enterprise theories, two sets of alternative hypotheses are developed and tested using panel data over a period of twelve years during 2001–2012. Contrary to the bonding theory, the results reveal that the firms listed in Mainland China recorded better valuation than the firms cross-listed on the international stock exchanges. The more sophisticated corporate governance mechanisms applied in international stock exchanges do not always entail better firm valuation. Institutional distance, cultural distance and the distance in economic freedom between China and the cross-listing location countries interact with governance variables negatively affecting performance of cross-listed firms. The direct negative impact of the three distance variables on the firm valuation are also statistically significant. The outcome of Chinese firms' cross-listing behaviours appear to contradict the general bonding theory.

Keywords: Corporate governance, Chinese cross-listing, bonding hypothesis, liability of foreignness, institutional distance, economic freedom, cultural distance.

Classification: G1, G3, Z1

1. Introduction

The bonding hypothesis postulates that firms can encourage higher levels of protection for minority shareholder rights by cross-listing on a stock exchange that has a stronger, enforceable legal system (such as a U.S. stock exchange), and substitute these mechanisms for weak home country governance practices especially in emerging capital markets (Coffee, 1999, 2002; La Porta et al., 1997, 1998). Such cross-listed firms, it is envisaged would command higher firm value (Stulz, 1999). However, the hypothesis of the liability of foreignness asserts that cross-listing, instead of adding value may actually diminish it due to differences in institutions and cultures leading to additional costs (Bell et al., 2012; Licht, 2004). The cross-listed firms may also find themselves ill-equipped to conform to the stringent rules and sophisticated governance mechanisms in overseas stock exchanges. Chinese firms, especially for large state-owned enterprises (SOEs) are often beset with significant weakness in corporate governance mechanisms (Sun et al., 2006). These firms are relatively new players in both the international capital and product markets, and they still suffer from a lack of the international experience and managerial capabilities to integrate domestic and foreign operations and compete successfully in the unfamiliar foreign markets. These competitive disadvantage in international experience and managerial talent vis-à-vis their counterparts (especially developed country multinationals) impact on their ability to generate higher firm value (Rugman and Li, 2007).

The above arguments lead to our central research question, that is: *Can the bonding hypothesis adequately explain the relationship between firm value and cross-listing found in the literature in the Chinese context and if not what other factors impact such relationship?* Accordingly, two alternative hypotheses are developed: (1) international cross-listing will yield a better valuation than Chinese firms listed only on the domestic stock exchange, or (2) international cross-listing will not necessarily outperform the Chinese firms listed only on the domestic stock exchange. To test the hypotheses we focus on firms that are listed on China A-share market and those that are listed both on China A share market and one of the six international stock

exchanges which include the New York Stock Exchange (NYSE), Hong Kong Main Board HKMB, Hong Kong Growth Enterprise Market (GEM), Singapore Stock Exchange SGX, and London Alternative Investment Market (LAIM). We analyse the panel data of Chinese cross-listings over a twelve-year period during 2001-2012. The findings suggest that (a) the Chinese cross-listing does not necessarily lead to a better firm valuation and (b) firm value was impacted by differences in corporate governance mechanisms across different international. Our findings are in line with prior studies. Siegel (2005) found that reputational bonding better explains the success of cross-listings as compared with legal bonding for Mexican firms. Sarkissian and Schill (2012)'s empirical study demonstrates the non-uniqueness of valuation premium for the US foreign listings. They show that the cross-sectional variation in the valuation premium have little association with such cross-country institutional features but is mostly related to variation in pre-listing valuation ratios. Busaba et al.(2015) show that Chinese companies previously listed abroad exhibit poorer post-issuance stock and operating performance in comparison to purely domestic issuers. Consequently, the extant bonding hypothesis can't capture the relationship between cross-listing and firm value completely and requires a refinement. Besides the above findings, we contribute to the extant literature by developing such a refined bonding hypothesis.

2. Theory and hypothesis

2.1. Bonding theory and the Chinese Context

Firms can encourage higher levels of protection for minority shareholder rights by cross-listing on a market that has a stronger, enforceable legal system (such as a U.S. stock exchange), thus substituting these mechanisms for weak home country institutions, especially emerging capital markets (Coffee 1999, 2002; La Porta et al. 1997, 1998). This argument is known as the bonding hypothesis, and the central premise of the bonding hypothesis is rooted in accepted

notions of good corporate governance (Jordan, 2006). Bonding is a practice enabled by globalization whereby firms seek listings on foreign exchanges that have high standards, it increases firm value as the firm's policies are more aligned so as to increase shareholder wealth and by making it easier for the firm to raise funds (Stulz, 1999). This argument was further elaborated by Coffee (1999, 2002) who referred to bonding as a mechanism by which firms incorporating in a jurisdiction with weak protection of minority rights or poor enforcement mechanisms can voluntarily subject themselves to higher disclosure standards and stricter enforcement to attract investors who would otherwise be reluctant to invest (or who would discount such stocks to reflect the risk of minority expropriation).

Given the above advantages of the bonding effect, cross-listing measures for improving the level of Chinese firms' corporate governance practices have taken place at multiple levels. At the institutional level, China's legislative and administrative authorities, such as the China Securities Regulatory Commission (CSRC) and lawmakers, have stipulated more than 300 laws, regulations, rules, standards, and guidelines that form the basis of the legal framework on the securities and futures markets. The rules on information disclosure, accounting standards, and regulations for listed firms are strictly required to be followed. Auditing standards, the separation of certified public accountant (CPA) firms from the state system, internal control systems, and monitoring of related party transactions have been established. The roles of the board of directors, the supervisory committee, and the auditors in information disclosure have been identified (CSRC Report, 2000). At the firm level, Chinese firms have been and will continue to be engaged in listing their shares in foreign markets considered to have superior governance systems and in bonding to them by improving their internal corporate governance practices. These developments have produced some evidence of improved accounting conservatism, and investment efficiency for Chinese SOEs cross-listed on international exchanges (Hung, Wong, and Zhang, 2012).

However, the Chinese context presents a number of unique aspects of the Chinese firms. For instance, the controlling shareholders for most large Chinese firms are the state or the government, regardless of the firms' listing locations, especially for SOEs. The main motivation of Chinese firms listing their shares in international stock markets does not seem to be in line with most of what has been revealed in the cross-listing literature (e.g. Amihud and Mendelson 1986; Domowitz et al. 1998; Stapleton & Subrahmanyam 1977). China's listed firms are not characterized by minority shareholder protections. More importantly, firms initially protect the interests of their insiders and majority shareholders (Li et al., 2008). Although the primary motivation of Chinese firms seeking overseas listing may not be to improve corporate governance, such cross-listing on an international stock exchange serves as a bonding mechanism for the firm's management to credibly commit to a better corporate governance regime. Thus improves firm performance, given that the Chinese firms are listed on the international stock exchanges have to comply with all the rules and regulations in the host markets.

2.2 Bonding hypothesis

When Chinese firms choose to list their shares internationally, regardless of whether they are SOEs or private firms, they are committed to a more rigorous disclosure standard and greater monitoring due to the host country's laws and regulations, which "bonds" managers not to take excessive private benefits and reduces the expropriation of firm resources by controlling shareholders (Karolyi 2006). Previous literature on law and finance, cross-listing, and shareholder protection (Coffee 1999; La Porta et al. 1997, 1998, 1999; Reese & Weisbach 2002; Stulz 1999) reveals that strong legal protections of minority shareholders generate higher firm value in most cases. Coffee (1999, 2002), Benos and Weisbach (2004) and Stulz (1999) declared that firms wishing to raise capital by bonding themselves to protect the interests of their minority shareholders, (according to the first part of the bonding theory), increases the

long-run q (Tobin's q , the measurement of firm value). One way to accomplish this bonding is to use a U.S. listing (cross-list on an exchange like the NYSE or NASDAQ), whose legal system protects minority shareholder interests as well as any other in the world to assure that minority shareholders are less likely to be exploited. In line with the bonding theory, we can expect that cross-listing for Chinese firms can produce bonding effects due to the increased monitoring mechanisms by foreign financial intermediaries, which, in turn, increases the firm's value. Thus, the value of Chinese firms listed solely on the foreign stock exchanges or listed both on the foreign and the home stock exchanges is higher than that of Chinese firms listed solely on the local Chinese stock exchange.

Financial transparency and adequate information disclosure are also important for a listed firm as a means of communication with its shareholders; as such, accounting disclosures represent an important corporate governance tool to assess the firm's performance. Therefore, higher-quality accounting standards signal the transparency of firm performance and enable a wider array of financing instruments (Zhang & King 2010). La Porta et al. (1998) reported the index of accounting standards of 49 developed and developing economies around the world (China was excluded from their study). The report found that Hong Kong, Singapore, the United States, and the United Kingdom have higher average accounting standards compared to those of emerging economies. Following three decades of accounting reforms, Chinese accounting standards are now generally consistent with International Accounting Standards (IAS) but include local elements. Moreover, when a Chinese firm is inclined to list overseas, it may shift to IAS or another method of accounting and financial disclosure that is accepted by the host stock exchange where it is listing. The Hong Kong Main Board, Hong Kong GEM, LAIM, NASDAQ, and NYSE require that an issuer incorporated overseas prepare its accounts in accordance with U.S. Generally Accepted Accounting Principles (GAAP) or reconcile with the U.K. Accounting Standards or IAS. Firms listed on the Singapore Stock Exchange also need to meet Singapore Financial Reporting Standards (FRS) or International Financial Reporting

Standards (IFRS) or the U.S. GAAP. It is claimed that the United States has the world's most comprehensive securities regime. The country's securities laws and regulations, administered by the U.S. Securities and Exchange Commission (SEC), generally require firms to make broad disclosures about their operations when registering publicly traded shares and/or maintaining listings for such securities. In general, host exchanges require the adoption of the U.S. GAAP and IASs for cross-listed firms. China has enjoyed the title of fastest-growing economy in the world for the last two decades or so. Yet, its legal and financial systems relevant to the stock exchanges continue to be less developed compared to those of well-established international stock exchanges in the developed world or advanced economies (Allen et al. 2005). Thus, stringent financial disclosures imposed by the Hong Kong Main Board, Hong Kong GEM, NASDAQ, NYSE, SGX, and LAIM as compared to the Chinese stock exchanges will lead to the cross-listed Chinese companies performing better than non-cross-listed Chinese companies.

Historically, CPA firms in China were affiliated with government finance bureaus, universities, or other government-owned entities (Lin & Liu 2009). Since 1997, CPA firms have dissociated themselves from these agencies to address the issue of conflict of interest and independence. To help the Chinese-listed firms improve corporate governance, the CSRC issued rules regarding the adoption of well-known international auditing firms, including Deloitte & Touche, Ernst & Young, KPMG, and PricewaterhouseCoopers, known as the "Big Four." Meanwhile, these international renowned accounting firms operating in China are also the top four in China in terms of reputation (Lin & Liu 2009). As an essential component of the corporate governance mosaic, appointing independent auditing firms plays an external monitoring role on behalf of the owners/shareholders in attesting to the credibility of accounting and financial information provided by management (Ashbaugh & Warfield 2003; Cohen et al. 2002). When a Chinese firm is listed in the Hong Kong, London, Singapore, and U.S. markets, the listed company must be audited by an independent public accountant that is registered as a public accounting firm with the public company accounting oversight board. Therefore, the

choice of independent auditing firm becomes important for an overseas-listed Chinese firm in as much as such auditing firm must be approved both in the Chinese and overseas stock exchanges. Additionally, the quality of independent auditors will directly affect firms' corporate governance and operations, and, thus their performance (Cohen et al. 2002). Due to their long-enjoyed preferential treatment from the Chinese government and their reputation for providing high-quality services to clients, the Big Four accounting firms have become the first auditing choice for Chinese firms cross-listed on the Hong Kong, London, and Singapore exchanges as well as the NASDAQ and NYSE. However, a great majority of non-cross-listed Chinese firms continue to hire local auditors. Thus, cross-listed Chinese firms that employ the "Big Four" accounting firms as their independent auditors outperform non-cross-listed Chinese firms that usually hire local Chinese auditing services.

Although the Chinese firms are forced to comply with the government law and regulations in China, but when listed on the foreign stock market they are subject to the market mechanism and regulation of that stock exchange. The enforcement of the Chinese regulations and laws may not as effective and efficient as that in the foreign stock market, leading to different level of quality of governance between the firms listed in the Chinese stock market only and the firms that are also cross-listed in the foreign stock markets. It in turn creates different level of reputation for the firms, that is, although the Chinese government imposes strict laws and regulations to monitor the stock market practices, the Chinese domestic market does not perceive this as efficient and effective mechanism for good governance of the listed firms because of the low confidence in the enforcement of the mechanism. The Chinese market has higher level of confidence in the enforcement of the market mechanism in the foreign stock market which enhances reputation of the Chinese firms. Thus, cross-listing will create a perceived (whether there is a significant improvement or not) higher reputation in the Chinese domestic market, which helps improve domestic operations leading to better valuation of such firms.

In line with the principles of bonding hypothesis, we propose the following hypothesis:

Hypothesis 1. Chinese firms cross-listed in the international stock exchange will outperform non-cross listed Chinese firm in firm evaluation.

2.3 Multinational Enterprise Theories and Firm Valuation

The theories of multinational enterprises suggest that in product market firms operating abroad face considerable challenges and incur additional costs; i.e., a liability of foreignness relative to local indigenous firms in the host country (Hymer, 1960). These challenges and costs result from their lack of familiarity with host market systems, lack of experience in foreign markets, and the geographic distance between the home and host countries (Hymer, 1960; Miller and Parkhe, 2002; Zaheer, 1995; Zaheer and Mosakowski, 1997). Theoretical argument and empirical evidence suggest that Chinese firms operating in the international markets incur a liability of foreignness (Child and Rodrigues, 2005; Sun, Zhang, and Chen, 2013). More importantly, the notion of liability of foreignness may also apply to the firms listed in foreign capital markets where such firms incur additional costs relative to their local counterparts especially when raising funds outside home capital market. This happens due to factors including institutional distance, information costs, unfamiliarity costs, and costs arising from cultural differences (Bell, Filatitchev and Rasheed, 2012).

Firms that are from transitional economies like China where institutional infrastructure are underdeveloped often rely heavily on institutional-based strategies, such as their home country location-based advantages, as the main source of competitive advantages. Their developed country counterparts operating in an environment with a well-developed infrastructure usually rely on resource-based strategies such as firm-specific advantages (FSAs) as the main source of their competitive advantages (Hermelo and Vassolo, 2010). Since the set of advantages and disadvantages are both time and extent specific (Marinova, Child, and Marinov, 2011), when operating in a host country with well-developed institutional infrastructures, the traditional

home location-based and static sources of competitive advantages are replaced by a more dynamic perspective in which advantages are spatial. The advantages that are based on institutional-based strategies in the home country thereafter become less relevant or important, while the advantages that are based on resource-based strategies, become a vital source of competitive advantages (Hermelo and Vassolo, 2010).

Chinese cross-listing firms are generally challenged by the regulatory and business cultures in advanced economies and require support from internationally-experienced advisors. Significant differences exist between regulatory, socio-cultures, and business practices in emerging and advanced economies. Operating in a developed country market requires managers of many emerging country firms to bridge language and cultural divides, comply with unfamiliar and sophisticated regulatory procedures, processes and standards, acquire local market knowledge, manage local staff, negotiate with organised labour and other stakeholders, reach higher quality and safety product and service standards, adhere to different tax and accounting rules and develop appropriate communications and public relations strategies (Sun, et al., 2013). Managers of Chinese firms are used to operating in the business environment with less-developed institutional infrastructures where there institutional voids exist (Child and Tse, 2001), and are thus ill-equipped to deal with sophistications which are present in developed economies that have well-developed institutional infrastructures. Since mid-2011, a sizable number of Chinese companies that were listed on U.S. stock exchanges faced accusations and were de-listed eventually due to accounting fraud scandal. Recently, Hong Kong Securities and Futures Commission (SEFC) also made public note that there was a lack of qualified auditors Chinese firms seeking to trade in overseas exchanges is rising rapidly. This phenomenon suggests that a legal loop-holes plague the cross-listing standards and procedures for some Chinese firms that cross-list and therefore may potentially cause the failure of the bonding effect. Thus, the Chinese firms listed on stock exchanges of developed countries increasingly struggle to remain in competition.

Furthermore, the capital market imperfections in an emerging economy like China may require a special application of the general bonding theory. Such imperfections may mean that capital is available for most Chinese firms at below-market rates for a considerable period of time (Buckley, Clegg, Cross, Liu, Voss, and Zheng, 2007). State-owned firms may have capital available to them at below market rates through a soft budget (Largy, 1998). Such firms do not have to hold high levels of cash as credit is readily available and they don't have financial constraints. Conglomerate firms may operate in an inefficient internal capital market that effectively subsidises new ventures (Liu, 2005). Privately-owned firms may have access to cheap capital from family members (Tsai, 2002). Inefficient banking systems may make soft loans to potential investment projects (Child and Rodrigues, 2005) such as providing finance with a below-market rate of interest. Therefore, for most Chinese firms, accessing lower cost of external financing is unlikely to be the primary motivation for cross-listing in the international stock exchanges. Chinese firms arguably do not possess many strong competitive advantages compared with their global rivals (Cui and Jiang, 2009; Jiang and Stening, 2012; Rui and Yip, 2008). This is mainly due to the fact that these firms have firm-specific disadvantages in many areas, such as lack of production and technological knowhow, lack of brand recognition, lack of management knowhow, lack of marketing skills, lack of quality control systems, etc. They often do not have the capabilities or resources to turn firm-specific disadvantages into firm-specific advantages on their own or in partnership with foreign firms in their home country. Firm-specific disadvantages can be compensated for in the international arena by means of transfer, acquisition (of technologies, designs, brands, etc.), and internal independent learning (Child and Rodrigues, 2005; Marinova, Child, and Marinov, 2011; Rugman and Li, 2007). Innovations, knowhow, technology, production processes, marketing, and managerial expertise are readily available in developed country contexts where they could be accessed by Chinese firms investing outwards (Marinova, Child, and Marinov, 2011). Chinese firms may move into developed markets with the strategic intent to acquire such assets with the potential to enhance

their firm-specific advantages (Cui and Jiang, 2009; Rui and Yip, 2008). Thus, Chinese firms generally pursue more strategic than commercial objectives in their internationalization.

At the operational level, it is reported that many Chinese companies' controlling shareholders and/or company management often manipulate financial reports, with the assistance of some accounting or auditing firms (Cai, 2007). The cross-listed firms may still carry these practices and face significant challenges when operating in the international stock markets where the corporate governance rules are stringent. As Siegel (2005) points out cross-listings did not always serve as an effective bonding mechanism for deterring fraudulent behaviour. Since 1993, another corporate governance mechanism used in Chinese-listed firms is the supervisory board. It may not be unreasonable to assume that the subsequent introduction of independent directors could entail conflicts where firms have such supervisory boards. As a result, the governance advantages once derived from a second listing in the U.S. or U.K. markets hardly exist for these companies. These arguments depict a rather different and complex operating environment in which the Chinese cross-listing firms may behave in a way that is contradictory to the bonding role of cross-listing in general. In other words, the cross-listing on international stock exchanges may not improve valuation of cross-listed firms.

The above analysis leads to our competing hypothesis below against the bonding hypothesis:

Hypothesis 2. Chinese firms cross-listed on foreign stock exchange will not necessarily outperform the Chinese firms listed only on the domestic Chinese stock exchanges.

In line with the liability of foreignness related multinational theories, the institutional and cultural differences as outlined earlier, as well as the differences in the degree of economic freedom in China and other developed countries may create significant challenges or barriers for the cross-listed Chinese firms to take advantages of the more advanced governance mechanisms provided by the international stock exchanges. Consequently, the value of Chinese

firms solely listed on foreign stock exchanges or listed both on foreign and home stock exchanges may not be as high as that of Chinese firms listed only on the local Chinese stock exchange. Therefore, we propose the following hypotheses:

Hypothesis 2a. The institutional distance between China and international cross listing countries moderate the relationship between corporate governance and the value of cross-listed firms, such that the expected positive effect of advanced governance on valuation of Chinese cross-listing firms may be eliminated or minimised when institutional distance is high.

Hypothesis 2b. The difference in the degree of economic freedom between China and international cross listing countries moderate the relationship between corporate governance and the value of cross-listed firms, such that the expected positive effect of advanced governance on valuation of Chinese cross-listing firms may be eliminated or minimised when differences in the degree of economic freedom is high.

Hypothesis 2c. The cultural distance between China and international cross listing countries moderate the relationship between corporate governance and the value of cross-listed firms, such that the expected positive effect of advanced governance on valuation of Chinese cross-listing firms may be eliminated or minimised when cultural distance is high.

3. Variable description and measurement

3.1. Dependent variable: firm valuation

Following Doidge et al. (2004), this study uses Tobin's q as the measure of firm valuation or firm performance for examining how corporate-governance mechanisms affect firm value.

Equation (1) below shows how Tobin's q is estimated:

$$\text{Tobin's } q_{it} = \frac{TA_{it} - BV_{it} + MV_{it}}{TA_{it}} \quad (1)$$

where i represents Chinese-listed firm i at the end of December for each year t , from 2001 to 2010. Chinese-listed firms include firms listed on the Shanghai and Shenzhen A markets (hereafter we referred collectively as the China A-share market), and the overseas markets already indicated. TA, BV, and MV respectively denote total assets, book value of equity, and market value of equity. All variables in the Tobin's q calculation are denominated in the same currency. To make firms across markets more comparable, we eliminate firms in the financial sector, such as banks and securities, investment companies, and insurance companies. Locally listed Chinese firms include Chinese firms that list their shares only on the China A-share market; dual- or triple-listings are eliminated from this category but are treated as instances of cross-listing. Shares only listed on a foreign stock exchange are treated as cross-listing.

3.2. Control variables

We controlled for firm size, listing ages and leverage to exclude alternative interpretations of the results. The size of the company is used as a proxy to explain bureaucratic inefficiencies brought about due to firm size. The log of book value of total asset would be used as a proxy for firm size. Since the study is dealing with different markets with different currencies, for uniformity, all values are expressed by Chinese RMB. Firm size of the company is used as a proxy to explain bureaucratic inefficiencies brought about due to firm size. Banz (1981) finds that small firms generate higher returns than large firms. Lang and Stulz (1994) find a significant negative relationship between firm size and performance. Listing age is measured by the years listed on the stock exchange. It is argued that older firms are likely to be more efficient than younger one, due to the effects both the learning curve and survival bias (Ang et al. 1999). The financial leverage could capture the value of corporate tax shields, which could cause higher values of Tobin's q or other performance indicators (Morck et al. 1988). Conversely, as the level of debt increases so too does the incentive for the lender to

monitor the firm, leading to better performance (Bebczuk, 2003). Leverage in this study is measured by total debt divided by total asset.

3.3. Independent variables

The independent variables include corporate governance variables and cross-listing. Following from Bai et al. (2004) the governance variables include financial disclosure, audit firms, controlling shareholder, second-largest shareholder, duality between the Chairman and the CEO, board size, and independent directors. Cross-listing, financial disclosure, auditing, and chairperson and CEO duality are measured as a dummy variable which equals 1 if the firm is cross-listed on international markets, if the firm adopting IFRS, FRS, or US GAAP, if the firm appointing one of the four famous accounting firms, if the chairperson of the board is the same person as the CEO, and 0 otherwise. Controlling shareholder is measured by the percentage of shareholding held by the largest shareholder, second-largest shareholder is measured by the percentage of shareholding held by the second-largest shareholder. Board size is the number of directors on the board, independent director is the percentage of independent directors on the board.

Table 1 summarizes the description of these variables.

Insert Table 1 here

3.4. Moderators

Three distance variables (cultural distance, institutional distance, and distance in economic freedom) are the moderators. Cultural distance is defined as the difference between the national culture of the home country (China) and those of the four host economies and district. It is measured through the four cultural dimensions of power distance, uncertainty avoidance, individualism and masculinity, as identified by Hofstede (1983). Using the scores for individual countries provided by Hofstede and Hofstede (2005) and following the method developed by

Kogut and Singh (1988), culture distance was measured by using a composite variable consisting of the four cultural dimensions. A low score on this measurement represents cultural proximity and a high score means culturally more distance between China and a host economy.

Economic freedom is used as a composite variable and it's measured as per the Index of Economic Freedom (Heritage Foundation, 2013). This data source provides information about a broad range of economic regulatory regime, focusing on the freedom of individuals and companies in a country to pursue business interests, and is extensively used in literature. (Meyer et al., 2009 etc.). The economic freedom measurement is based on 10 quantitative and qualitative factors, grouped into four broad categories which includes rule of law, limited government, regulatory efficiency and open markets. Each of the ten economic freedoms within these categories is graded on a scale of 0 to 100. The theoretical consideration of this study suggests that conceptualisation of economic freedom focuses on the economic regulatory regime which promotes China's cross-listing activities in a host country.

Institutional distance is derived from the Worldwide Governance Indicator. The Worldwide Governance Indicators report aggregates the individual governance indicators from six dimensions of governance: voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law, and control of corruption. This composite Worldwide Governance Indicator is useful for broad cross-country comparison. The six aggregate indicators are reported in percentile rank terms from 0 to 100, with higher values corresponding to better outcomes.

The institutional distance and the distance in economic freedom are the relative distance between China and each foreign stock exchange's country location and are calculated in the same way for calculating the cultural distance. Distance calculation, illustrated by cultural distance (Kogut and Singh, 1988) is shown below:

$$CD_j = \sum_{i=1}^4 \frac{\{ \frac{(I_{ij} - I_{i0})^2}{V_i} \}}{4} \quad (2)$$

Where CD_j is the cultural distance between country j and the other country, I_{ij} is country j 's score on the i th cultural dimension, I_{i0} is the score of the other country on this dimension, and V_i is the variance of the score of the dimension.

4. Method

4.1. Data

A panel dataset is assembled according to a broad cross-section of Chinese firms cross-listed on various stock exchanges over the twelve-year period of 2001–2012. Data on cross-listed Chinese firms are obtained from relevant websites. The primary sources of company information are the websites of the LAIM, the HKEx (Hong Kong Exchanges and Clearing), the SGX and the CSRC. We use the information provided by the Bank of New York on Chinese firms that are traded in the United States, including the NYSE, the NASDAQ, the American Stock Exchange, and over-the-counter (OTC) markets in the form of American Depository Receipts (ADRs). Dual-listed, triple-listed, and cross-listed Chinese firms in the China A-share market, the NYSE, NASDAQ, OTC, the Hong Kong Exchanges, and the SGX are eliminated from the non-cross-listed database so that only locally listed Chinese firms are included. The Chinese firms listed on the American Stock Exchange are also included (there are only six Chinese listings though), they are categorized with firms cross-listing on the NYSE. For firms listed only on the domestic Chinese stock markets, data is collected from GTA database. Corporate governance variables data is collected from GTA database and annual reports of the listed companies. Market data is retrieved from Datastream. Our data sample is for the twelve-year period from 2001-2012 with 409 cross-listed companies included. Among those cross-listed firms, 129 are on HKMB, 42 on HKGEM, 137 on SGX, 34 on NASDAQ, 33 on NYSE,

and 34 on LAIM. Meanwhile, during the same time period, there were 1,306 Chinese companies listed their on domestic exchange only. Our final sample includes 1,714 Chinese firms with corresponding sample of firm year observations of 20,580.

Chinese securities may be traded either in the OTC market or on a national exchange, depending on the level of compliance with U.S. disclosure and registration requirements. A great majority of the Chinese cross-listed firms can be classified into the category of the sponsored ADR program, which has three levels. Doidge (2004) has shown that the bonding mechanism does not apply to Level I or Rule 144A ADRs, and we are exploring the relationship between firm valuation and the more stringent disclosure and listing requirements, we focus on two forms of cross-listing, namely the Level II and III Chinese ADRs and foreign IPOs that are listed and traded on the Hong Kong, U.S., Singapore, and U.K. exchanges.

4.2. Hypothesis testing

To test hypotheses we used a dynamic longitudinal panel data research design which would help us to control for endogeneity and unobserved heterogeneity. As our dataset has 12 years and over thousands of Chinese firms, we adopt a system generalized method of moments (GMM) estimator (Arellano and Bover, 1995; Blundell and Bond, 1998) instead of a difference GMM estimator. It is argued that Arellano-Bover/Blundell-Bond estimator augments Arellano-Bond estimator by making an additional assumption that first differences of instrument variables are uncorrelated with the fixed effects, which allows the introduction of more instruments and can dramatically improve efficiency (Roodman, 2009). It is also because the persistence of the dependent performance variable could cause severe weak instrument problems in difference GMM models (Uotila et al., 2008). We use the `xtabond2` Stata module (Roodman, 2009) to estimate the System GMM. We treat all of the control variables as endogenous and the corporate governance variables and distance variables are exogenous variables.

The following model is developed for testing the hypotheses grounded on the bonding hypothesis:

$$Tobin's\ q_{it} = \alpha_0 + \sum_{k=1}^3 \beta_{1,k} Control\ variables_k + \sum_{l=1}^8 \beta_{2,l} Corporate\ governance\ variables_l + \varepsilon_{it} \quad (3)$$

Tobin's q_{it} is defined as in Equation 1; α_0 represents the constant term; “Firm-specific variables” (which also serve as control variables) represent the finance fundamental for each variable (k = 1 for firm size, 2 for leverage, 3 for listing ages); Corporate governance variables represent cross-listing, financial disclosure, auditing, duality of chairman and CEO, controlling shareholder, second-largest shareholder, board size, and the percentage of independent directors to the board.. The coefficient β measures the sensitivity of each of these variables to *Tobin's q*. In line with the logic of bonding theory, which postulates that higher governance standards result in better firm valuation (Coffee, 2002; Jordan, 2006), the higher corporate-governance standards adopted in the international stock markets will result in better valuation of Chinese cross-listed firms in these markets. Similarly, the variation in the level of advancement in the corporate governance in different international markets will also result in variations in firm valuation between these international markets.

To test hypotheses that are grounded on the liability of foreignness perspective, we examine whether the institutional distance, differences in the degree of economic freedom, and cultural distance between China and the country location of the international stock markets will weaken or eliminate the expected positive effect of more advanced corporate governance on firm valuation. Thus, we include an interaction term between each of the three distance variables with each of the corporate-governance mechanism variables in the model. In line with the logic of liability of foreignness related multinational corporation theories, these distance variables will negatively moderate the expected positive relationship between the governance variables and

the firm valuation, which can explain why the bonding theory might not apply to the Chinese firms' cross-listing in the international stock exchanges. The model is specified below:

$$\begin{aligned}
 \text{Tobin's } q_{it} = & \alpha_0 + \sum_{k=1}^3 \beta_{1,k} \text{Control variables}_k + \\
 & \sum_{l=1}^8 \beta_{2,l} \text{Corporate governance variables}_l + \beta_{3,m} \text{Moderating variables}_m + \\
 & \sum_{n=1}^8 \beta_{4,n} (\text{Moderating variables} \times \text{Corporate governance variables}_l) + \varepsilon_{it} \quad (4)
 \end{aligned}$$

5. Results

5.1. Descriptive statistics and correlations

Table 2 presents the descriptive statistics for the firm specific variables and the corporate governance variables. Chinese firms cross-listed on NASDAQ show the highest Tobin's q ratio of 2.48 compared to the others. This reflects a relatively higher market valuation compared with the Chinese securities listed on the other markets. Another interesting observation is that Chinese firms listed in Hong Kong and Singapore tends to have a lower Tobin's q on average. The bigger firms normally list on HKBM and local China markets. On the contrary, Chinese firms listed on SGX, LAIM, and HKGEM appear to be smaller in size. Chinese firms listed in Hong Kong normally have higher leverage ratio compared to the firms listed in other markets given that these firms are mostly SOEs. Firms listed on NASDAQ have the lowest leverage ratio in the sample data.

For the corporate governance variables, Chinese firms listed on the HKBM have the largest controlling shareholders, controlling approximately 49% of the shares of the firm, however, those on NASDAQ recorded the smallest controlling shareholders, representing approximately 26.4% of the shares of the average listed company.

As for board size; Chinese securities listed on the HKBM have the largest board size compared with the other exchanges, with a mean of 11 board members. However, the percentage of board members who are independent directors for listed Chinese firms is generally consistent

across the China and Hong Kong markets. Firms listed on the NASDAQ and the NYSE have the highest percentage of independent directors on boards. For LAIM, we however, use non-executive directors instead of independent directors; as most of the Chinese firms listed there don't have the required number of independent directors. Accordingly, while considering firms on LIAM, we included only those companies that had the required data.

Insert Table 2 here

Table 3 reports the correlation between the variables for all the listed Chinese firms. The variable of cross-listing has considerably high correlations, that is, greater than 0.6 cut-off point (Churchill, 1991) with variables of financial disclosure, auditing, institutional distance, and distance in economic freedom. This is reasonable as most of the cross-listed firms would adopt the international financial disclosure or local accepted financial disclosure and hiring Big-Four auditing services. Since the level of development of institutions and the degree of economic freedom in China are lower than that in the advanced economies where the major international stock exchanges are located, it is logical that the positive high correlation between cross-listing and the distances in institutions and economic freedom, and between the institutional distance and distances in economic freedom are also expected. In addition, these highly correlated variables were not included in the same model for data analysis. Consequently, the high correlations are not a concern for the data analysis.

Insert Table 3 here

5.2. *GMM Estimator Results*

The results from the system GMM regression models are presented in Table 4. Model 1 (GMM1) reports the regression with only the firm specific variables that are considered as control variables. Model 2 (GMM2) reports the effect of cross-listing on firm valuation aiming

to directly test the relevance of the bonding effect (Hypothesis 1). Model 3 (GMM3), in addition reports the effect of each individual governance variable on firm valuation. Models 4-6 (GMM4, GMM5, and GMM6) examine how the distances in institutions, economic freedom, and cultures between China and the cross-listing locations interact with the corporate governance variables affecting firm valuation, providing evidence to support or otherwise reject the Hypothesis 2, Hypotheses 2a-2c.

Table 4 also reports Wald Chi-square test statistic, significance of Hansen test, and AR(1) and AR(2) tests. In all cases, the Hansen test and AR (2) test is larger than 0.05, which indicates failure to reject the null hypothesis of over-identification and second-order serial correlation of error terms.

Insert Table 4 here

Model 1 shows that firm size and listing ages are important firm-specific factors that influence the value of all the listed Chinese firms. Larger Chinese firms with more assets and with longer listing history have lower Tobin's q values, which is consistent with prior findings of significant negative relationship between firm size and performance (Lang and Stulz, 1994), and an inverse relationship between listing years and the performance of the listed firms (Pagano et al., 1998).

Model 2 shows that there is a significant negative relationship between cross-listing and firm valuation ($p < .001$), suggesting that the Chinese firms cross-listed on the international stock exchanges underperform those listed on domestic stock exchanges. This is in contrast with the principles of the bonding hypothesis. Therefore, statistically, Hypothesis 1 is rejected, while Hypothesis 2 is supported.

The effects of each of corporate governance variables on firm valuation are reported in Model 3. The results show that the effect of three variables including auditing, duality of CEO

and Chairman, and independent director are in line with the bonding hypothesis, but none of which is statistically significant ($p > .05$). Variables of financial disclosure, controlling shareholder, second largest shareholder, board size are in contrast to the bonding hypothesis with the effect of financial disclosure and board size being statistically significant ($p < .001$ and $p < .05$, respectively). To summarise, of the seven governance variables, two variables are statistically significant to reject the bonding hypothesis and the remaining variables were not found to be significant.

The totality of the findings on the effects of the corporate governance variables on the valuation of the cross-listed Chinese firms as discussed above suggest that the application of the bonding theory received very limited empirical support in the context of the Chinese firms cross-listed in the international financial exchanges in developed or advanced economies.

There is a positive and significant impact on firm valuation while concentrated equity ownership as measured by the largest shareholder and the second-largest shareholder was found to have a positive and significant impact. This result is consistent with the finding from Ang et al. (2000) that a controlling shareholder may introduce monitoring or bonding mechanisms that limit his or her ability to extract wealth from outside shareholders and hence mitigate the agency conflicts. Meanwhile, hiring Big-Four auditing firms was found to be an effective corporate governance practice that would increase the firm performance.

Building on the Models 1 and 3 presented in Table 4, Models 3-6 report the results of the interaction of institutional distance, distance in economic freedom, and cultural distance with each of the corporate governance variables. The results show that each of the three distance variables has a significant direct negative effect on firm valuation ($p < .001$). Model 4 shows that the institutional distance interacts with financial disclosure, controlling shareholder, second largest shareholder, and board size leading to lower firm valuation of cross-listed firms. The effect of the interactions with the institutional distance and second largest shareholder and

board size are statistically significant at $p < .001$ level. The results suggest that when the institutional distance is high, the expected positive relationship between the proportion of the shares held by second largest shareholder (of the firms cross listed in the international stock exchanges) and firm valuation is negative ($p < .001$), and the positive relationship between board size (usually the firms cross-listed on the international stock exchanges have smaller board size) and firm valuation is stronger ($p < .001$). The rest of the three interaction terms present opposite effect, but only one of which, the interaction between institutional distance and auditing, is significant at $p < .001$ level, meaning that when the institutional distance is high, the positive relationship between auditing and firm valuation is stronger ($p < .001$).

The interactions of the distance in economic freedom and cultures with the corporate governance variables are shown in Model 5. The distance in economic freedom interacts with financial disclosure, controlling shareholder, second largest shareholder, board size, and independent director leading to lower firm valuation of cross-listed firms. The effect of the interactions of the distance in economic freedom with second largest shareholder, board size, and independent director are all statistically significant ($p < .001$; $p < .001$; and $p < .05$; respectively). These results suggest that when the distance in economic freedom is high, the expected positive relationship between the proportion of the shares held by second largest shareholder (of the firms cross listed in the international stock exchanges) and firm valuation becomes significantly negative ($p < .001$), the positive relationship between board size (usually the firms cross-listed on the international stock exchanges have smaller board size) and firm valuation is stronger ($p < .001$), and the relationship between independent director and firm valuation becomes significantly negative ($p < .05$). The rest of the three interaction terms present opposite effects, one of which, the interaction between distance in economic freedom and auditing, is significant at $p < .001$ level, meaning that when the distance in economic freedom is high, the positive relationship between auditing and firm valuation is stronger ($p < .001$). The effects of

the interactions between the cultural distance and the corporate governance variables are similar (refer to Model 6 in Table 4).

The totality of the results presented in models 4, 5, and 6 in Table 4 suggests that the bonding effect does not appear in the Chinese cross-listing firms, and the high distances in institutions, economic freedom, and cultures between China and the international cross-listing locations may be responsible for the lack of bonding effect, or for even a negative effect of cross-listing activities on firm valuation. Statistically, the empirical results provide us with considerable evidences to support hypotheses 2a, 2b, and 2c.

5.3. Robustness Test

A series of sensitivity tests are conducted to examine the robustness of the GMM estimator method and the empirical results. This study covers the years 2001 to 2012; which included the GFC year, that is, 2008. When the crisis hit, firm performance may have been affected. To avoid any bias due to the GFC, we cut 2008 data from the whole data set and just focused on the period 2001 to 2007, and 2009-2012 to conduct the robustness test. The same measurements of the variables were used, and the same panel data analysis was adopted so as to test the robustness of the findings which yielded very similar results. The robustness test results are available upon request from the authors.

6. Discussion

This paper finds that bonding theory may not adequately explain the case of Chinese firms' cross-listings in the international stock markets. The empirical results suggest that Chinese cross-listed firms may behave in a way that is not consistent with what one would expect from the bonding theory. In other words, cross-listing on international stock exchanges may not necessarily improve valuation of cross-listed firms. The findings lead to the conclusion that the value of Chinese firms solely listed on foreign stock exchanges or listed both on foreign and

home stock exchanges is not as high as that of Chinese firms listed only on the local Chinese stock exchange. We suggest several reasons below why the results generated from this research are different from the results normally seen in empirical studies grounded in the bonding hypothesis. These findings pave the way for further research.

The theory of the liability of foreignness and the home turf advantage could be influencing the results that we obtained. The accounting frauds leading to de-listing, dearth of qualified auditors, and other legal loopholes pointed out earlier may potentially cause the failure of the bonding effect. Thus, the cross-listed Chinese firms increasingly struggle to remain competitive affecting their performance as compared to those listed solely on domestic markets. It means that the extant bonding hypothesis can't fully capture the Chinese phenomena. It is possible that similar situations may also exist for firms of other developing countries that are cross-listed. Empirical studies are necessary for these countries. Based on the empirical evidence presented in this paper, we could refine the bonding theory so as to incorporate the influence of corporate governance requirements in various overseas stock exchanges. Consequently, location of cross-listing needs to be included as a factor in the bonding theory.

In addition to the liability of foreignness as an important explanation to the inapplicability of the bonding theory to the Chinese cross-listing, a multifactorial theorising approach may provide a more comprehensive picture of the phenomena, as the capital market imperfections in emerging economy like China may require a special application of the general bonding theory. Such imperfections may mean that capital is available for most Chinese firms at below-market rates for a considerable period of time (Buckley et al., 2007). State-owned firms may have capital available to them at below market rates (Largy, 1998). Furthermore, conglomerate firms may operate in an inefficient internal capital market that effectively subsidises new ventures (Liu, 2005). Privately-owned firms may have access to cheap capital from family members (Tsai, 2002). Inefficient banking systems may make soft loans to potential investment

projects (Child and Rodrigues, 2005). Therefore, for most Chinese firms, assessing lower cost of external financing is unlikely to be the primary motivation for cross-listing and it is more likely to achieve positive reputational advantage for domestic operations as well as acquiring complementary assets so as to compensate for their firm-specific competitive disadvantages (Child and Rodrigues, 2005; Zhang, 2003).

Following the logic of Coffee (1999), it is possible that Chinese cross-listed firms may enjoy a positive effect of reputational bonding for domestic operations further improving their performance. It may encourage investors to believe that firms cross-listed in countries with highly effective judicial systems may better regulate themselves and thus act in the best interest of their shareholders. Consequently, investors may place higher value on firms that are cross-listed on international stock exchanges, knowing that cross-listed Chinese firms are expected to yield better firm performance compared to firms listed locally under a poor legal protection investment environment.

Chinese firms arguably do not possess strong competitive advantages compared with their global rivals (Cui and Jiang, 2009; Jiang and Stening, 2012; Rui and Yip, 2008). This is mainly due to the fact that these firms have firm-specific disadvantages in many areas, such as lack of production and technological knowhow, lack of brand recognition, lack of management knowhow, lack of marketing skills, lack of quality control systems, etc. These firm-specific disadvantages can be compensated for in the international arena by means of transfer, acquisition (of technologies, designs, brands, etc.), and internal independent learning (Child & Rodrigues, 2005; Marinova, Child, and Marinov, 2011; Rugman and Li, 2007). Innovations, knowhow, technology, production processes, marketing, and managerial expertise are readily available in developed country contexts where they could be accessed by Chinese firms investing outwards (Marinova, Child, and Marinov, 2011). Chinese firms may move into developed

markets with the strategic intent to acquire such assets with the potential to enhance their firm specific advantages (Cui and Jiang, 2009; Rui and Yip, 2008).

7. Conclusion

In this study, we examined the influence of firm-specific factors and bonding mechanisms on Tobin's q for Chinese firms that cross-list on international stock exchanges, and the relationship between firms' valuation and corporate governance attributes consequent upon cross-listing. The empirical results suggest three major findings. First, the results suggest that cross-listing on international stock markets that have better governance systems does not necessarily improve firm valuation of cross-listing firms in the context of Chinese firms' cross-listing in the international stock markets. Second, variations in the levels of stringency of corporate governance system across different markets explain the variations in firm valuation. Third, the Chinese cross-listing decision may be more simply to derive reputational advantage than commonly thought. This finding is also consistent with prior literature that well-performing firms do not necessarily enjoy increased valuation on foreign markets post cross-listing and prefer to stay in the domestic market (Doidge et al. 2009).

There are several major takeaways from our paper. First, we use a unique dataset, not used hitherto. We examine the issue of the relationships among corporate governance, cross-listing, and firm value. Second, to our knowledge, we examined the impact of location of cross-listing on firm value for the first time. We demonstrate that any analysis grounded in the bonding theory needs to incorporate the location of cross-listing as a factor in the analysis. By proposing this, we make a major contribution to the refinement of extant bonding hypothesis. Third, we demonstrate that as corporate governance practices differ between various overseas exchanges, these could have different impacts on firm value. Based on these findings, we conclude that it may not be appropriate for Chinese firms to go to overseas listing blindly without considering whether the location would result in added firm value. Finally, our results show that the firm-

specific factors are more likely to influence the value of a firm, regardless of whether they are cross-listed on an international stock exchange or not.

The findings may also be useful for various stakeholders, such as the investors and market regulators. First, adopting the corporate governance mechanisms required by foreign markets (such as Chinese firms cross-listed in Hong Kong, Singapore, and London), does not necessarily mean that these firms improve their performance, although some of the rules and mechanisms required by the host exchanges, such as hiring well-regarded international auditing firms to monitor financial disclosures, do have a significant effect on firm performance. Therefore, for the international stock exchanges, a better understanding of the drivers of Chinese firms' going abroad will help guide their policies, including listing requirements and other regulations.

By examining the combined effects of cross-listing and corporate governance mechanisms, we find that different stock markets have different corporate governance systems to improve firm performance, which is country specific. There is no single model of good corporate governance, and each system has its strengths and weaknesses. Second, it is worthwhile to note that the equity market environment in China has some distinct features compared with most developed countries. For instance, there are still a large number of cross-listing firms that are state-owned enterprises, and the government exercises substantial control over operations. In addition, the corporate governance practices from the developed culture may not be fully realized in a relatively less efficient capital market like China, which is why we see that internationally cross-listed firms generally do not outperform non-cross-listed firms. Therefore, the effects of different environmental factors should be taken into account when comparing corporate governance practices in China with those in developed countries.

As can be seen, bonding theory alone may not be appropriate for explaining the firm valuation, especially when there is a significant difference in political and legal systems, stages of economic development, and social and cultures between the home and host countries. One of

the avenues for further investigation is the relationship between cross-listing and firm valuation in the context of other emerging economies. Furthermore, multi-theoretical lenses may be used by inclusion of relevant multinational enterprise theories such as liability of foreignness (Hymer, 1960; Zaheer, 1995), institutional theory (Scott, 1995; North, 1990), and resource-based views (Barney 1991) as well as looking into the interplay and interactions between firms' external environmental variables and internal resources and capabilities, which determine a firm's competitive advantage and disadvantage, consequently affecting firm performance when operating in international markets.

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Table 1
 Summary description of variable definitions.

Variables	Measurement
<i>Dependent Variable</i>	
Tobin's q	(total assets - book value of equity + market value of equity)/total assets
<i>Control Variables</i>	
Firm size	Natural logarithm of total assets of the company
Listing history	Years listed on the stock exchange
Leverage	Total liabilities relative to total assets
<i>Independent Variables</i>	
Cross-listing	Equals 1 if the firm is cross-listed on international markets. 0 otherwise
Financial disclosure	Equals 1 if firms adopting IFRS, FRS, or U.S. GAAP. 0 otherwise
Auditing firm	Equals 1 if firms appointing one of four famous auditing firms. 0 otherwise
Chairperson and CEO duality	Concurrent positions in the board of directors, equals 1 if the CEO and chairperson of the board is the same person, 0 otherwise
Controlling shareholder	Shareholding of the largest shareholder (%)
Second-largest shareholder	Shareholding of the second-largest shareholder (%)
Board size	Number of directors on the board
Independent directors	Percentage of independent directors on the board (%)
<i>Moderators</i>	
Institutional distance	The difference between the home country's (China) governance index to the other four host countries (USA, UK, and Singapore) and district's (Hong Kong)
Economic freedom distance	The difference between the home country's (China) economic freedom level to the other four host countries (USA, UK, and Singapore) and district's (Hong Kong)
Culture distance	The difference between the home country (China) and the other four host countries (USA, UK, and Singapore) and district's (Hong Kong)

Table 2

Descriptive statistics.

Summary statistics are computed as of December 31 for each year from 2001 to 2012 for firms listed in different markets.

	Variables	Mean	Standard Deviation	Mini- mum	Maxi- mum	Observa- tion	
China A	<i>A: Firm Specific Variables</i>						
		Tobin's Q	2.11	1.79	0.01	48.67	14593
		Firm Size	14.46	1.20	5.41	21.90	14599
		Leverage	0.51	0.35	0.00	16.33	14593
		Local Listing Years	8.40	4.62	0.08	24.00	13710
		<i>B: Corporate Governance Variables</i>					
		Financial Disclosure	0.00	0.05	0.00	1.00	13493
		Auditing Firm	0.03	0.18	0.00	1.00	13409
		Duality of CEO and Chairman	0.14	0.35	0.00	1.00	12420
		Controlling Shareholder	38.72	16.38	3.73	99.08	12695
		Second Largest Shareholder	8.41	7.63	0.06	41.74	12693
		Board Size	9.40	2.07	3.00	19.00	12465
		Number of Supervisors	4.07	1.38	1.00	13.00	12470
		Percentage of Independent Director	0.34	0.07	0.06	0.71	11936
HKGEM	<i>A: Firm Specific Variables</i>						
		Tobin's Q	1.64	1.27	0.44	14.27	383
		Firm Size	13.14	1.08	10.39	16.16	388
		Leverage	0.46	0.68	0.06	12.12	386
		Cross-Listing Years	5.12	3.11	0.08	12.50	390
		<i>B: Corporate Governance Variables</i>					
		Financial Disclosure	0.16	0.36	0.00	1.00	387
		Auditing Firm	0.47	0.50	0.00	1.00	386
		Duality of CEO and Chairman	0.32	0.47	0.00	1.00	370
		Controlling Shareholder	37.81	17.26	5.83	71.25	369
		Second Largest Shareholder	13.70	8.20	1.29	49.00	340
		Board Size	9.37	1.85	6.00	17.00	370
		Number of Supervisors	3.96	1.14	2.00	9.00	316
		Percentage of Independent Director	0.34	0.07	0.14	0.57	370
HK Mainboard	<i>A: Firm Specific Variables</i>						
		Tobin's Q	1.30	0.72	0.37	9.56	1146
		Firm Size	16.93	1.98	13.10	23.59	1153
		Leverage	0.52	0.24	0.03	1.77	1152
		Cross-Listing Years	7.46	4.68	0.08	19.42	1156
		<i>B: Corporate Governance Variables</i>					
		Financial Disclosure	0.44	0.50	0.00	1.00	1147
		Auditing Firm	0.85	0.36	0.00	1.00	1140
		Duality of CEO and Chairman	0.15	0.36	0.00	1.00	1141
		Controlling Shareholder	48.49	15.85	3.69	90.00	1133
		Second Largest Shareholder	10.14	9.16	0.05	48.72	1081

	Board Size	11.16	2.63	5.00	25.00	1142
	Number of Supervisors	4.76	1.87	0.23	13.00	937
	Percentage of Independent Director	0.35	0.09	0.10	0.71	1142
<hr/>						
London AIM						
<i>A: Firm Specific Variables</i>						
	Tobin's Q	1.54	2.84	0.01	37.52	190
	Firm Size	12.29	2.40	6.61	17.38	210
	Leverage	0.35	0.26	0.01	1.53	211
	Cross-Listing Years	3.58	2.61	0.08	15.50	182
<i>B: Corporate Governance Variables</i>						
	Financial Disclosure	0.99	0.10	0.00	1.00	181
	Auditing Firm	0.25	0.43	0.00	1.00	185
	Duality of CEO and Chairman	0.22	0.41	0.00	1.00	176
	Controlling Shareholder	39.26	21.76	4.30	95.20	164
	Second Largest Shareholder	13.61	8.46	0.25	40.31	157
	Board Size	6.36	1.87	3.00	11.00	176
	Percentage of Independent Director	0.31	0.12	0.14	0.60	49
<hr/>						
NASDAQ						
<i>A: Firm Specific Variables</i>						
	Tobin's Q	2.48	2.61	0.19	18.02	235
	Firm Size	13.36	1.29	10.92	17.46	245
	Leverage	0.27	0.24	0.03	2.64	245
	Cross-Listing Years	3.96	2.54	0.08	12.50	243
<i>B: Corporate Governance Variables</i>						
	Financial Disclosure	0.90	0.31	0.00	1.00	230
	Auditing Firm	0.98	0.15	0.00	1.00	228
	Duality of CEO and Chairman	0.53	0.50	0.00	1.00	227
	Controlling Shareholder	26.39	14.91	5.50	68.10	235
	Second Largest Shareholder	12.05	6.20	0.50	36.20	225
	Board Size	6.69	1.63	4.00	11.00	235
	Percentage of Independent Director	0.55	0.14	0.18	1.00	220
<hr/>						
New York						
<i>A: Firm Specific Variables</i>						
	Tobin's Q	1.91	1.97	0.09	10.45	172
	Firm Size	14.05	1.41	10.68	17.66	192
	Leverage	0.37	0.33	0.04	3.88	190
	Cross-Listing Years	3.93	3.48	0.08	19.67	191
<i>B: Corporate Governance Variables</i>						
	Financial Disclosure	0.81	0.39	0.00	1.00	194
	Auditing Firm	0.91	0.28	0.00	1.00	192
	Duality of CEO and Chairman	0.68	0.47	0.00	1.00	192
	Controlling Shareholder	32.63	16.48	6.30	95.10	180
	Second Largest Shareholder	13.98	6.80	1.08	32.10	159
	Board Size	7.14	1.55	4.00	12.00	183
	Percentage of Independent Director	0.52	0.12	0.25	0.86	180

Singapore

A: Firm Specific Variables

Tobin's Q	1.29	1.60	0.14	39.56	907
Firm Size	12.82	1.73	1.95	18.50	927
Leverage	0.39	0.32	0.01	6.11	924
Cross-Listing Years	4.30	3.08	0.08	16.92	911

B: Corporate Governance Variables

Financial Disclosure	0.66	0.48	0.00	1.00	886
Auditing Firm	0.45	0.50	0.00	1.00	889
Duality of CEO and Chairman	0.49	0.50	0.00	1.00	882
Controlling Shareholder	41.72	15.54	7.62	90.67	885
Second Largest Shareholder	13.93	7.54	0.82	46.53	885
Board Size	6.48	1.52	3.00	14.00	886
Percentage of Independent Director	0.43	0.09	0.20	0.75	886

Table 3
Mean, standard deviation, and correlation* Definitions of variables are same as in Table 1.

	Mean	SD	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
(1) Tobin's q	2.004	1.776	1														
(2) Firm size	14.457	1.545	-0.154	1													
(3) Leverage	0.494	0.354	0.121**	0.096**	1												
(4) Listing ages	7.871	4.656	0.069**	0.207**	0.150**	1											
(5) Cross-listing	0.177	0.382	-0.133	-0.004	-0.084	-0.238	1										
(6) Financial disclosure	0.104	0.305	-0.094	0.007	-0.076	-0.238	0.700**	1									
(7) Auditing	0.148	0.355	-0.105	0.218**	-0.054	-0.183	0.680**	0.520**	1								
(8) Controlling shareholder	39.329	16.653	-0.098	0.169**	-0.044	-0.198	0.079**	0.028**	0.091**	1							
(9) Second largest shareholder	9.120	7.916	0.011	-0.14	-0.029	-0.157	0.192**	0.132**	0.137**	-0.311	1						
(10) Chairman and CEO	0.181	0.385	0.032**	-0.138	-0.053	-0.122	0.207**	0.178**	0.139**	-0.04	0.056**	1					
(11) Board size	9.260	2.294	-0.065	0.386**	0.058**	0.016*	-0.134	-0.145	0.030**	0.037**	-0.006	-0.175	1				
(12) Independent director	0.354	0.081	0.026**	-0.039	-0.026	0.034**	0.264**	0.284**	0.177**	-0.084	0.032**	0.182**	-0.396	1			
(13) Institutional distance	0.900	1.689	-0.133	-0.013	-0.079	-0.237	0.991**	0.700**	0.667**	0.076**	0.191**	0.204**	-0.138	0.268**	1		
(14) Distance in economic freedom	2.082	3.879	-0.137	0.063**	-0.062	-0.214	0.962**	0.621**	0.669**	0.102**	0.176**	0.173**	-0.059	0.195**	0.962**	1	
(15) Culture distance	0.234	0.732	-0.023	-0.179	-0.104	-0.206	0.553**	0.601**	0.397**	-0.071	0.127**	0.195**	-0.259	0.383**	0.558**	0.337**	1

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 4

Two-step System GMM Estimation of Corporate Governance Mechanisms, Cross-Listing, Moderating Effect and Firm Valuation

Dependent Variable: Tobin's q		GMM 1	GMM2	GMM3	GMM4	GMM5	GMM6
Constant		7.561*** (3.61)	8.948*** (5.79)	8.043*** (4.62)	8.643*** (6.29)	8.615*** (5.74)	8.102*** (5.30)
<i>Control Variable (Firm-Specific Variable)</i>							
Firm Size		-0.382* (-2.01)	-0.610*** (-4.15)	-0.588*** (-2.95)	-0.631*** (-4.45)	-0.652*** (-4.24)	-0.586*** (-3.68)
Leverage		-3.789 (-1.29)	1.032 (0.67)	-0.513 (-0.23)	1.013 (0.69)	1.327 (0.90)	-0.184 (-0.11)
Listing Years		0.059*** (3.17)	-0.014 (-0.98)	0.007 (0.43)	-0.022 (-1.79)	-0.014 (-1.05)	-0.015 (-1.04)
<i>Independent Variables</i>							
Cross-listing			-0.802*** (-5.08)				
Financial Disclosure				-0.682*** (-3.78)	0.811 (1.17)	-0.891 (-1.35)	-0.571*** (-3.15)
Auditing				0.219 (0.89)	0.462* (2.12)	0.393 (1.92)	0.228 (1.00)
Controlling Shareholder				0.003 (0.69)	0.007* (2.02)	0.007* (2.02)	0.004 (1.04)
Second Largest Shareholder				-0.006 (-1.29)	0.007* (2.17)	0.007 (2.03)	-0.003 (-0.65)
Duality of CEO and Chairman				-0.132 (-1.24)	0.120 (1.48)	0.136 (1.66)	-0.101 (-1.07)
Board Size				0.107* (2.28)	0.011 (0.48)	0.023 (0.96)	0.086* (2.27)
Independent Director				0.179 (0.30)	0.505 (1.03)	0.545 (1.07)	-0.240 (0.47)
<i>Distance Variables (Moderators)</i>							
Institutional Distance					-1.106*** (-5.45)		
Distance in Economic Freedom						-0.460*** (-5.19)	
Culture Distance							-2.260*** (-3.14)

Dependent Variable: Tobin's q	GMM 1	GMM2	GMM3	GMM4	GMM5	GMM6
<i>Interaction Terms</i>						
Institutional Distance * Financial Disclosure				-0.146 (-0.86)		
Institutional Distance * Auditing				0.111* (2.42)		
Institutional Distance * Controlling Shareholder				0.000 (0.15)		
Institutional Distance * Second Largest Shareholder				-0.005*** (-2.60)		
Institutional Distance * Duality of CEO and Chairman				-0.111 (-0.81)		
Institutional Distance * Board Size				0.070*** (5.09)		
Institutional Distance * Independent Director				-0.447 (-1.96)		
Distance in Economic Freedom * Financial Disclosure					-0.108 (-1.54)	
Distance in Economic Freedom * Auditing					0.066*** (3.20)	
Distance in Economic Freedom * Controlling Shareholder					0.000 (0.29)	
Distance in Economic Freedom * Second Largest Shareholder					-0.002* (-2.40)	
Distance in Economic Freedom * Duality of CEO and Chairman					-0.054*** (-3.11)	
Distance in Economic Freedom * Board Size					0.028*** (4.81)	
Distance in Economic Freedom * Independent Director					-0.204* (-2.14)	
Culture Distance * Financial Disclosure						-3.918 (-0.85)
Culture Distance * Auditing						10.207*** (3.50)
Culture Distance * Controlling Shareholder						-1.650 (-1.09)

Dependent Variable: Tobin's q	GMM 1	GMM2	GMM3	GMM4	GMM5	GMM6
Culture Distance * Second Largest Shareholder						-1.906*** (-3.92)
Culture Distance * Duality of CEO and Chairman						-2.368 (-0.95)
Culture Distance * Board Size						4.100*** (4.87)
Culture Distance * Independent Director						-1.552* (-2.16)
No. of Groups	1711	1679	1679	1679	1679	1679
No. of obs.	16599	13932	13932	13932	13976	13976
Wald chi ²	1994.93(13)	2362.91(14)	2126.46(20)	2446.31(28)	2474.11(28)	2615.96(28)
P-value of Hansen test	0.046	0.267	0.124	0.319	0.305	0.286
P-value of AR(1) test	0.000	0.002	0.001	0.000	0.000	0.000
P-value of AR(2) test	0.419	0.267	0.627	0.150	0.035	0.540

Notes: t-values are reported in parentheses; degrees of freedom in parentheses in the section of Wald chi²

Definitions of variables are same as in Table 1. t-values are reported in parentheses