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RESEARCH ARTICLE

Value creation and value capture in governing shareholder relationships: Evidence from a policy experiment in an emerging market

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***Research Summary*:** Protecting minority shareholders is a central issue in corporate governance. A common tool of empowering minority shareholders is to curb controlling shareholders' power of expropriating firm value, but this approach was rarely successful because of the resistance from powerful controlling shareholders. We examine an alternative way of empowering minority shareholders without directly fighting with controlling shareholders. A major corporate governance reform in China gave minority shareholders a decision right over certain actions that affected the creation of firm value. We demonstrate that the greater the extent to which minority shareholders' actions can influence the firm's value *ex post*, the more value controlling shareholders concede to minority shareholders *ex ante*. This effect becomes even stronger when controlling shareholders are able to expropriate a larger portion of firm value.

***Managerial Summary*:** Minority shareholders often have to contend with excessive extraction of firm value by powerful controlling shareholders, particularly in emerging markets. When this tension is considered as a zero-sum game in which every gain to controlling shareholders has to come from a loss to minority shareholders, controlling shareholders strongly resist any effort to empower minority shareholders. We propose an alternative approach to empower minority shareholders. A major reform of Chinese listed firms bestowed on minority shareholders decision rights to take certain actions that could *ex post* create a larger "pie" (firm value) for all shareholders. We find that controlling shareholders give away greater value *ex ante* to minority shareholders to induce more of these actions. Consequentially, minority

shareholders are more effectively empowered when they can affect firm value.

KEYWORDS

China, empowering minority shareholders, principal-principal conflict, value capture or appropriation, value creation

1 | INTRODUCTION

Protecting minority shareholders is a central issue in corporate governance (Guillen & Capron, 2015). Particularly in emerging market firms, controlling shareholders[1] commonly expropriate firm value to the detriment of minority shareholders through tunneling[2] (Bertrand, Mehta, & Mullainathan, 2002; Faccio, Lang, & Young, 2001). As a result, the literature suggests that empowering minority shareholders necessarily entails curbing controlling shareholders' opportunistic behavior (Rajagopalan & Zhang, 2012). However, such measures are rarely successful because they undermine the vested interests of—hence, evoke forceful resistance from—controlling shareholders who are economically and politically powerful (Morck, Wolfenzon, & Yeung, 2005; Yoshikawa & Rasheed, 2009). To alleviate this tension and to more effectively protect minority shareholders, our article examines an alternative way of empowering minority shareholders *without* directly fighting controlling shareholders to limit their power of capturing firm value (hence, it reduces their resistance).

We examine a policy instrument of empowering minority shareholders by giving them the decision right that affects certain opportunities for the firm to create more value in the future—even when controlling shareholders' abilities to misappropriate firm value remain strong. Our research context is a major corporate governance reform in China, in which unexpected changes in public policy suddenly created an option for controlling shareholders to make a one-time transfer of economic value to minority shareholders in exchange for their cooperation in a certain matter—and placed a clearly-specified "price tag" for failing to achieve such cooperation. Specifically, regulators aimed to achieve a change in the ownership structure of all listed firms that was desirable to these firms' controlling shareholders, but regulators mandated that this change would not occur unless minority shareholders also agreed to it. To obtain the minority shareholders' agreement, regulators stipulated that controlling shareholders of each listed firm must compensate the firm's minority shareholders, and the amount of compensation should be determined by negotiation between the two types of shareholders in each firm. The penalty for failing to reach an agreement would be to prohibit the firm from issuing

[1]Controlling shareholders of emerging market firms are not merely conventional block holders who hold large shares of firm equity, but they are further distinguished by two important features. First, they can exercise dominant control over firms' decisions, and second, they enjoy few checks on their discretion due to the weak rule of law and under-developed corporate governance frameworks that characterize many emerging markets (Rajagopalan & Zhang, 2012).

[2]Tunneling occurs because controlling shareholders, who fully control the firm's decisions (i.e., 100% of the control rights), but only a proportion of the firm's value created by these decisions (i.e., less than 100% of the residual rights), use this "gap" to transfer wealth from a partially owned firm to a fully owned firm without sufficiently compensating the former—thus, hurting the minority shareholders who co-own the former firm (Claessens, Djankov, Fan, & Lang, 2002; Johnson, La Porta, Lopez-de-Silanes, & Shleifer, 2000).

more equity in the stock market (i.e., equity financing) in the future. Therefore, the policy gave some power to minority shareholders to protect their own value vis-à-vis controlling shareholders.

Under what circumstances is this power greater? We argue that *the greater the extent to which minority shareholders' actions (here, is the approval or the denial of the reform) can influence firm value*, the more power minority shareholders have vis-à-vis controlling shareholders during the negotiation. It is important to note that minority shareholders' acceptance or denial of the reform per se does not directly increase firm value. Instead, it affects the firm's access to equity financing to fund future investment—which, in turn, is expected to create higher firm value when two conditions *coexist*: (a) that the firm expects to create higher returns from future investments, and (b) that the firm has limited means to fund these investments (i.e., it faces greater financial constraints) than when either condition is absent. Therefore, when both conditions coexist, higher firm value is at stake depending on whether the firm is able to access equity financing; hence, controlling shareholders—who are able to capture greater marginal returns from any increase of firm value than minority shareholders do—are willing to offer higher compensation to minority shareholders to obtain their approval of the reform.

Moreover, this effect does not hold to the same extent across the board. In certain firms, controlling shareholders are able to capture an even larger share of any increase of firm value through greater ownership gains (shareholding) and/or greater private gains (tunneling) than in other firms. Therefore, when the above two conditions coexist, controlling shareholders who expect to capture a larger proportion of firm value through either more ownership or greater private benefits are willing to offer even higher compensation to minority shareholders in order to obtain their approval of the reform—than other controlling shareholders who face the same two conditions but are able to capture a smaller proportion of firm value.

This article generates the following theoretical contributions. First, in the literature of the principal-principal conflict (which refers to the aforementioned tension between controlling and minority shareholders, see, e.g., Dharwadkar, George, & Brandes, 2000; Kim, Kim, & Lee, 2008), governance arrangements that aim to protect minority shareholders by mitigating the expropriation of controlling shareholders are often challenged by strong resistance from the powerful latter. This article is among the first to examine an alternative approach of empowering minority shareholders without directly fighting controlling shareholders, by way of letting minority shareholders influence the creation of value for the entire firm—which generates a larger "pie" for all types of shareholders of the firm. Hence, this approach results in a nonzero-sum game in which every gain to controlling shareholders does *not* necessarily have to come from a loss to minority shareholders, and vice versa.

Second, in the broader literature about block holders of firm shares, there exists a debate over whether block holders are "paragons" who protect firm value for all shareholders (e.g., Dharwadkar, Goranova, Brandes, & Khan, 2008; Kochhar & David, 1996) or "parasites" who behave opportunistically to protect their own private benefits at the expense of other shareholders (Bertrand et al., 2002; Dharwadkar et al., 2000; Johnson et al., 2000). We find that the two perspectives can be interdependent rather than antithetical in that controlling shareholders more generously compensated minority shareholders whose actions affected firm value *only when* controlling shareholders themselves were more capable of appropriating firm value.

2 | THEORY AND HYPOTHESES

2.1 | Research context: The ownership-split reform in China

Prior to 2005, every firm listed in China had two types of shares. The first type was comprised of "nontradable" shares that could not be traded on the stock market. By 2005, nontradable shares

accounted for an average of 63% of all firms' outstanding shares; for 88% of all listed firms, nontradable shares accounted for at least 50% of outstanding shares.

Nontradable shares were highly concentrated in the ownership of a small number of controlling shareholders that included the state, private firms, founding individuals, and families. Controlling shareholders exercised considerable control over the firm through their power to appoint a board of directors and directly influence strategic decisions. In an average firm in our sample, the largest nontradable shareholder held 70% of all nontradable shares of the firm (they were controlling shareholders), whereas the second largest nontradable shareholder held 16%, and the third largest nontradable shareholder held only 6% of all nontradable shares of the firm. The average ownership concentration index of top-ten nontradable shareholders was 0.60. Moreover, nontradable shareholders needed to agree among themselves before engaging in negotiation with minority shareholders in the reform (which we discuss next), so controlling shareholders' interests were aligned with all nontradable shareholders in this context. We therefore refer to nontradable shareholders as controlling shareholders in this article.

The second type of shares were comprised of "tradable" shares, which could be traded on the secondary market and were typically held by a diverse group of minority shareholders, including individual investors and institutional investors (Calomiris, Fisman, & Wang, 2010). Although different in their tradability, both types of shares had identical voting and cash flow rights. Nontradable shares were thought to create inefficiencies in corporate governance and to reduce a firm's value.[3]

On April 29, 2005, the central government of China and the China Securities Regulatory Commission launched a policy reform known as the ownership-split reform, or the liquidity reform, to eliminate nontradable shares. The reform policy required the owners of nontradable shares (i.e., controlling shareholders) in each listed firm to negotiate with the owners of tradable shares (i.e., minority shareholders) to determine the compensation paid by the former to the latter for the right to sell previously nontradable shares in the secondary stock market. All listed firms were required to engage in this equity contract renegotiation. A subsequent regulation also established the bargaining procedure that all listed firms must follow.[4] In essence, the government and regulators created a decision right and allocated it to minority shareholders.[5]

Furthermore, the reform policy stipulated that a listed firm that failed to reach a compensation agreement between controlling shareholders and minority shareholders would be prohibited from seeking more equity financing in the stock market. This penalty is significant because equity financing represents one of the most important means by which Chinese listed firms access external financing (Wu, 2003). Non-equity financing, which includes bank loans, internal financing, informal financing, and other forms of liquidation of assets, must adhere to specific constraints and challenges in China. First, because administrative quotas and governmental policies dominate the Chinese

[3]See Wu (2004) for detailed descriptions and Calomiris et al. (2010) for empirical evidence; see also Alchian (1965) and Jensen and Meckling (1979) for more general illustrations of this point.

[4]The subsequent policy was released on September 4, 2005, by the CSRC and was called "Measures for the Administration of the Share-trading Reform of Listed Companies." This legal document established the following bargaining procedure that a listed firm must follow in the reform. First, nontradable shareholders should generate a reform plan (a compensation plan). After consulting investment bankers and certain larger minority shareholders, the nontradable shareholders may then revise the compensation terms based on the feedback received to generate a final draft. Next, the final draft should go to a vote in a tradable shareholder meeting in which only the owners of tradable shares have the right to vote. If the final draft is approved by two-thirds of tradable shares owned by participating tradable shareholders, the reform should proceed accordingly. If the draft is not approved, then the nontradable shareholders should restart the procedure (for another round of negotiation).

[5]Allocating decision rights helps internalize a key negative externality on previously tradable shares. This externality arises because previously nontradable shares gain from greater liquidity once they become tradable, but at the cost of previously tradable shares: Releasing previously nontradable shares into the market results in a supply shock and depresses the stock price, which adversely affects the value of previously tradable shareholders.

banking sector, many firms (particularly privately owned firms) face considerable uncertainties and challenges in seeking bank loans (e.g., Allen, Qian, & Qian, 2007). Moreover, banks are reluctant to lend to listed firms that no longer have access to equity financing because these firms are typically considered financially challenged (e.g., Guo, 2000; Wu, 2003). Second, whereas internal financing is always possible, it is constrained by each firm's cash reserves. Finally, firms may also borrow via informal means or through unofficial financial institutions; however, such borrowing does not have the legal structure to support it, which increases risk and drives up costs, often exorbitantly.[6] Therefore, because of the significant value represented by the access to equity financing, the potential prohibition on equity financing motivated shareholders in most firms to actively reach an agreement to enable previously nontradable shares to be traded.

The policy did not force all firms to complete the reform by the timeline, but provided an incentive to complete it, or rather, a punishment for not completing the reform (i.e., to halt all equity financing by the firm until the reform is completed). Firms had the choice of completing the reform sooner or later. Take SANY Heavy Industry Co., Ltd (Ticker 600031), for example. On May 10, 2005, SANY proposed its first compensation plan, in which every 10 tradable shares would receive 3 shares that were previously held by nontradable shareholders and 8 yuan in cash transferred from nontradable shareholders. After collecting feedback from minority shareholders, on May 25, 2005, SANYI increased the compensation such that every 10 tradable shares would receive 3.5 shares and 8 yuan in cash. On June 10, 2005, a minority shareholder voting meeting approved the revised compensation plan.

While the shortest time taken to reform was 49 days, the median firm took 353 days, and about 50 firms did not complete the reform by the official deadline but took much longer. Delays of the reform often resulted from unsatisfied tradable shareholders forcing firms to increase compensation through multiple rounds of negotiation. Out the 1,040 firms in our sample, 882 of them (accounting for 84.81%) experienced at least two rounds of negotiation. For these 882 firms, the compensation ratio finally approved by the minority shareholders was higher than the compensation ratio proposed by the controlling shareholders in the initial round. A prominent example was the Shanghai Petroleum (Ticker 600,688). After several low compensation plans proposed by the firm were repeatedly rejected by its tradable shareholders, the firm finally raised the compensation high enough to obtain tradable shareholders' approval and completed the reform in January 2008 (after the deadline suggested by the policy).

2.2 | Hypotheses

We argue that when minority shareholders are able to undertake certain actions that enable the firm to create greater value, it is in the best interest of controlling shareholders to provide incentives to minority shareholders *ex ante* in order to induce them to invest more effort in undertaking these actions for the following reasons.

These actions *ex post* contribute to a larger "pie" (firm value) for all shareholders. Although minority shareholders themselves will also benefit from increased firm value through their ownership shares, they own much smaller ownership shares of the firm than controlling shareholders do. Therefore, their actions generate lower marginal returns for themselves than for controlling shareholders. (Here, the marginal returns to a shareholder refer to the incremental value for the shareholder

[6]For example, according to research by China's central bank in Wenzhou, one of the best known entrepreneurial cities, firms that borrowed outside the banking system typically paid interest rates of 10% for 30 days or 214% for a year. ("Let a million flowers bloom." *The Economist*, March 10, 2011).

that is generated by each additional unit of effort that minority shareholders exert in undertaking the actions of interest).

Worse still, the marginal returns that minority shareholders expect to capture from any increase of firm value may be even lower than those determined by their ownership shares owing to tunneling by controlling shareholders. As a result of tunneling (which we define in Footnote 2), minority shareholders only get to divide, according to their ownership shares, what remains of the "pie" after controlling shareholders tunnel some wealth out of the firm (Tirole, 2006).

Therefore, controlling shareholders capture higher marginal returns from any increase in firm value than minority shareholders do. In the absence of additional incentives, minority shareholders will underinvest in these value-enhancing activities compared with the level desired by controlling shareholders. To induce minority shareholders to increase their effort invested in these activities, controlling shareholders needed to compensate minority shareholders. The larger the economic incentives controlling shareholders give to minority shareholders, the more the latter invest in these activities to approach the former's desired level. Therefore, *the greater the extent to which minority shareholders' actions can influence a firm's value* ex post*, the more value controlling shareholders concede to minority shareholders* ex ante.

In our research context, minority shareholders' acceptance or denial of the reform determines the firm's access to equity financing. The access to equity financing will increase firm value when two conditions *coexist*: (a) that the expected value of the firm's business activities in the future is high, and (b) that the availability of alternative sources for financing these activities other than equity refinancing is limited. Both conditions are critical. If the firm's business activities are not expected to generate much returns, and thus, condition (a) does not hold, then the availability of additional funding channels alone will not create value. If the firm can use non-equity financing means to fund its investments, and thus, condition (b) does not hold, then the firm can continue carrying out value-enhancing business activities without seeking equity financing, which renders obtaining minority shareholders' approval less important. Therefore, both are *necessary conditions* for minority shareholders' approval of the reform to lead to greater future value of the firm, but *neither one alone* is a sufficient condition for this outcome.

Therefore, in the firms where both conditions hold, controlling shareholders offer higher compensation to minority shareholders than in other firms where either condition is absent. This conclusion is captured in Hypothesis 1:

> **Hypothesis 1 (H1)** *In China's ownership-split reform, all else being equal, firms that are expected to create more value in future business activities and face greater financing constraints will provide higher levels of compensation to minority shareholders.*

Hypothesis 1 captures an average effect across the board when other conditions are held constant. If we allow controlling shareholders' abilities to capture firm value to vary, then the magnitude of the effect captured by Hypothesis 1 will change accordingly. Next, we argue that when controlling shareholders are able to capture larger shares of any given increase of firm value, their incentives to obtain minority shareholders' approval will become stronger—even when such approval increases firm value to the same extent—hence, these controlling shareholders, when facing the two conditions specified in Hypothesis 1, are willing to offer even higher compensation to make the approval happen.

First, from the controlling shareholders' perspective, their willingness to compensate minority shareholders to induce certain actions *ex ante* critically depends on these controlling shareholders' assessment of how much firm value themselves could appropriate *ex post* as a result of these actions.

Therefore, when minority shareholders' actions can indeed increase firm value (i.e., when both conditions in H1 hold), the higher the proportion of firm value controlling shareholders are able to capture *ex post*, the higher the marginal returns generated by these actions for controlling shareholders, thus the more generously controlling shareholder will compensate the minority shareholders to incentivize those actions *ex ante*.

Second, from the minority shareholders' perspective, a higher proportion of firm value captured by controlling shareholders by definition indicates a lower proportion of firm value remaining for themselves, which further reduces the marginal returns accruing to minority shareholders from taking any value-enhancing action. Therefore, minority shareholders will underinvest in these value-enhancing activities to an even greater degree compared with the level desired by controlling shareholders; hence, controlling shareholders need to offer even higher compensation to induce minority shareholders to take these actions.

For both reasons, when firm value can be increased owing to minority shareholders' actions, and when controlling shareholders expect to capture a larger proportion of this increase of firm value, controlling shareholders will give the highest value to minority shareholders to incentivize these actions than when any of the above conditions is absent. Put alternatively, *greater abilities of controlling shareholders to capture firm value amplify the positive relationship between the extent to which minority shareholders' actions create firm value* ex post *and the amount of compensation controlling shareholders give to minority shareholders* ex ante.

Two key factors determine controlling shareholders' abilities to capture firm value: the ownership benefits and the private benefits (e.g., Claessens, Djankov, & Lang, 2000; Dharwadkar et al., 2000; Kim et al., 2008; Morck et al., 2005). The ownership benefits to shareholders are determined by the proportion of the firm's value to which the shareholders are legally entitled based on their ownership stake. Above and beyond their ownership gains, controlling shareholders also obtain private benefits through tunneling, that is, by illegally expropriating firm value at the expense of minority shareholders. Hence, both larger ownership stakes owned by controlling shareholders and greater private benefits that controlling shareholders are able to expropriate positively moderate the relationship in Hypothesis 1, as captured by Hypotheses 2 and 3:

> **Hypothesis 2 (H2)** *The greater the ability of controlling shareholders to extract private benefits, the stronger the effect predicted in Hypothesis 1.*

> **Hypothesis (H3)** *The higher the ownership stake of controlling shareholders in the firm, the stronger the effect predicted in Hypothesis 1.*

For each hypothesis, we summarize the general theory, the core mechanism, and the manifestation in the research context in Table 1. Finally, as an alternative way to demonstrate the above logic, in the online appendix, we develop a biform game following Brandenburger and Stuart (1996, 2007), which is a common tool to analytically demonstrate the tension between value creation and value appropriation.

3 | METHODS

3.1 | Data and measures

Our sample included all listed firms whose controlling shareholders used stock grants or stock grants plus cash to compensate the minority shareholders to complete the reform, which accounted for the

TABLE 1 Summary of theory and hypotheses

General theory	Key mechanism	Manifestation of key constructs in research context	Hypothesis
The greater the extent to which minority shareholders' actions can influence a firm's value ex post*, the more value controlling shareholders concede to minority shareholders* ex ante.	(Main effect) An average controlling shareholder captures higher marginal returns from any increase in firm value than minority shareholders do. Therefore, without being compensated, minority shareholders would underinvest in activities that would increase firm value, compared with the level desired by controlling shareholders. To induce minority shareholders to increase their effort invested in these activities, controlling shareholders need to compensate minority shareholders.	(1) *Minority shareholders' action* is the approval or denial of reform; (2) *The extent to which this action affects firm value* ex post *is higher* when the firm expects to generate greater value via future activities *and* faces greater financial constraints in funding these activities; (3) *Controlling shareholders gives value to minority shareholders* ex ante in the form of issuing compensation.	H1: In China's ownership-split reform, all else being equal, firms that are expected to create more value in future business activities *and* face greater financing constraints will provide higher levels of compensation to minority shareholders.
Greater abilities of controlling shareholders to capture firm value amplify the positive relationship between the extent to which minority shareholders' actions create firm value ex post *and the amount of compensation the controlling shareholders give to minority shareholders* ex ante.	(Moderating effect) Instead of considering an average controlling shareholder, we allow controlling shareholders to vary based on the proportion of firm value they are able to capture. A higher proportion of firm value captured by controlling shareholders (a) further increases controlling shareholders' marginal returns from any increase in firm value, and (b) further decreases minority shareholders' marginal returns from any increase in firm value. Both effects strengthen the core mechanism that drives the main effect. Therefore, the main effect in H1 is stronger when controlling shareholders capture higher firm value.	*Controlling shareholders have greater abilities to capture firm value* because they can tunnel more (aka reap higher private benefits). *Controlling shareholders have greater abilities to capture firm value* because they have more ownership shares.	H2: The greater the ability of controlling shareholders to extract private benefits, the stronger the effect predicted in Hypothesis 1. H3: The higher the ownership stake of controlling shareholders in the firm, the stronger the effect predicted in Hypothesis 1.

majority (84%) of all listed firms.[7] To measure compensation levels, we manually collected and coded the reform plan for each firm.[8] We obtained each firm's pre-reform-year financial data, stock price data, and ownership data from GTA, a Shenzhen-based data vendor that compiles detailed

[7]Among 1,238 total listed firms, 152 firms used different methods to compensate minority shareholders, including offering call or put warrants, guaranteeing stock buy-backs at preset prices, and/or canceling a fraction of nontradable shares. This left 1,086 firms that used stock grants (or stock grants plus cash) as compensation. Firms that did not use stock transfers (or stock transfers plus cash) did not report the compensation ratios (discussed next). We then excluded 50 firms that did not have the financial information required to conduct the analysis. Consequently, the final sample used in our empirical analysis includes 1,040 firms.

[8]Although several databases claim to have compiled compensation ratios for listed firms, they contain many coding errors (see Haveman & Wang, 2013, for a discussion of this issue). Therefore, we manually collected the data directly from the compensation plans. Firms' compensation plans are available on their websites and at finance.sina.com.cn.

stock-trading information and financial statements for Chinese-listed firms (some of the GTA data are now available via the Wharton Research Data Services [WRDS]).

3.1.1 | Dependent variable

Each firm reached only one compensation agreement. To indicate the value of the compensation, each firm calculated and reported a "compensation ratio" in its compensation agreement that must be agreed to by controlling and minority shareholders. The compensation ratio was defined as the total number of formerly nontradable shares (owned by controlling shareholders) transferred to the ownership of tradable shareholders (owned by minority shareholders) as compensation, divided by the number of previously tradable shares. When cash grants were used alone or in combination with stock grants, the firm converted the cash value into an equivalent amount of stock using the pre-reform stock price to calculate an overall compensation ratio. For example, if a listed firm has 80 nontradable shares and 20 tradable shares and the compensation ratio is set at 0.35, the nontradable shareholders (i.e., controlling shareholders) will then transfer $20 \times 0.35 = 7$ shares to all tradable shareholders (i.e., minority shareholders) as compensation, which are then equally distributed among the 20 tradable shares. As a result, after the reform, the former nontradable shareholders hold a total of 73 shares, which become tradable in the secondary stock market.

Therefore, the compensation ratio indicates the amount of previously nontradable shares transferred to each tradable share as compensation such that a higher compensation ratio indicates greater compensation paid by controlling shareholders to minority shareholders. Thus, we use *Compensation ratio* as the dependent variable. To ensure that the results are not merely driven by outliers, we winsorized the *Compensation ratio* at both the 1st and 99th percentiles.

Finally, note that *Compensation ratio* is a continuous variable that is *not* bounded between 0 and 1. The *Compensation ratio* ranges from 0.05 to 1.27 across the firms in the sample. Controlling shareholders can agree to compensation ratios that are larger than one; for example, the maximum was 1.27, which means that if a minority shareholder owned 100 tradable shares of the focal firm prior to the reform, the controlling shareholders then gave the minority shareholder 127 formerly nontradable shares as compensation during the reform—as a result, this minority shareholder would own 227 shares after the reform.

3.1.2 | Key explanatory variables

To measure the expected returns from the firm's future business operations, we used the firm's Tobin's Q, which is calculated by dividing the firm's market valuation by the firm's book value (divided by 100). Tobin's Q is commonly used to capture the expected value of future business opportunities. The q-theory approach was pioneered by Tobin (1969), and subsequently extended by Hayashi (1982). It is based on a straightforward arbitrage argument that the firm will invest when the ratio of the market valuation of a firm's capital stock to its replacement value exceeds one (for a classic review, see Hubbard, 1998, and Erickson & Whited, 2000). A higher Tobin's Q indicates that the firm expects to create higher value from future investments.[9]

[9]To capture the theoretical construct of expected returns of firms' future investment, Tobin's Q has multiple advantages compared with actual accounting measures of future performance such as future return on investment (ROI). First, the future ROI is constructed by dividing net profits by the total investment, as net profits are generated by both "old" (pre-reform) investment and "new" (post-reform) investment—but the measure does not distinguish the value created by the post-reform investment. Therefore, ROI would confound pre-reform and post-reform effects. By contrast, Tobin's Q only reflects the expected future value. Second, the return to investment may not even distributed in future years and may experience lags depending on the nature of the investment projects and accounting practices, so the variation of ROI in each future year may not accurately reflect changes in the value created by investments. By contrast, Tobin's Q incorporates the anticipation of the sum of all future returns. Finally, minority shareholders cannot observe the future

We use the *K-Z Index*, which was initially developed by Kaplan and Zingales (1997), subsequently formulated by Lamont, Polk, and Saa-Requejo (2001), and is commonly used in both research and practice in finance to capture firms' overall financing constraints. The *K-Z Index* is constructed from a model that predicts the probability that a firm becomes financially constrained based on debts (including bank loans), cash flow, market value, dividends, and cash holding, all scaled by total assets. A higher value of the *K-Z Index* indicates more severe overall financing constraints faced by the firm.

Recall that Hypothesis 1 examines the case in which both *Tobin's Q* is higher and *K-Z Index* larger. In this particular case, the multiplicative term between *Tobin's Q* and *K-Z Index* should be greater. Therefore, we use the estimated effect of the interaction term to capture the estimated effect of the co-existence of the two conditions on the compensation ratio, to test Hypothesis 1 (thus, the higher the value of this multiplicative term is, the higher the compensation ratio).

To test the moderating effect of the ownership benefits and the private benefits of controlling shareholders (H2 and H3), we construct the following variables. *Nontradables* refers to the proportion of nontradable shares among all outstanding shares, which is a direct measure of controlling shareholders' ownership benefits.

Control-cash gap is a common measure of the extent to which large shareholders in the firm can reap private gains, following the method initially developed by Claessens et al. (2002) and widely used in the literature to measure pyramidal governance structures (e.g., Bertrand et al., 2002; Faccio et al., 2001). The *Control-cash gap* intends to measure the controlling shareholder's power in the pyramidal structure,[10] and we construct it following the standard procedure (e.g., Claessens et al., 2002) described as follows. First, we analyze ultimate ownership and control patterns for each listed firm. For each firm, we identify its controller, which is mandated to be disclosed in each firm's annual report. Next, based on the ownership chain of the controller, we calculate its cash flow rights and control rights. Suppose that firm A owns 60% of firm B, which in turn, owns 40% of the stock of firm C. We then say that firm A controls 40% of firm C, the weakest link in the chain of control rights. By contrast, we say that firm A owns $60 \times 40\% = 24\%$ of the cash flow rights of firm C. We then calculate the *Cash-control gap* as follows: $40 - 24\% = 16\%$. Essentially, we distinguish cash flow rights and control rights based on the information on pyramid structures and crossholdings among firms.

3.1.3 | Control variables

We control for other factors found by previous studies to influence shareholder compensation (Calomiris et al., 2010; Firth, Lin, & Zou, 2010; Li, Wang, Cheung, & Jiang, 2011; Liu & Tian, 2012). We construct four variables to control for ownership concentration. *Con_nontradables* is the top-ten concentration index—the C(10) index is calculated by summing the square terms of the percentage of nontradable shares owned by the top-ten nontradable shareholders (or all nontradable shareholders for firms with less than ten nontradable shareholders) and measures the degree of concentration among nontradable shares. *Con_tradables* is the C(10) index of tradable shareholding that is calculated by summing the square terms of the percentage of tradable shares owned by each of the top-ten tradable shareholders. This variable measures the degree of

ROI at the time of the negotiation, but they did observe Tobin's Q at the time of the reform. Thus they cannot propose a negotiation strategy/plan based on something they don't observe yet. All the explanatory variables we use to explain the compensation ratio should be observable to all parties in the negotiation.

[10]Outside the United States and the United Kingdom, pyramidal control structures frequently enable controlling shareholders to manipulate firms without making a commensurate capital investment, which results in a lower quality corporate governance (Morck et al., 2005).

concentration among tradable shares. Note that although *Nontradables* is a moderator to test Hypothesis 2, its direct effect on the *Compensation ratio* may capture the capacity of nontradable shareholders to use share transfers to compensate tradable shareholders. We include *State-controlled* to indicate if the state is the controlling shareholder because state-controlled firms may also pursue goals other than value maximization as discussed in the following (Firth et al., 2010; Li et al., 2011). We control for the firm's pre-reform return on assets (ROA). In addition, following the illiquidity-based asset pricing models (e.g., Kahl, Liu, & Longstaff, 2003), we include the following three variables to control for liquidity effects: *Volatility*, which refers to the standard error of the daily stock return for the year immediately preceding the reform date; *Past returns*, which refers to the average daily stock return for the year immediately preceding the reform date; and *Turnover*, which refers to the average daily stock turnover for the year immediately preceding the reform date. We also include *Log(Duration)*, the logarithm of the time interval (measured in days) between the reform start date (April 29, 2005) and the date of the shareholder meeting on which the firm passed its reform plan.

To control for the isomorphism effect (Haveman & Wang, 2013), we include the following four variables: (a) the average (mean) compensation ratios set by other firms in the same region that had already reformed their ownership; (b) the average (mean) compensation ratios set by other firms in the same industry that had already reformed their ownership; (c) the average (mean) compensation ratio set by the firms with which the focal firm was interlocked through board membership; and (d) the average (mean) compensation ratio set by other firms that used the same investment bank. Finally, collinearity diagnostics show that the mean VIF is 1.37, and none of the variables has a VIF value larger than 3; hence, multicollinearity does not pose a problem. Table 2 reports the summary statistics and correlations.

3.2 | Estimation method

To test Hypothesis 1, we use OLS regression models to examine the combined effect of the firm's effectiveness in creating value (*Tobin's Q*) and its financing constraints (*K-Z Index)* on the *Compensation ratio* paid by controlling shareholders to minority shareholders. We first estimate the model specified below for the full sample:

$$\begin{aligned} \textit{Compensation ratio}_j = {} & a_1\, \textit{K-Z Index}_j \times \textit{Tobin's\_Q}_j + a_2\, \textit{K-Z Index}_j + a_3\, \textit{Tobin's\_Q}_j \\ & + \boldsymbol{b}\, \textit{Controls}_j + \boldsymbol{d_1}\ \text{SIC3-Industry fixed effects} + \boldsymbol{d_2}\ \text{year fixed effects} + \varepsilon_j, \end{aligned} \tag{1}$$

where j indicates firm j, a_i $(i = 1,2,3)$ indicates a coefficient and $\boldsymbol{b}$, $\boldsymbol{d_1}$, and $\boldsymbol{d_2}$ indicate vectors of coefficients. *Controls* includes all control variables.

We adopt two approaches to test Hypotheses 2 and 3 (that is, the moderating conditions under which the combined effect of interest [*K-Z Index*$_j$ × *Tobin's_Q*$_j$] on the *Compensation ratio*$_j$ will be stronger or weaker). We first conduct subsample analysis by estimating the model specified in Equation (1) in two sets of subsamples that are determined based on the median values of *Nontradables* and *Control-cash gap*, respectively. Subsample analysis has the advantage of allowing (but not forcing) the estimates of all explanatory variables to vary based on the value of the moderator. We then present the results of including a three-way interactions term in a single model (as well as all two-way interaction terms of the constitutive variables, and the constitutive variables on their own). We report robust standard errors throughout.

TABLE 2 Correlations

	Variable	Mean	Std Dev	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	*Compensation ratio*	0.31	0.08	1.00															
2	*Tobin's Q*	0.02	0.03	0.02	1.00														
3	*K-Z Index*	0.01	0.02	0.06	0.44	1.00													
4	*Nontradables*	0.63	0.11	0.48	0.10	−0.05	1.00												
5	*Con_nontradables*	0.60	0.27	0.06	−0.02	−0.06	−0.04	1.00											
6	*Con_tradables*	0.01	0.03	−0.09	0.01	−0.03	−0.03	0.02	1.00										
7	*ROA*	0.72	0.45	0.12	−0.06	−0.06	0.04	0.27	0.02	1.00									
8	*Turnover*	0.01	0.09	−0.09	−0.57	−0.52	0.03	0.03	0.05	0.10	1.00								
9	*Volatility*	0.01	0.01	0.08	0.02	−0.15	0.13	−0.11	−0.01	−0.08	0.07	1.00							
10	*Past returns*	0.02	0.00	0.12	0.08	0.07	0.11	−0.14	0.05	−0.07	−0.18	0.55	1.00						
11	*State-controlled*	0.00	0.00	−0.11	−0.06	−0.19	0.03	0.08	0.09	0.02	0.36	0.04	−0.30	1.00					
12	*Log(duration)*	5.82	0.41	−0.19	0.18	0.24	−0.15	−0.09	0.02	0.12	−0.34	−0.22	0.02	−0.24	1.00				
13	*Control-cash gap*	0.07	0.10	−0.05	0.00	0.05	0.02	0.04	0.01	−0.33	−0.06	−0.02	0.03	−0.02	−0.01	1.00			
14	*Average CR of firms in same province*	0.31	0.03	0.12	−0.07	−0.08	0.10	0.05	−0.02	−0.10	0.14	0.08	−0.01	0.09	−0.36	0.06	1.00		
15	*Average CR of firms in same industry*	0.31	0.04	0.04	−0.04	−0.01	−0.01	0.05	−0.04	0.01	0.01	−0.01	0.04	0.04	−0.09	0.02	0.12	1.00	
16	*Average CR of interlocked firms*	0.32	0.03	0.07	−0.08	−0.04	0.02	0.10	0.03	−0.02	0.08	0.05	−0.03	0.09	−0.28	0.05	0.15	0.03	1.00
17	*Average CR of firms served by same investment bank*	0.32	0.03	0.12	−0.01	0.02	0.05	0.02	−0.02	−0.05	0.02	0.14	0.10	−0.04	−0.23	0.03	0.06	0.11	0.05

3.3 | Methodological advantages of the empirical context

Our empirical setting has advantages that make it particularly appropriate to test our hypotheses. First, despite an ongoing general discussion about eliminating nontradable shares, the regulations containing the details of how the reform should proceed (including the mandate that shareholders negotiate over compensation) were launched unexpectedly and with little consultation from the relevant parties, such as firms, investors, and financial intermediaries. The procedure also allowed little opportunity for lobbying, which is generally the case for public policymaking in China (Calomiris et al., 2010). The exogenous policy shock instigated bargaining and required that all listed firms participate in the bargaining, which alleviates concerns over reverse causality and sample-selection bias.

Second, it is commonly difficult to obtain a direct and systematic measure of how cooperative shareholders are across different firms. However, in this context, the amount of compensation agreed on represents how conciliatorily the controlling shareholders behaved by transferring their own wealth to minority shareholders. These agreements are observable, standardized, and comparable across all firms. Higher compensation paid by controlling shareholders to minority shareholders directly indicates that the former are (*ex ante*) giving more value to the latter.

4 | RESULTS

In Table 3, Models (1) and (2) contain the control variables, and Model (3) adds the key explanatory variables of interest (i.e., the multiplicative term of *K-Z Index* times *Tobin's Q*) in the full sample. The multiplicative term of *K-Z Index* times *Tobin's Q* is positive and statistically significant ($P < 0.01$). In a scenario that meets the join conditions that both *K-Z Index* and *Tobin's Q* are of higher value (one standard deviation above their respective mean values), the predicted compensation ratio is 0.052; this predicted value is higher by a magnitude of 0.065 than the predicted compensation ratio (−0.013) when both *K-Z Index* and *Tobin's Q* are at their mean values. This magnitude of the difference (0.065) represents a 21% increase of the compensation ratio compared with the average compensation ratio in the sample which is 0.31. In other words, when the firm both faces higher-than-average financing constraints (by one standard deviation above the mean value) and expects to generate greater-than-average value from future investment (by one standard deviation above the mean value), controlling shareholders are willing to offer 21% more compensation to minority shareholders than in the average case, in order to persuade the latter to agree to the reform. This result is consistent with the prediction of Hypothesis 1.

We then examine the prediction in Hypothesis 2, which is that the main effect of Hypothesis 1 is stronger when controlling shareholders can reap greater private benefits as measured by *Control-cash gap*. We first conduct a subsample analysis in Models (1) and (2) of Table 4. In the subsample of firms in which controlling shareholders capture higher private gains (*Control-cash gap* ≥ median level, Model [2]), the multiplicative term (*K-Z Index* times *Tobin's Q*) is positive and statistically significant ($P < 0.05$), which is consistent with the results that are generated in the full sample and reported in Model (3) in Table 2. In this subsample, when both *K-Z Index* and *Tobin's Q* are of higher value (one standard deviation above their respective mean values), the predicted compensation ratio is greater, by a magnitude of 0.058, than the predicted compensation ratio when both *K-Z Index* and *Tobin's Q* are at their mean values. This difference represents a 19% increase of the compensation ratio compared with the average compensation ratio in the full sample.

By contrast, the estimated effect of the multiplicative term (*K-Z Index* times *Tobin's Q*) turns negative for the subsample of firms in which controlling shareholders capture lower private gains

TABLE 3 Analysis of the Compensation ratio

DV: *Compensation ratio*	**(1)**	**(2)**	**(3)**
Sample	Full sample	Full sample	Full sample
K-Z Index × Tobin's Q			2.41
			(0.69)
K-Z Index		0.43	0.24
		(0.18)	(0.17)
Tobin's Q		−0.31	−0.80
		(0.10)	(0.17)
Nontradables	0.31	0.32	0.33
	(0.02)	(0.02)	(0.02)
Con_nontradables	0.01	0.01	0.01
	(0.01)	(0.01)	(0.01)
Con_tradables	−0.17	−0.16	−0.16
	(0.05)	(0.05)	(0.05)
State-controlled	0.02	0.02	0.02
	(0.01)	(0.01)	(0.01)
ROA	−0.13	−0.16	−0.15
	(0.03)	(0.05)	(0.05)
Turnover	−0.23	−0.07	−0.10
	(0.24)	(0.22)	(0.22)
Volatility	0.82	0.60	0.77
	(0.61)	(0.58)	(0.58)
Past returns	−6.06	−5.12	−4.72
	(1.79)	(1.72)	(1.68)
Log(duration)	−0.03	−0.03	−0.03
	(0.01)	(0.01)	(0.01)
Control-cash gap	−0.03	−0.04	−0.04
	(0.02)	(0.02)	(0.02)
Average CR of firms in same province	0.14	0.14	0.13
	(0.07)	(0.07)	(0.07)
Average CR of firms in same industry	0.01	0.01	0.02
	(0.05)	(0.05)	(0.05)
Average CR of interlocked firms	0.04	0.03	0.03
	(0.06)	(0.06)	(0.06)
Average CR of firms served by same investment bank	0.10	0.09	0.09
	(0.07)	(0.07)	(0.07)
Year-fixed effects	Yes	Yes	Yes
Industry-fixed effects	Yes	Yes	Yes
Constant	0.16	0.19	0.18
	(0.09)	(0.08)	(0.08)
Observations	1,040	1,040	1,040
R-squared	0.32	0.33	0.34

Note. Robust standard errors in parentheses.

TABLE 4 Analysis of the Compensation ratio: Moderating effect of private benefits

DV: *Compensation ratio*	**(1)**	**(2)**	**(3)**
Sample	Subsample analysis	Subsample analysis	Full sample
	Low Control-cash gap	High Control-cash gap	
K-Z Index × *Tobin's Q*	−12.96	2.03	−12.62
	(6.58)	(0.97)	(7.14)
K-Z Index × *Tobin's Q* × *Control-cash gap*			14.76
			(7.13)
Tobin's Q × *Control-cash gap*			0.05
			(0.29)
K-Z Index × *Control-cash gap*			−0.60
			(0.33)
K-Z Index	0.64	0.22	0.74
	(0.24)	(0.25)	(0.25)
Tobin's Q	−0.82	−0.70	−0.76
	(0.21)	(0.23)	(0.21)
Nontradables	0.28	0.37	0.33
	(0.03)	(0.03)	(0.02)
Con_nontradables	0.01	0.01	0.01
	(0.01)	(0.02)	(0.01)
Con_tradables	−0.17	−0.14	−0.16
	(0.07)	(0.06)	(0.05)
State-controlled	0.01	0.02	0.02
	(0.01)	(0.01)	(0.01)
ROA	−0.17	−0.16	−0.16
	(0.04)	(0.08)	(0.05)
Turnover	−0.12	−0.15	−0.07
	(0.24)	(0.33)	(0.22)
Volatility	0.25	1.35	0.79
	(0.69)	(0.89)	(0.58)
Past returns	−4.60	−4.21	−4.54
	(1.72)	(2.83)	(1.67)
Log(duration)	−0.03	−0.03	−0.03
	(0.01)	(0.02)	(0.01)
Control-cash gap	76.57	0.00	−0.01
	(155.62)	(0.03)	(0.01)
Average CR of firms in same province	0.08	0.18	0.12
	(0.08)	(0.13)	(0.07)
Average CR of firms in same industry	0.03	0.13	0.08
	(0.09)	(0.11)	(0.07)
Average CR of interlocked firms	0.08	−0.05	0.02
	(0.05)	(0.08)	(0.05)
Average CR of firms served by same investment bank	0.02	0.07	0.03
	(0.07)	(0.09)	(0.06)
Year-fixed effects	Yes	Yes	Yes
Industry-fixed effects	Yes	Yes	Yes

TABLE 4 (Continued)

DV: *Compensation ratio*	(1)	(2)	(3)
Constant	0.22	0.13	0.19
	(0.09)	(0.14)	(0.08)
Observations	520	520	1,040
R-squared	0.38	0.34	0.34

Note. Robust standard errors in parentheses.

(*Control-cash gap* < median, Model [1]). In this subsample, when both *K-Z Index* and *Tobin's Q* are of higher value (one standard deviation above their respective mean values), the predicted compensation ratio is *smaller*, by a magnitude of 0.038, than the predicted compensation ratio when both *K-Z Index* and *Tobin's Q* are at their mean values. This difference represents a 12% decrease of the compensation ratio compared with the average compensation ratio in the full sample.

A Chow test rejects the equality of the coefficients of the multiplicative term (*K-Z Index* times *Tobin's Q*) that are generated in the two subsamples reported in Models (1) and (2) ($P < 0.01$). Therefore, this set of subsample analysis lends support to Hypothesis 2 according to which the positive combined effect of firm's future value and its financial constraints on the compensation ratio should be stronger when the controlling shareholders can reap greater private benefits.

Moreover, this set of results also generates interesting new insights. Instead of showing that the estimated effect of the interaction term of interest holds across both subsamples and only varies in magnitude, the results demonstrate that the estimated effect of the interaction term is *only* positive in the subsample of controlling shareholders who can reap higher private benefits, but not in the other subsample. Therefore, these results show that controlling shareholders are willing to compensate minority shareholders whose action can increase firm value *only* when they expect to capture large private benefits, but controlling shareholders are not willing to do so when they expect to capture limited private benefits.

As an alternative way to test Hypothesis 2, Model (3) in Table 4 reports the full model that includes the three-way multiplicative term, two-way multiplicative terms, all constitutive variables, and the control variables. The three-way multiplicative term *K-Z Index*×*Tobin's Q* × *Control-cash gap* is positive and statistically significant ($P < 0.05$), which suggests that the main effect of Hypothesis 1 (i.e., the positive interaction effect of *K-Z Index* and *Tobin's Q* on the rate of compensation) is larger in magnitude when the gap between control and cash flow rights is greater. These results also corroborate Hypothesis 2.

Next, we test Hypothesis 3 according to which the positive combined effect of firm's future value and its financing constraints on the compensation ratio is stronger when controlling shareholders of the firm have larger shares of firm ownership as measured by the proportion of nontradable shares (*Nontradables*). Models (1) and (2) of Table 5 report the subsample analysis by analyzing the main model (Model [3] of Table 3) in the subsamples of firms divided based on the median value of *Nontradables*. The results show that the multiplicative term of *Tobin's Q* times *K-Z Index* remains positive and statistically significant ($P < 0.01$) when controlling shareholders hold more ownership shares (in the subsample where *Nontradables* ≥ median level, Model [2]) but it does not reach statistical significance when controlling shareholders hold fewer ownership shares (in the subsample where *Nontradables* < median level, Model [1]).

In the subsample of firms whose controlling shareholders own more shares (*Nontradables* ≥ median level, Model [2]), when both *K-Z Index* and *Tobin's Q* are of higher value (one standard deviation above their respective mean values), the predicted compensation ratio is greater, by a

magnitude of 0.149, than the predicted compensation ratio when both *K-Z Index* and *Tobin's Q* are at their mean values. This difference represents a 48% increase of the compensation ratio compared with the average compensation ratio in the entire sample. By contrast, in the subsample of firms whose controlling shareholders own less shares (*Nontradables* < median level, Model [1]), when both *K-Z Index* and *Tobin's Q* are of higher value (one standard deviation above their respective mean values), the predicted compensation ratio is smaller, by a magnitude of 0.029, than the predicted compensation ratio when both *K-Z Index* and *Tobin's Q* are at their mean values. This difference represents a 9.2% decrease of the compensation ratio compared with the average compensation ratio in the entire sample.

While these results are consistent with Hypothesis 3, a Chow test, which indicates whether the coefficients estimated in one subgroup of the data are equal to the coefficients estimated in another, fails to reject the equality of the coefficients of the multiplicative term (*K-Z Index* times *Tobin's Q*) generated in the two subsamples at conventional statistical significance level ($P > 0.10$), thus weakening the support for Hypothesis 3.

Model (3) in Table 5 includes the three-way multiplicative term, *K-Z Index* ×*Tobin's Q*× *Nontradables*, as well as all two-way interaction terms and the constitutive variables. The triple interaction term is positive, but fails to be statistically significant at conventional levels ($P > 0.10$). While the higher standard errors of the three-way interaction effects possibly result from their higher collinearities with two-way interaction terms and the constitutive variables, it is important to note that the estimation of the triple interaction term in a single model relies on a more stringent assumption than subsample analysis. The former approach forces the effects of all other explanatory variables to be uniform regardless of the level of the moderator (*Nontradables*), whereas subsample analysis *allows* (but does not require) the estimated effect of any other explanatory variables to differ for firms with higher or lower levels of *Nontradables.* Therefore, the approach of including a triple interaction term in a single model represents a special case of the subsample analysis. In general, the empirical results lend limited support for Hypothesis 3.

The results are robust to including the logarithm of the firm's total assets as an alternative proxy for firm size as well as two additional measures that capture the effect of bank loans on the firm's bargaining power: the logarithm of the value of bank loans in the year prior to the firm's reform and the logarithm of the value of bank loans in the year prior to announcement of the reform policy. Second, our results are also robust to the inclusion of the total shares owned by mutual funds (which mostly own tradable shares) in each listed firm to control for potential agency problems in the bargaining process identified in prior studies (Firth et al., 2010). Third, while it is possible that attributes of the board of directors may affect the negotiation process, our results are robust to the inclusion of board size (total numbers of directors), the ratio of independent directors on the board, and the political connections of the board (with an indicator as to whether any board member worked as a high-ranking government official).

To summarize, our results suggest that controlling shareholders more generously compensate minority shareholders (to obtain their approval to complete the reform, hence the access to future equity financing) when the firm is expected to create greater value through business activities, but faces greater constraints in financing these activities, which supports Hypothesis 1. Moreover, the controlling shareholders are only willing to do so when they expect to achieve higher private benefits through tunneling, but not when they expect to achieve lower private benefits, which supports Hypothesis 2. The ownership benefits of controlling shareholders play a limited role in moderating the relationship in Hypothesis 1, so Hypothesis 3 is not supported. However, it is the private benefits of controlling shareholders—their illegitimate tunneling, not their legitimate ownership shares, that

TABLE 5 Analysis of the Compensation ratio: Moderating effect of ownership benefits

DV: *Compensation ratio*	**(1)**	**(2)**	**(3)**
Sample	Subsample analysis	Subsample analysis	Full sample
	Low nontradable Shares	High nontradable Shares	
K-Z Index × *Tobin's Q*	0.48	2.07	−8.56
	(8.17)	(0.80)	(20.78)
K-Z Index × *Tobin's Q* × *Nontradables*			11.21
			(24.62)
Tobin's Q × *Nontradables*			2.08
			(1.56)
K-Z Index × *Nontradables*			0.56
			(1.99)
K-Z Index	0.59	0.01	−0.03
	(0.41)	(0.18)	(1.37)
Tobin's Q	−0.86	−0.72	−2.18
	(0.39)	(0.19)	(1.10)
Nontradables	0.48	0.31	0.28
	(0.04)	(0.07)	(0.04)
Con_nontradables	0.03	−0.00	0.01
	(0.02)	(0.01)	(0.01)
Con_tradables	−0.14	−0.61	−0.16
	(0.05)	(0.15)	(0.05)
State-controlled	0.02	0.02	0.02
	(0.01)	(0.01)	(0.01)
ROA	−0.09	−0.19	−0.15
	(0.07)	(0.06)	(0.05)
Turnover	−0.24	−0.14	−0.08
	(0.33)	(0.28)	(0.22)
Volatility	−0.16	1.35	0.76
	(0.79)	(0.74)	(0.58)
Past returns	−7.87	−2.63	−4.75
	(2.82)	(1.91)	(1.68)
Log(duration)	−0.02	−0.04	−0.03
	(0.02)	(0.01)	(0.01)
Control-cash gap	−0.06	−0.03	−0.03
	(0.03)	(0.02)	(0.02)
Average CR of firms in same province	0.05	0.17	0.13
	(0.13)	(0.08)	(0.07)
Average CR of firms in same industry	0.07	0.13	0.08
	(0.13)	(0.07)	(0.07)
Average CR of interlocked firms	0.06	−0.01	0.02
	(0.08)	(0.05)	(0.05)
Average CR of firms served by same investment bank	0.08	−0.02	0.03
	(0.09)	(0.08)	(0.06)
Year-fixed effects	Yes	Yes	0.21
Industry-fixed effects	Yes	Yes	(0.09)

TABLE 5 (Continued)

DV: *Compensation ratio*	(1)	(2)	(3)
Constant	0.05	0.21	0.20
	(0.16)	(0.11)	(0.09)
Observations	520	520	1,040
R-squared	0.31	0.32	0.34

Note. Robust standard errors in parentheses.

lie at the heart of the principal-principal conflict in emerging market corporate governance (e.g., Bertrand et al., 2002; Dharwadkar et al., 2000; Faccio et al., 2001; Kim et al., 2008), so the support for Hypothesis 2 continues to shed light on the alternative way proposed in our study to protect minority shareholders in face of the principal-principal conflict.

5 | DISCUSSION AND CONCLUSION

Protecting minority shareholders is a core issue in corporate governance. In this article, we examine certain circumstances under which controlling shareholders behave in a more conciliatory fashion by becoming more willing to share value with minority shareholders. This behavior, we argue, is more likely to occur when controlling shareholders need to induce minority shareholders to take actions that would enable the firm to achieve higher value.

The ownership-split reform, a major corporate governance reform of China's listed firms, constitutes an appropriate research context. The reform required bargaining within each firm between controlling shareholders and minority shareholders over the compensation paid by the former to the latter in exchange for the approval of the latter over allowing nontradable shares to trade on the stock market. The penalty for failing to reach an agreement was to disallow the firm from seeking equity financing again in the stock market. This context provided a novel exogenous shock to assess the causal effects of the potential value of accessing equity financing (which was directly determined by minority shareholders' approval or denial of the reform) on the compensation offered by controlling shareholders to minority shareholders.

Our findings yield the following novel insights. First, controlling shareholders do *not* always "squeeze" the interest of minority shareholders as the principal-principal conflict suggests. Instead, controlling shareholders agree to higher levels of compensation paid to minority shareholders when two conditions coexist: The firm (a) is effective at creating value through business activities, but (b) faces greater financing constraints in funding such business activities.

Moreover, we find that these controlling shareholders are willing to compensate minority shareholders *only when* they expect to capture a sufficiently high proportion of firm value through gaining private benefits (i.e., tunneling). In stark contrast, controlling shareholders who expect to capture limited private benefits do *not* exhibit such conciliatory behavior—even when minority shareholder's approval continue to generate higher firm value. These results highlight an interdependent relationship between value creation and appropriation—but in a stronger form: Controlling shareholders are *not universally* concerned about incentivizing value creation by minority shareholder; they *only* do so under the expectation of being able to appropriate a disproportionate share of firm value for themselves.

5.1 | Theoretical contribution

It is commonly known that strengthening the legal protection of minority shareholders can better safeguard their value (Guillen & Capron, 2015). Similarly, granting minority shareholders more power to affect the creation of firm value, which is the approach studied in this article, can also achieve this outcome by increasing their bargaining power vis-à-vis controlling shareholders. However, there is an important theoretical distinction. The conventional approach commonly deems controlling and minority shareholders as competing in a *zero-sum* contest in which they split a "pie" (firm value) whose value is considered fixed; hence, protecting minority shareholders necessarily entails mitigating controlling shareholders' expropriation of firm value. Controlling shareholders often respond by resisting and undermining the initiatives that aim to curb their abilities to capture value (Morck et al., 2005; Yoshikawa & Rasheed, 2009). As a result, public policies have not been very successful when it comes to curbing controlling shareholders' opportunistic behavior (Rajagopalan & Zhang, 2012).

By contrast, we propose an alternative approach that does not conceptualize a zero-sum game. Instead, governance tools that incentivize minority shareholders to create greater overall firm value—thus, creating a larger "pie" for all parties—can result in a *win-win* situation in which every gain to the controlling shareholders does *not* necessarily have to come from a loss to the minority shareholders and vice versa. This holds true even when controlling shareholders continue to appropriate a disproportionately larger share of firm value. The advantage of this alternative approach is that protecting minority shareholders no longer entails direct conflict with controlling shareholders. Instead, this approach, to a certain extent, is aligned with controlling shareholders' own interest, hence reducing the resistance from them.

Moreover, in this alternative approach, the higher the proportion of firm value that controlling shareholders expect to capture, the more they compensate minority shareholders for engagement in value-enhancing activities. This is a novel insight because it shows that value appropriation is not antithesis to value creation—but rather, there exists interdependency in that only when controlling shareholders can capture a higher proportion of firm value are they willing to give more value away to minority shareholders such that the latter can undertake the desired actions. This insight is consistent with a general theory that creating—and competing to appropriate—firm value is inherently connected because creating greater firm value increases the amount every relevant party might potentially capture, but the different abilities of the parties to capture the value, in turn, determines their willingness to engage in value creation in the first place (Brandenburger & Stuart, 2007).

Finally, the main argument developed in this article resonates with the research on how to use compensation to induce optimal efforts from relevant parties. Aghion and Tirole (1994) argued that when moral hazard or asymmetric information was rife in developing innovation, the parties whose marginal product of innovation was higher needed to be compensated more in order to induce the optimal effort from them. Gambardella, Panico, and Valentini (2015) argued that when moral hazard existed, firms needed to compensate the agents of higher human capital in the form of greater nonpecuniary benefits to induce them to take the actions that generated greater benefits for the firm.

5.2 | Policy implication

By shifting the emphasis from one of mitigating opportunism to one of sponsoring cooperation, our research highlights the following question for researchers and policymakers: How can minority shareholders be empowered to enhance the value of the firm such that controlling shareholders perceive it beneficial to treat them generously? While it remains important for corporate governance to mitigate

unfair appropriation of firm value, it is equally important to encourage relevant parties, including not only minority shareholders, but also other important parties such as boards of directors and management, to utilize or develop resources, connections, and capabilities to improve firm value (e.g., Acharya, Gottschalg, Hahn, & Kehoe, 2013).

5.3 | Limitations and future research

We by no means advocate that controlling shareholders should henceforth be allowed to freely expropriate firm value through illegitimate tunneling. Our point is that, *given* that controlling shareholders often have the power to extract a disproportionately high proportion of firm value, giving minority shareholders certain decisions rights to undertake activities that could increase firm value can help minority shareholders capture some value. It is reasonable to view this approach as a second-best solution because it is only achieved subject to the constraint that controlling shareholders continue to expropriate firm value (Rodrik, 2008). A theoretical first-best solution would be to strengthen the legal protection of minority shareholders and eliminate illegitimate expropriation by controlling shareholders altogether. However, this first-best solution proves to be very difficult to attain in vast emerging markets where the rule of law remains underdeveloped and controlling shareholders frequently wield enormous economic and political power to undermine efforts of establishing and/or enforcing these laws. Therefore, there remains much value for researchers and policymakers to understand second-best solutions, at least in the short term—while they continue searching for first-best solutions that may require radical economic and/or political power shifts.

We did not consider what occurs when controlling and minority shareholders have additional conflicts of interest beyond the competition to appropriate firm value and such diverse objectives may contribute to more variance in their behavior beyond what can be predicted from the value-creation perspective. For example, we assume that shareholders, particularly controlling shareholders, have an interest in value maximization. However, we also recognize that shareholders may embrace multifaceted goals (Hambrick, Werder, & Zajac, 2008). In the context of publicly listed firms in China, the most frequent divergence of shareholder interests from profit maximization occurs in state-controlled firms. For example, Firth et al. (2010) and Li et al. (2011) found that regulators might have a greater influence on state-controlled firms when pressuring them to pass a reform more quickly and the local government that controls a listed firm may be more generous in compensating minority shareholders to establish an investor-friendly reputation with the goal of attracting more investment to its jurisdiction in the future. Although we control for ownership types in our study, future studies may find it worthwhile to directly examine the role of ownership.

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