Corporate governance and firm value during the global financial crisis: Evidence from China

Abstract

Chinese firms that adopt a reputable accounting auditor experience a small reduction in firm value during the global financial crisis. High managerial ownership also results in a small decline in firm value for state-owned enterprises (SOEs). These results provide additional evidence that good corporate governance mitigates the expropriations of minority shareholders that become severe during a crisis period. We also find that SOEs that show poor performance during the pre-crisis period experience better performance during the crisis, especially when they rely on bank debt. The result suggests that state ownership mitigates financial constraints during times of financial crisis.

1. Introduction

Shleifer and Vishny (1997) argue that corporate governance is a mechanism to mitigate agency conflicts and thereby assure sufficient returns to fund suppliers. Inherently, managers tend to consume perquisites at the expense of shareholder wealth (Jensen and Meckling, 1976). In addition, controlling shareholders have an incentive to pursue private benefits at the expense of minority shareholders (Shleifer and Vishny, 1997).[1] Well-designed corporate governance structures help mitigate such problems and thereby contribute to high firm value. Numerous studies are devoted to investigating the relation between corporate governance structure and firm performance (e.g., Bhagat and Bolton, 2008; Dahya et al., 2008; Gompers et al., 2003; Klapper and Love, 2004). However, endogeneity problems make it difficult to evaluate the effect of corporate governance accurately.

An effective way to measure the effects of corporate governance on firm performance is to analyze stock price return during a financial crisis. Investors tend to ignore a lack of adequate corporate governance structures during an economic boom (Rajan and Zingales, 1998). However, once a crisis begins and expected returns fall substantially, investors begin to consider corporate governance weaknesses, especially in countries where minority shareholder rights are not well protected (Mitton, 2002). This suggests

[1] La Porta et al. (1999) and Dharwadkar et al. (2000) argue that the greatest source of agency problems stems from controlling shareholders, who expropriate value from minority shareholders. Bebchuk et al. (2000) and Morck et al. (2000) discuss how controlling shareholders may pursue objectives that are at odds with those of minority shareholders. Morck et al. (2005) suggest that concentrated ownership, combined with an absence of effective external governance mechanisms, results in more frequent conflicts between controlling and minority shareholders.

that stock price performance during a crisis incorporates the expropriation of minority shareholders. Further, financial crisis is a sudden and unpredictable event; it is extremely difficult for firms to adjust their corporate governance structures in response to a future financial crisis. Therefore, using financial crisis period data allows us to avoid the endogeneity problems that plague corporate governance researchers. Indeed, previous studies investigate how corporate governance structures affect stock performance in emerging markets during the East Asian financial crisis of 1997–1998 (Baek et al., 2004; Johnson et al., 2000; Mitton, 2002; Lemmon and Lins, 2003).

In the present study, we investigate the relation between corporate governance structure and the change in firm value in China during the current global financial crisis. China is of particular interest to corporate governance researchers because Chinese companies experience unique agency problems. Wei (2005) describes insider stock ownership in China as very small. This suggests that Chinese companies potentially improve performance by increasing managerial ownership. Indeed, Li et al. (2007) and Hu and Zhou (2008) offer evidence that firms show better performance when their managers takes equity stakes. Further, the Chinese state exerts strong controlling power and potentially expropriate minority shareholders. Several researchers show evidence that state-owned enterprises (SOEs) exhibit poor performance (Bai et al., 2000; Sun and Tong, 2003; Zhang et al., 2001). However, to the best of our knowledge, there are few studies that investigate how corporate governance affects firm performance in China during periods of financial crisis. The present paper intends to fill this research gap, reexamining how Chinese corporate governance structures affect firm performance in a

research environment that is less subject to causality problems.

It is important to note that the presented analyses have important policy implications. In 2002, the China Securities Regulatory Commission (CSRC) issues the Standards on Corporate Governance for the Publicly Listed Companies, modeled after best corporate governance practices in the UK and US. The new "Standards" lay down a series of requirements on controlling shareholder behaviors as well as board composition and responsibilities, transparency and information disclosure, etc. Since 2001, the CSRC and the two stock exchanges (Shanghai and Shenzhen) issue similar regulations as to the content and quality of the annual financial reports and other disclosures released by listed companies (Lin, 2005). Our investigation examines whether such regulatory movements contribute to decreased expropriations of minority shareholders.

Using a comprehensive corporate governance data set of 951 Chinese firms, we find that firms that adopt a reputable accounting auditor experience small firm value reductions during the crisis period. The result supports the idea that greater disclosure lessens information asymmetry and thereby mitigates agency conflicts between managers and outside investors (Diamond and Verrecchia, 1991; Glosten and Milgrom, 1985; Healy and Palepu, 2001; Meek et al., 1995). Secondly, high managerial ownership is positively associated with the change in firm value of SOEs. Consistent with Li et al.'s (2007) finding, this result supports the view that, in China, managerial ownership is an effective way of aligning managerial interests with that of shareholders.

Overall, we provide additional evidence that strict corporate governance structures mitigate expropriation of minority shareholders, which becomes more severe during crisis periods (Baek et al., 2004; Lemmon and Lins, 2003; Mitton, 2002). In addition, our results suggest that recent Chinese regulatory movements are steps in the right direction toward more effective corporate governance structures. Interestingly, we find that SOEs that show significantly poor performance during the pre-crisis period experience small firm value reductions during the crisis period. We argue that state ownership mitigates the financial constraints that become severe during a financial crisis (Ivashina and Scharfstein, 2010; Kuppuswamy and Villalonga, 2010). Indeed, SOEs that rely more on bank debt experience fewer declines in firm value during the crisis period. Previous studies suggest that state ownership engenders expropriations of minority shareholders in normal economic conditions. In contrast, we offer new evidence that state ownership makes shareholder value more stable by providing liquidity during crisis periods.

The paper proceeds as follows. Section 2 presents our hypotheses while Section 3 describes the sample selection procedure and data. In Section 4, we present results of our empirical analyses. Section 5 reports additional test results, while Section 6 summarizes and concludes the paper.

2. Hypotheses Developments

(1) Managerial ownership

It is well known that the separation of ownership and control engenders agency conflicts between shareholders and managers (Berle and Means, 1932; Jensen and Meckling, 1976). Previous US studies find evidence that firm value increases with managerial ownership at certain ownership levels (McConnell and Servaes, 1990, 1995; Morck et al., 1988). Several papers investigate the relationship between firm performance and managerial ownership for Chinese companies. For example, Li et al. (2007) find a monotonically positive relationship between managerial ownership and performance changes for Chinese SOEs. Examining Chinese non-listed firms, Hu and Zhou (2008) find that firms with significant managerial ownership levels outperform those whose managers do not own equity shares. These findings give rise to the following hypothesis.

H1: *Firms with high-managerial ownership suffer less from deteriorating firm value during the global financial crisis.*

We use percentage ownership by CEO and executive directors (hereafter denoted by SHA_MA) as a proxy for managerial ownership (See Table 1 for definitions of variables). Previous US studies find a negative relation between firm value and managerial ownership at certain ownership levels (McConnell and Servaes, 1990; 1995; Morck et al., 1988). However, the average managerial ownership in Chinese companies

is so low that entrenchment effects are not likely. For this reason, we predict a monotonically positive relation between firm performance and managerial ownership.

[Insert Table 1 about here]

(2) Information disclosure quality

Information disclosure quality recently receives much attention from the corporate governance literature. The idea that greater disclosure lowers the information asymmetry and thereby mitigates agency conflicts between managers and outside investors is well-cited (Bushman and Smith, 2001; Diamond and Verrecchia, 1991; Glosten and Milgrom, 1985; Healy and Palepu, 2001; Hope and Thomas, 2008; Meek et al., 1995). Indeed, Leuz et al. (2009) find that in countries with poor disclosure requirements, foreign investors invest less money in firms with high family control. Information disclosure quality becomes particularly important during crisis periods, when expropriations of minority shareholders are likely to occur. Mitton (2002) and Baek et al. (2004) find that better disclosure is associated with higher firm performance during the East Asian Crisis. These discussions give rise to the following hypothesis.

H2: *Firms with higher information disclosure quality suffer less from deteriorating firm value during the global financial crisis.*

Following Mitton (2002), we adopt a dummy variable that takes the value of one when the firm's auditor is one of the four largest international accounting firms in order to measure the firm's disclosure quality. The largest international accounting firms (Big Four) are: PricewaterhouseCoopers, Deloitte Touche Tohmatsu, Ernst & Young and KPMG. Big Four auditors are likely to improve information disclosure quality for the following reasons: (a) Big Four firms have a greater reputation to uphold (Michaely and Shaw, 1995); (b) they are more independent than local firms; and (c) they are exposed to greater legal liabilities for errors (Dye, 1993). In addition, Big Four auditors may allay investor fears during financial crisis periods due to their prominent reputations (Rahman, 1998). We expect to find a positive relation between the Big Four dummy and change in firm value during the global financial crisis period under study.

(3) Board structure

The board of directors is an instrument through which shareholders can exert influence on the behavior of managers in order to ensure that the company is run according to their interests (Hermalin and Weisbach, 2003). Fama (1980) argues that boards of directors are the central internal control mechanisms for monitoring managers. Since the Sarbanes Oxley (Sox) Act mandates that the audit committees for the boards of directors of listed companies have a majority of independent members, corporate board

structures receive much attention from researchers of late (Boone et al., 2007; Coles et al., 2008; Guest, 2008;). We present the following hypothesis to test the idea that well-designed boards mitigate expropriations of minority shareholders.

H3: *Firms with well-designed board structures suffer less from deteriorating firm value during the global financial crisis.*

We focus on two aspects of board structures: board size and independence. The literature shows that large boards are less effective than smaller boards due to free-rider problems (Gladstein, 1984; Jensen, 1993; Lipton and Lorsch, 1992; Shaw, 1981). Bennedsen et al. (2008), Eisenberg et al. (1998), and Yermack (1996) offer evidence that small boards are accompanied by high firm value. We use a natural logarithm of the number of directors (BOARDS) as a proxy for board size. We expect BOARDS to have a negative impact on stock price performance during the financial crisis.

It is well documented that independent directors monitor management more in shareholder interests than do inside directors (Fama, 1980; Fama and Jensen, 1983; Jensen, 1993). Some researchers present evidence that supports the effective monitoring role of independent boards. For example, using an event study methodology, Rosenstein and Wyatt (1990) find a significantly positive stock price reaction to the announcement of outsider appointments to boards. Examining 128 tender offer bids during the period 1980 through 1987, Byrd and Hickman (1992) show that bidding firms on which

independent outside directors hold at least 50 percent of the seats have significantly higher returns announcements than other bidders. Using data from the UK, Dahya and McConnell (2005) conclude that boards with greater proportions of outside directors make different (perhaps better) decisions. More recently, Dahya et al. (2008) find a positive relationship between board independence and operating performance. Calls for independent boards are increasingly evident in China; the CSRC promulgates a regulation requiring listed companies to have independent directors account for at least one-third of the firm's total board members by June 30, 2003 (CSRC, 2001). We adopt the proportion of independent directors over total board members (IND_BOA) as a proxy for board independence. We expect IND_BOA to have a positive relation to stock performance.

(4) State ownership

A distinctive feature of Chinese corporate governance is the existence of state-control. Many previous Chinese studies find a negative effect of state ownership on firm value (Gunasekarage et al., 2007; Sun and Tong, 2003; Xu and Wang, 1999; Zhang et al., 2001). It is likely that, in normal economic conditions, expropriation of minority shareholders by the state exists. Bai et al. (2000) and Clarke (2003) argue that SOEs principally aim to maintain employment and social stability rather than profit maximization, which engenders agency conflicts between the state and minority

shareholders. In addition, while state ownership enhances the firm's access to debt, it also has adverse effects on managerial incentives and firm performance (Dewenter and Malatesta, 2001; Khwaja and Mian, 2005). These facts give rise to the prediction that SOEs suffer more from decreased firm value during the global financial crisis.

H4-1: *SOEs suffer more from reductions in firm value than non-SOEs during the global financial crisis.*

We can also make an opposite prediction. During financial crisis periods, companies tend to suffer from severe financial constraints (Ivashina and Scharfstein, 2010). Campello et al. (2010) find that during the credit crisis of 2008, financial constraints force numerous firms to forgo attractive investment projects, particularly in Europe and Asia. Previous studies show that state-owned banks make decisions to provide loans in consideration of political interests (Din, 2005; Sapienza, 2004). As a result, Chinese SOEs receive a disproportionately large share of the credits provided by large state banks (Allen et al., 2005; Gordon and Li, 2003). Li et al. (2009) show that Chinese SOEs receive preferential treatment and have easy access to bank funding. This characteristic potentially engenders overinvestment problems in typical economic conditions, but mitigates severe financing constraints that plague numerous companies during financial crisis periods.

H4-2: *SOEs suffer less from reductions in firm value than non-SOEs during the global*

financial crisis.

To explore the effect of state ownership, we construct a dummy variable (D_SOE) that equals one if government is the controlling shareholder and zero otherwise. We also adopt bank debt divided by assets (BANKR) as a measure of the firm's reliance on bank loans from state-owned banks. Given that the state provides credits via state-owned bank lending to SOEs, BANKR will have a positive impact on firm value during times of financial crisis.

3. Sample Selection and Data

Our sample comprises Chinese firms listed on the Shanghai and Shenzhen Stock Exchanges. We collect financial and stock price data from the Osiris database. Then, we merge corporate governance data obtained from the CCER database with the financial and stock price data. We delete financial institutions (firms that have a CSRC industrial classification code that begins with "I") from the analyses because their financial statement formats are different from that of non-financial firms.

Following Ivashina and Scharfstein (2010), we define the financial crisis period as August 2007 through December 2008. We use the change in Tobin's *Q* during the period (Ch_*Q*) as a proxy for change in firm value during the financial crisis; Tobin's *Q* is computed as the ratio of total liabilities and the market value of equity divided by the

book value of total assets. Key independent variables are SHA_MA, BIG_FOUR, BOARDS, IND_BOA, D_SOE, and BANKR.

Our analyses include several control variables that potentially affect firm value during the financial crisis. It is well documented that block shareholders, who are not subject to free-rider problems, effectively monitor management and thereby, increase firm value (Jensen and Meckling, 1976). In contrast, controlling blockholders may exert power to benefit themselves at the expense of minority shareholders (Shleifer and Vishny, 1997). Indeed, Baek et al. (2004) offer evidence that Korean chaebol firms with concentrated ownership experience a large drop in the value of their equity during the East Asian Crisis. To examine the effect of block shareholders on firm value, we adopt the proportion of shares owned by blockholders (shareholders who own at least 5% of the firm's outstanding shares) (BLOCKHD).

In addition, previous studies suggest that a person serving both as board chairman and CEO can exert power to pursue their private benefits at the expense of shareholder wealth (Jensen, 1993). Several researchers argue that the same person should not occupy both seats because such a dual role reduces the effectiveness of board monitoring (Finkelstein and D'Aveni, 1994; Mallette and Fowler, 1992). In contrast, Dechow et al. (1996) and Peng et al. (2007) find a positive relationship between CEO duality and firm performance. We adopt a dummy variable that equals one if the firm's CEO also serves as its board chairman or vice chairman and zero otherwise (DUALITY), to test the effect of CEO duality on firm value during the crisis.

Companies that issue B-shares, which are mainly traded by foreign investors in foreign currencies, must adopt international accounting standards. Hence, B-share

issuance serves as a proxy for better corporate governance. Baek et al. (2004) show that Korean firms that are owned more by unaffiliated foreign shareholders experience smaller stock price reductions during the East Asian Crisis. Bai et al. (2004) find that B-share issuance to foreigners has a positive effect on market valuation. Thus, we adopt a dummy variable that equals one if a company issues B-shares traded on the Shanghai Stock Exchange or the Shenzhen Stock Exchange and zero otherwise (hereafter denoted by BSH).

Firms with high leverage inevitably experience poor stock price performance during economic downturns (Lang and Stulz, 1992; Opler and Titman, 1994). Total liabilities minus bank debt divided by total assets (LEV) is used to control for the leverage effect. Given that previous studies show evidence that corporate investment levels positively relate to liquidity (Fazzari et al., 1988; Hoshi et al., 1991; Whited, 1992), firms with poor liquidity conditions are forced to develop more investment plans, especially during a financial crisis. We predict that firms with greater liquidity experience smaller reductions in stock prices. We adopt the ratio of current liabilities to current assets (LIQUID) as a measure of a firm's liquidity status.

It is likely that severe reductions in US consumption have unfavorable impacts on Chinese exporters. We include export sales divided by total sales (EXPORTR) to test this view; export sales data is obtained from firms' annual reports. In addition, we include return on assets (earnings before interests and taxes divided by total assets; ROA), book-to-market ratio (book value of equity divided by market value of equity; B_M), stock volatility (standard deviation of monthly stock returns from August 2006 to July 2007; STD), firm size (natural logarithm of the market value of equity; Ln[M]) and

industry dummies in all regressions. We compute all variables except STD using year 2006 data in order to mitigate endogeneity problems. When necessary data is not available, we delete the firm from the analysis. In addition, we delete observations with Ch_*Q* greater (lower) than the 99th (1st) percentile to avoid outlier effects. As a result, the final sample includes 951 firms.

Table 2 reports descriptive statistics for the entire sample. Panel A summarizes descriptive statistics for the non-dummy variables. The mean and median declines in Tobin's *Q* are -2.1 and -1.5, respectively, which indicates that Chinese companies lose a substantial portion of their values during the global crisis period. The mean SHA_MA is about 1%, which indicates that there is great separation between ownership and management in Chinese companies (Wei, 2005). It is noteworthy that low managerial ownership is especially evident in SOEs; the mean SHA_MA is 0.13% for SOEs, which is significantly lower than that of non-SOEs (2.82%). Nevertheless, the sample firms have concentrated ownership structures, at least partly because the state holds substantial equity stakes in SOEs; the mean BLOCKHD is 46.2%. Independent directors account for about half of total board members.

Panel B presents summary statistics for the dummy variables. Approximately 67% of the sample companies are controlled by the government (SOEs). Only 6.6% of the sample firms employ one of the Big Four accounting firms as their auditor.

[Insert Table 2 about here]

4. Empirical Analyses

(1) Univariate analyses

To test our hypotheses, we divide the sample firms into several groups by a corporate governance variable and compare Ch_*Q* across groups. For dummy variables (BIG_FOUR; D_SOE), we simply divide the sample firms into two groups (Group 1 comprises firms for which the dummy variable takes the value of one). For non-dummy variables that take the value of zero for many firms (SHA_MA; BANKR), we make a group (Group 4) that comprises all firms for which a variable takes the value of zero; then, divide the remaining firms equally into three groups (Group 1 is the highest group). BOARDS and IND_BOA take the same value for many companies; as a result, the 25th percentile is the same as the 50th percentile. We divide the sample firms into three groups by adopting the 50th and 75th percentiles as cut-off points.

[Insert Table 3 about here]

Table 3 shows that firms that adopt a Big Four accounting firm experience significantly lower reductions in firm value. The difference across groups reaches 0.89, which is economically large. This result is consistent with the hypothesis that better information disclosure quality mitigates the expropriations of minority shareholders (H2). Consistent with the positive effect hypothesis (H4-2), univariate test results suggest that SOEs suffer less from firm value reductions than do non-SOEs. In addition,

Table 4 shows that the highest BANKR group (Group 1) experiences significantly smaller declines in firm value than the lowest BANKR group (Group 4). Table 3 does not offer evidence that managerial ownership and board independence are significantly related to firm value decline during the global financial crisis. Contrary to H3, firms with large boards experience small declines in firm value during the crisis.

(2) Regression results

In this section, we present the regression results to investigate whether the corporate governance variables affect Ch_*Q* after controlling for various factors. To examine potential multicollinearity problems, we present a correlation matrix (Table 4). Key independent variables (SHA_MA; BIG_FOUR; BOARDS; IND_BOA; D_SOE; BANKR) have no serious, high correlations with other independent variables.

[Insert Table 4 about here]

Regression results are presented in Table 5. All models engender a positive and significant coefficient on BIG_FOUR, which indicates that firms with better disclosure quality suffer less from stock price declines during the crisis period. Consistent with H2, this result provides additional support for the results in Mitton (2002) and Baek et al. (2004), that transparency mitigates the expropriation of minority shareholders, which becomes more evident during a crisis period.

[Insert Table 5 about here]

As with the univariate test result, Models 1 to 3 show that the coefficient on D_SOE is positive and statistically significant at the 0.01 level. Consistent with H4-2, this result indicates that state ownership has a favorable impact on firm value during the crisis period. Consistent with this hypothesis, the coefficient on BANKR is positive and significant at the 0.01 level. We interpret this to mean that SOEs receive preferential access to bank debt, and as a result, avoid forgoing prospective projects (Li et al., 2009). To further test this idea, Model 3 includes the interaction term D_SOE with BANKR; the interaction term has a positive and significant coefficient, as do D_SOE and BANKR. Consistent with the positive effect hypothesis, SOEs that rely on bank debt experience small reductions in Tobin's *Q*.

There are numerous studies that evidence a non-linear relation between firm value and managerial ownership (McConell and Servaes, 1990, 1995; Morck et al., 1988; Short and Keasey, 1999). To address this issue, we conduct regression analysis that includes the squared term of SHA_MA (Model 2). Models 1 and 2 indicate that, for the entire sample, managerial ownership has no significant impact on stock price performance during the financial crisis. Li et al. (2007) find a monotonically positive relationship between managerial ownership and performance changes for a sample of Chinese SOEs. This gives rise to our prediction that managerial ownership mitigates

agency conflicts in SOEs where the separation of ownership and management is highly developed. Model 4 replicates Model 1, using 638 SOE sample firms to test this idea. Model 4 engenders a positive and significant coefficient on SHA_MA. The result provides support for Li et al.'s (2007) findings in a research setting less subject to endogeneity problems.

Overall, our results suggest that corporate governance is an important determinant of firm value during crisis periods, which provides support for empirical findings during the East Asian Crisis (Baek et al., 2004; Johnson et al., 2000; Mitton, 2002; Lemmon and Lins, 2003). In contrast, the positive bank debt effect shows sharp contrast to the popular view that firms that rely on bank debt have few alternative financing sources and thus suffer more when banks decrease lending (Baek et al., 2004; Kang and Stultz, 2000; Nogata et al., 2010). We interpret this evidence as parallel to empirical results on corporate diversification, as found by Kuppuswamy and Villalonga (2010).[2] Previous studies suggest that diversification has a negative impact on firm value (e.g., Berger and Ofek, 1995; Denis et al., 1997; Lang and Stulz, 1994). However, Kuppuswamy and Villalonga (2010) show evidence that US firms' diversification discounts become significantly small during the global financial crisis. They argue that this decreased diversification discount is partly attributable to a "more money effect" that arises from the debt coinsurance feature of conglomerates.

With respect to other variables, neither BOARDS nor IND_BOA is associated with Ch_*Q* at the 0.05 significance level. Board characteristics have no explanatory power of

[2] Similarly, Nogata et al. (2010) show evidence that Japanese firms with more cross-held shareholders, which engender entrenchment effects in normal economic conditions, suffer less from deteriorating stock price performance during the current financial crisis. This evidence, which is contrary to previous Japanese study findings, can also be viewed as parallel to our bank debt result.

variations in firm value change during the crisis. On the corporate boards of Chinese firms, there are few professionals (lawyers, accountants and finance experts) and almost no minority shareholder representation (Chen et al., 2004). As a result, board independence is highly compromised (Liu, 2006). Thus, it is likely that such boards do not effectively monitor management.

Table 5 suggests that DUALITY has an insignificant coefficient. Differently from US firms, Chinese companies are under the control of the state; almost all senior executives are appointed by the controlling shareholder (Chen et al, 2006). We interpret the result to mean that serving both as CEO and board chair does not give the individual dictatorship. Accordingly, as with the result on bank debt, LEV has a positive and significant coefficient. Consistent with the idea that firms with poor liquidity suffer more during crisis periods, LIQUID has a negative and significant coefficient. STD has a negative and significant coefficient; firms that take more risks suffer more during the financial crisis. Table 5 also suggests that large firms suffer more during crisis periods. We do not find a significant coefficient on BLOCKHD, BSH, EXPORTR, ROA, and B_M.

5. Additional Tests

(1) Differing definitions of financial crisis periods

In the former analyses, we define the financial crisis period as August 2007 to December 2008. However, the Chinese stock price indices (Shanghai Composite Index

and Shenzhen Component Index) slightly increase from August 2007 to September 2007. Chinese stock prices begin to seriously decline from October 2007 and the downward trend does not end until October 2008. Over the period, the Shanghai Composite Index and Shenzhen Component Index drop by 70.96% and 70.10%, respectively.

[Insert Table 6 about here]

We adopt a new definition of the crisis period, from October 2007 to October 2008, to test whether or not the results are sensitive to definition of the global financial crisis. Table 6 presents qualitatively the same regression results for this period. Consistent with H2, all models engender a positive and significant coefficient on BIG_FOUR, which suggests that better information disclosure quality mitigates the expropriations of minority shareholders. D_SOE, BANKR, and SOE*BANKR have a positive and significant coefficient; Chinese SOEs faced fewer financing constraints and experienced less decline in firm value during the global financial crisis. SHA_MA has a positive and significant coefficient for the SOE subsample. Differently from the former regression, Table 6 engenders a positive and significant coefficient on BOARDS. As with Coles et al. (2008), the result suggests that small boards, which certain previous studies view as more effective monitoring agents, do not necessarily mitigate of minority shareholder wealth expropriations (Bennedsen et al., 2008; Eisenberg et al., 1998; Gladstein, 1984; Jensen, 1993; Lipton and Lorsch, 1992; Shaw, 1981; Yermack, 1996).

(2) Deletion of outliers

Table 2 suggests that some sample firms have extremely low Ch_*Q* (the minimum is -15.9), although we delete observations with Ch_*Q* greater (lower) than the 99th (1st) percentile in the original sample. Table 2 also indicates that some sample firms have abnormally high B_M (the maximum is 73). To test if our main results are highly affected by these outliers, we delete firms that meet the following condition and conduct the same regression analysis: Ch_Q <= -4.5; B_M>= 10.

The regression analysis engenders qualitatively the same results (not reported): (a) firms that adopt reputable accounting firms show better performance; (b) managerial ownership is positively related to Ch_*Q* in the SOE subsample; and (c) SOEs that rely on bank debt suffer less during the financial crisis. It is noteworthy that this analysis engenders a positive and significant coefficient on BSH. Consistent with Baek et al. (2004) and Bai et al. (2004), this result provides weak evidence that less expropriations of minority shareholder wealth exists in firms that issue B-shares, and thereby must meet international accounting standards. Differently from Table 6, BOARDS has an insignificant coefficient in this analysis.

(3) Pre-crisis period results

As mentioned, investors are more conscious of expropriation problems during a financial crisis when their expected returns are low (Mitton, 2002). If this holds true, we should not find a strong positive relation between corporate governance and firm

performance during economic boom periods. As a robustness check, we conduct the same regression analyses for the change in Tobin's *Q* during a pre-crisis period. Following Ivashina and Scharfstein (2010), we define the pre-crisis period as August 2006 through July 2007.[3] This test also allows us to address causality problems. If the former results are produced from the opposite causal relations (e.g., well-performing firms tend to adopt Big Four auditors), we should find the same result for the pre-crisis period.

[Insert Table 7 about here]

The pre-crisis period results (Table 7) engender a negative and significant coefficient on BIG_FOUR, which contradicts those of the crisis-period result. It also engenders a negative coefficient on D_SOE and BANKR, which shows a sharp contrast to the former, but is consistent with previous studies (Xu and Wang, 1999; Zhang et al., 2001; Sun and Tong, 2003; and Gunasekarage et al., 2007). The coefficient on SOE*BANKR is also negative and significant. These conflicting results provide clear evidence of the two faces of state ownership; state ownership provides substantial credit to SOEs; as a result, state ownership engenders over-investment problems in normal economic conditions but mitigates financing constraints during financial crisis periods. We argue that state ownership makes firms' shareholder wealth more stable. The pre-crisis period regression engenders a positive coefficient on SHA_MA for the SOE sample (Model 4). However, the significance level becomes marginal. These results suggest that corporate

[3] Stock price indices continuously increase during the period.

governance mechanisms mitigate the expropriation problem that becomes more evident during crisis periods. We also argue that our main results are not derived from the opposite causal relation.

6. Conclusions

Several researchers investigate the relation between corporate governance structure and stock price performance during the East Asian Crisis. The underlying idea is that expropriation problems become more severe during crisis periods (Baek et al., 2004; Johnson et al., 2000; Mitton, 2002; Lemmon and Lins, 2003). Similar to these investigations and using Chinese data from the present global financial crisis, we investigate the relation between corporate governance structure and change in firm value. Chinese data offer appropriate material to test the role of corporate governance due to the unique characteristics of Chinese corporate governance, which are likely to engender serious agency conflicts.

Using data from 951 Chinese-listed firms, we find evidence that firms with prestigious accounting auditors experience small reductions in firm value during the global financial crisis. This result is consistent with the idea that better disclosure is associated with higher firm performance (Baek et al., 2004; Bushman and Smith, 2001; Diamond and Verrecchia, 1991; Glosten and Milgrom, 1985; Healy and Palepu, 2001; Hope and Thomas, 2008; Meek et al., 1995; Mitton, 2002). Secondly, managerial ownership is positively associated with firm value changes for SOEs. This result, which

is consistent with the view that managerial ownership is effective in aligning managerial interests with those of shareholders, provides support for Lin et al.'s (2007) finding while controlling for causality problems.

Overall, our results offer additional evidence that strong corporate governance plays an important role in mitigating the expropriations of minority shareholders. Additionally, we find that SOEs that rely on bank debt suffer less from deteriorating stock performance during the crisis period, while they experience poor performance during the pre-crisis period. We argue that the state provides substantial credits to SOEs; allaying financing constraints during a crisis period while engendering overinvestment problems in normal economic conditions. State ownership has two faces; as a result, state-controlled firms show more stable stock performances.

Our investigation offers some important implications for the literature. Recent corporate governance studies stress that high levels of ownership by managers or families allows the expropriation of minority shareholder wealth (Leuz et al., 2009). In contrast, we find that extremely low managerial ownership, as evident in Chinese SOEs, engenders significant agency conflicts. While previous studies stress a negative aspect of state ownership, (See Gunasekarage et al., 2007; Sun and Tong, 2003; Xu and Wang, 1999; Zhang et al., 2001) we provide new evidence that state ownership has positive effects on firm value during a crisis period. Similarly, we show new evidence that bank debt has a positive effect on firm performance during a crisis period. This result, which stands in sharp contrast to previous findings (Baek et al., 2004; Kang and Stultz, 2000, Nogata et al., 2010), suggests that state-controlled banking systems effectively mitigate firms' financial constraints during financial crisis periods.

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Table 1
Definitions of Variables

This table defines the study variables.

Variables	Definition
Ch_*Q*	Change in Tobin's *Q* from August 2007 through December 2008. Tobin's *Q* is defined as the ratio of total liabilities and market value of equity divided by the book value of total assets.
SHA_MA	Percentage ownership by the CEO and executive directors.
BIG_FOUR	Dummy variable that takes the value of one for firms that adopt a Big Four accounting firm as the auditor and zero otherwise.
BOARDS	Natural logarithm of the number of directors.
IND_BOA	Number of independent directors divided by the number of total board members.
D_SOE	Dummy variable that takes the value of one for firms in which the controlling shareholder is the government.
BANKR	Bank debt divided by total assets.
BLOCKHD	Percentage ownership by blockholders. We define blockholders as owners who hold at least 5% of the firm's outstanding shares.
DUALITY	Dummy variable that takes the value of one if the CEO also serves as the chairman or vice chairman of the board of directors.
BSH	Dummy variable that takes a value of one for firms that issue B-shares and zero otherwise.
LEV	Total liabilities minus bank debt divided by total assets.
LIQUID	Ratio of current liabilities to current assets.
EXPORTR	Export sales divided by total sales.
ROA	Earnings before interests and tax divided by total assets.
B_M	Book value of equity divided by the market value of equity.
STD	Standard deviation of monthly stock returns from August 2006 to July 2007.
LN[M]	Natural logarithm of market value of equity.

Table 2
Descriptive Statistics

Panel A of this table shows descriptive statistics for the non-dummy variables while Panel B presents the number (%) of firms that take a value of one for dummy variables. The sample comprises 951 Chinese firms listed on the Shanghai Securities Exchange and the Shenzhen Stock Exchange.

Panel A: Descriptive Statistics for Non-Dummy Variables (N=951)

Variable	Mean	STD	Min	P50	Max
Ch_*Q*	-2.114	2.076	-15.891	-1.531	0.382
SHA_MA	0.010	0.057	0	0	0.623
BOARDS	1.785	0.25	0.693	1.792	2.565
IND_BOA	0.554	0.121	0.143	0.5	1
BANKR	0.062	0.095	0	0.019	0.604
BLOCKHD	0.462	0.157	0.052	0.467	0.943
LEV	0.522	0.347	0.021	0.508	7.537
LIQUID	1.147	1.25	0.018	0.889	22.467
EXPORTR	0.104	0.201	0	0	0.994
ROA	0.041	0.084	-1.379	0.043	0.297
B_M	1.259	3.982	-5.797	0.544	73.262
STD	0.133	0.068	0	0.123	1.264
LN[M]	14.272	1.189	9.433	14.221	18.837

Panel B: Descriptive Statistics for Dummy Variables (N=951)

Variable	Number of observations that take a value of one	%
BIG_FOUR	63	6.62%
D_SOE	638	67.09%
DUALITY	98	10.30%
BSH	68	7.15%

Table 3
Univariate Test Results

This table compares changes in Tobin's *Q* (Ch_*Q*) for the subsamples. The sample comprises 951 Chinese firms listed on the Shanghai and Shenzhen Stock Exchanges. We divide the sample into several groups based on a corporate governance variable. For dummy variables (SOE, BIG_FOUR), we divide the entire sample into two groups. For SHA_MA and BANKR, which take a value of zero for many observations, we make a group that consists of zero observations and divide the remaining firms equally into three groups. For BOARDS and IND_BOA in which the 25th percentile is the same as the 50th percentile, we divide the entire sample firms into three groups. Presented figures are mean Ch_*Q* (above) and the number of observations (in parentheses). The right-most column reports *p*-values for the null hypothesis: that the mean of Ch_*Q* is identical for the highest and lowest groups. See Table 1 for definitions of variables.

	Group	1 (Highest)	2	3	4 (Lowest)	*p*-value
SHA_MA	Mean	-2.112	-2.067	-2.004	-2.224	0.555
	(*N*)	(213)	(213)	(213)	(312)	
BIG_FOUR	Mean	-1.288			-2.173	0.001
	(*N*)	(63)			(888)	
BOARDS	Mean	-1.704	-2.015	-2.211		0.012
	(*N*)	(124)	(146)	(681)		
IND_BOA	Mean	-2.053	-1.883	-2.191		0.384
	(*N*)	(237)	(130)	(584)		
D_SOE	Mean	-2.027			-2.292	0.064
	(*N*)	(638)			(313)	
BANKR	Mean	-1.711	-2.023	-1.899	-2.538	0.000
	(*N*)	(203)	(203)	(204)	(341)	

Table 4

Correlation Matrix

	Ch_*Q*	SHA_MA	BIG_FOUR	BOARDS	IND_BOA	D_SOE	BANKR	BLOCKHD	DUALITY	BSH	LEV	LIQUID	EXPORTR	ROA	B_M	STD	LN[M]
Ch_*Q*	1.00																
SHA_MA	-0.03	1.00															
BIG_FOUR	0.11	-0.03	1.00														
BOARDS	0.06	-0.09	0.12	1.00													
IND_BOA	0.01	0.08	0.03	-0.53	1.00												
D_SOE	0.06	-0.22	0.10	0.17	-0.08	1.00											
BANKR	0.13	-0.07	0.14	0.13	-0.01	0.11	1.00										
BLOCKHD	-0.03	-0.02	0.26	0.05	0.00	0.14	0.03	1.00									
DUALITY	-0.05	0.04	-0.02	-0.01	0.02	0.00	0.02	-0.04	1.00								
BSH	0.21	-0.05	0.14	-0.03	0.05	0.06	-0.03	-0.04	0.01	1.00							
LEV	0.09	-0.05	-0.06	0.01	-0.01	-0.07	-0.14	-0.06	-0.04	-012	1.00						
LIQUID	0.04	-0.06	0.08	0.06	-0.02	0.05	0.09	0.03	-0.05	0.08	0.59	1.00					
EXPORTR	0.04	0.11	0.04	-0.02	0.03	0.00	-0.10	0.01	-0.04	0.10	0.01	-0.09	1.00				
ROA	-0.13	0.08	0.10	0.06	0.02	0.05	0.03	0.08	0.04	-0.06	-0.27	-0.12	0.00	1.00			
B_M	0.19	-0.03	0.14	0.01	0.01	0.04	0.02	0.01	0.04	0.56	-0.05	-0.05	0.09	-0.01	1.00		
STD	-0.18	-0.04	-0.07	-0.03	-0.03	0.01	-0.06	-0.07	-0.02	0.01	0.07	-0.04	0.01	-0.10	-0.03	1.00	
LN[M]	-0.29	-0.02	0.23	0.14	-0.02	0.16	0.12	0.18	0.03	-0.48	-0.20	-0.07	-0.05	0.29	-0.38	0.05	1.00

Table 5
Regression Results for the Crisis Period: August 2007 to December 2008

The table reports regression results of the change in Tobin's *Q* during the global financial crisis: August 2007 to December 2008. The sample comprises 951 Chinese firms listed on the Shanghai and Shenzhen Stock Exchanges. Year 2006 data are used for all independent variables except for STD, which is computed using monthly stock price data over the August 2006 to July 2007 period. Model 4 adopts only SOEs for investigation. Figures in parentheses are *t*-statistics. See Table 1 for definitions of variables.

	Model 1	Model 2	Model 3	Model 4
SHA_MA	-0.16 (-0.18)	-0.68 (-0.17)	-0.24 (-0.26)	10.77*** (3.31)
SHA_MA^2		1.21 (0.15)		
BIG_FOUR	1.18*** (4.40)	1.19*** (4.39)	0.95*** (3.42)	1.09*** (3.50)
BOARDS	0.66* (1.83)	0.65* (1.84)	0.63* (1.75)	0.67 (1.40)
IND_BOA	0.74 (1.20)	0.73 (1.19)	0.75 (1.21)	0.62 (0.75)
D_SOE	0.34** (2.31)	0.34** (2.29)	0.34** (2.26)	
BANKR	3.09*** (5.09)	3.09*** (5.09)	2.60*** (4.22)	3.20*** (4.38)
SOE*BANKR			6.0E-07*** (4.59)	
BLOCKHD	-0.49 (-1.23)	-0.49 (-1.23)	-0.60 (-1.48)	0.48 (1.04)
DUALITY	-0.23 (-0.95)	-0.23 (-0.95)	-0.23 (-0.93)	-0.22 (-0.64)
BSH	0.28 (1.08)	0.28 (1.08)	0.26 (1.02)	0.30 (0.98)
LEV	0.65** (2.08)	0.65** (2.08)	0.63** (2.05)	0.60 (1.44)
LIQUID	-0.14** (-2.20)	-0.14** (-2.20)	-0.15**(-2.28)	-0.12* (-1.77)
EXPORTR	0.18 (0.47)	0.18 (0.48)	0.15 (0.39)	0.26 (0.75)
ROA	-1.40 (-0.90)	-1.40 (-0.90)	-1.29 (-0.85)	-2.04 (-0.68)
B_M	0.02 (0.98)	0.02 (0.97)	0.02 (0.96)	0.04** (2.53)
STD	-4.84*** (-3.21)	-4.85*** (-3.21)	-4.75*** (-3.21)	-4.52** (-2.36)
LN[M]	-0.48*** (-5.30)	-0.48*** (-5.31)	-0.51*** (-5.64)	-0.41*** (-3.56)
INDUSTRY dummy	Yes	Yes	Yes	Yes
N	951	951	951	638
Adjusted R^2	0.21	0.21	0.22	0.24

***: Significant at the 1% level.
**: Significant at the 5% level.
*: Significant at the 10% level.

Table 6
Regression Results for the Crisis Period: October 2007 to October 2008

The table reports regression results of the change in Tobin's *Q* during the global financial crisis: October 2007 to October 2008. The sample comprises Chinese firms listed on the Shanghai Securities and Shenzhen Stock Exchanges. Year 2006 data are used for all independent variables except for STD, which is computed using monthly stock price data during the August 2006 to July 2007 period. Model 4 adopts only SOEs for investigation. Figures in parentheses are *t*-statistics. See Table 1 for definitions of variables.

	Model 1	Model 2	Model 3	Model 4
SHA_MA	-0.35 (-0.36)	-2.83 (-0.67)	-0.43(-0.44)	9.74**(2.43)
SHA_MA^2		5.77 (0.67)		
BIG_FOUR	1.03*** (3.92)	1.04*** (3.95)	0.80*** (2.95)	0.92***(3.05)
BOARDS	0.71** (2.10)	0.70** (2.07)	0.69** (2.02)	0.81* (1.90)
IND_BOA	0.54 (0.80)	0.51 (0.76)	0.54 0.82	0.50 (0.52)
D_SOE	0.42*** (2.69)	0.41*** (2.63)	0.41*** (2.64)	
BANKR	2.93*** (4.80)	2.93*** (4.80)	2.44*** (3.95)	2.89*** (3.97)
SOE*BANKR			5.9E-07*** (3.91)	
BLOCKHD	-0.52 (-1.22)	-0.54 (-1.25)	-0.63 (-1.45)	0.32 (0.66)
DUALITY	-2.9E-03 (-0.01)	-1.9E-03 (-0.01)	4.0.E-04 (0.00)	0.19 (0.66)
BSH	0.17 (0.61)	0.16 (0.58)	0.15 (0.55)	0.27 (0.92)
LEV	0.47*(1.72)	0.47* (1.71)	0.46* (1.69)	0.44 (1.15)
LIQUID	-0.08(-1.40)	-0.08 (-1.39)	-0.09 (-1.50)	-0.05 (-1.02)
EXPORTR	0.14(0.37)	0.16 (0.41)	0.11(0.29)	0.29 (0.91)
ROA	-0.98(-0.65)	-0.95 (-0.64)	-0.86 (-0.59)	-1.68 (-0.57)
B_M	0.02 (1.14)	0.02 (1.12)	0.02 (1.14)	0.04*** (2.62)
STD	-4.98*** (-2.86)	-4.99*** (-2.87)	-4.88*** (-2.86)	-4.49** (-2.10)
LN[M]	-0.44*** (-4.90)	-0.44*** (-4.93)	-0.47*** (-5.25)	-0.35*** (-3.19)
INDUSTRY	Yes	Yes	Yes	Yes
N	951	951	951	638
Adjusted R^2	0.18	0.18	0.19	0.21

***: Significant at the 1% level.
**: Significant at the 5% level.
*: Significant at the 10% level.

Table 7
Regression Results for the Pre-Crisis Period

The table reports regression results of the change in Tobin's *Q* during the pre-crisis period: August 2006 to July 2007. The sample comprises Chinese firms listed on the Shanghai and Shenzhen Stock Exchanges. Year 2006 data are used for all independent variables except for STD, which is computed using monthly stock price data during the August 2006 to July 2007 period. Model 4 adopts only SOEs for investigation. Figures in parentheses are *t*-statistics. See Table 1 for definitions of variables.

	Model 1	Model 2	Model 3	Model 4
SHA_MA	-0.08 (-0.07)	-2.44 (-0.62)	-0.04 (-0.04)	17.57* (1.86)
SHA_MA^2		5.40 (0.66)		
BIG_FOUR	-0.81*** (-4.00)	-0.80*** (-3.97)	-0.66*** (-3.09)	-0.71*** (-3.20)
BOARDS	-0.40* (-1.67)	-0.41* (-1.74)	-0.38 (-1.59)	-0.45 (-1.57)
IND_BOA	-0.69 (-1.48)	-0.71 (-1.55)	-0.70 (-1.51)	-0.47 (-0.82)
D_SOE	-0.44*** (-3.71)	-0.45*** (-3.67)	-0.43*** (-3.68)	
BANKR	-2.25***(-5.74)	-2.25*** (-5.75)	-1.93*** (-4.81)	-2.14*** (-5.27)
SOE*BANKR			-3.9E-03*** (-4.14)	
BLOCKHD	0.35 (1.15)	0.33 (1.10)	0.41 (1.37)	-0.40 (-1.29)
DUALITY	0.13 (0.90)	0.13 (0.92)	0.13 (0.90)	-0.08 (-0.61)
BSH	-0.22 (-1.04)	-0.22 (-1.07)	-0.20 (-0.95)	-0.24 (-1.34)
LEV	-0.20 (-1.51)	-0.20 (-1.53)	-0.20 (-1.52)	-0.07 (-0.22)
LIQUID	0.10** (2.43)	0.11** (2.45)	0.11** (2.46)	0.09*** (2.59)
EXPORTR	-0.52** (-1.98)	-0.51* (-1.91)	-0.50* (-1.91)	-0.43* (-1.68)
ROA	-0.95 (-1.27)	-0.94 (-1.25)	-0.99 (-1.37)	1.50 (1.02)
B_M	-0.02 (-1.03)	-0.02 (-1.04)	-0.01 (-1.02)	-0.03*** (-2.92)
STD	2.89*** (3.58)	2.87*** (3.56)	2.83*** (3.58)	3.00*** (2.75)
LN[M]	0.31*** (5.17)	0.31*** (5.16)	0.33*** (5.46)	0.21*** (3.23)
INDUSTRY dummy	Yes	Yes	Yes	Yes
N	933	933	933	634
Adjusted R^2	0.20	0.20	0.21	0.23

***: Significant at the 1% level.
**: Significant at the 5% level.
*: Significant at the 10% level.