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Full Length Research Paper

Soft budget constraint and expropriation: Evidence from privately-owned firms in China

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Using the data of privately-owned firms in China's transition economy, the study examines the effects of soft budget constraint on the expropriation of minority shareholders. The study finds that, compared to small firms, large firms have higher bank loans and are more likely to get government subsidies. However, large firms show higher divergence between cash flow and control rights, more fund occupation by controlling shareholders, and lower market valuation. Moreover, these differences between large and small firms become particularly pronounced when the firms operate in the provinces with poorer fiscal conditions. When firm tax is substituted for firm size, the study gets the similar results. These findings suggest that soft budget constraint can mitigate the expropriation costs of controlling shareholders, and subsequently deteriorate the expropriation of minority shareholders.

Key words: Bank loans, expropriation, firm size, fiscal goal, government subsidies, soft budget constraint.

INTRODUCTION

It is widely accepted that concentrated ownership are common in many countries around the world and particularly in East Asia (La Porta et al., 1999; Claessens et al., 2000; Deng et al., 2010). The expropriation of minority shareholders is thus, of first-order importance because controlling shareholders can expropriate wealth from minority shareholders in many ways (Johnson et al., 2000; Cheung et al., 2006). Further more, La Porta et al. (2002), Claessens et al. (2002), Cheung et al. (2006), Albuquerue and Wang (2008), among others, study the effects of investor protection on the expropriation of minority shareholders. They document that imperfect investor protection makes expropriation technology more efficient, and thus, increases the expropriation of minority shareholders.

This paper examines the effects of soft budget constraint on the expropriation of minority shareholders. Kornai et al. (2003) document that soft budget constraint is widespread over the world, and particularly pronounced in transition economies. The syndrome of soft budget constraint is that the organization with soft budget constraint can expect to be rescued from trouble (Qian, 1994; Kornai et al., 2003).

The extant literature shows that the expropriation of minority shareholders increases the costs of equity financing (for example, Bertrand et al., 2002; Cheung et al., 2006), as well as debt financing for the firms (for example, Boubakri and Ghouma, 2010; Chaney et al., 2010), and thus, may lead the firms to financial distress. Therefore, the expropriation of minority shareholders results in the expropriation costs for controlling shareholders. However, soft budget constraint can help to rescue the firm in financial distress, and subsequently lowers the expropriation costs of controlling shareholders and increases the expropriation of minority shareholders.

The China's emerging market, the largest transition economy in the world, provides several important advantages in conducting this research. First, since the fiscal decentralization reforms, local governments pursue tax revenue extraction maximization in addition to firm performance (Poncet, 2005). Large firms or firms with more tax have much more fiscal contribution to local government, which provide probable motives for local government to support these firms. Second, as a transition economy, local government has much more impacts on the loan decision of state-owned banks in China (Allen et al., 2005; Fan et al., 2008), as well as the government subsidies. These consist of the means of local government

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rescue, consistent with the extant literature (Cull and Xu, 2000; Shleifer and Treisman, 2000; Khwaja and Mian, 2005). Third, the privately-owned firms in China usually have concentrated ownership, and the majority of controlling shareholders have power over firms in excess of their cash flow rights, providing a good opportunity for us to examine the effects of soft budget constraint on the expropriation of minority shareholders. Fourth, the shareholder protection is relatively worse in China (for example, Cull and Xu, 2005; Bai et al., 2006; Li et al., 2008), which makes the expropriation of minority shareholders a distinct possibility in China.

The data enable us to examine in detail the effects of soft budget constraint on the expropriation of minority shareholders. The study seeks to answer two questions. (1) Is large firm or firm with more tax more likely to face soft budget constraint? (2) Does large firm or firm with more tax has more expropriation of minority shareholders? Furthermore, the study examines the effects of local fiscal condition on these effects (Fan et al., 2007).

Using a sample of privately-owned firms from 2002 to 2006, the study finds that compared to small firms, large firms have higher bank loans and are more likely to get government subsidies. Furthermore, these differences between large and small firms become particularly pronounced when the firms operate in the provinces with poorer fiscal conditions and when the firms are in bad financial condition. These findings suggest that local government is more likely to bail out large firms with bank loans and government subsidies because large firms are more important for local government in fiscal goal. When firm tax is substituted, which includes the tax and additional fees of main operations and income tax, for firm size, the similar results are gotten. Therefore, large firm or firm with more tax is more likely to face soft budget constraint, and is a good proxy for soft budget constraint in China's transition economy.

The study uses three proxies for the expropriation of minority shareholders, the divergence between cash flow and control rights of controlling shareholders (for example, Bertrand et al., 2002), the fund occupation by controlling shareholders or the firms controlled by the controlling shareholders (for example, Deng et al., 2010; Du et al., 2007) and firm market valuation. The study finds that, compared to small firms, large firms have higher divergence between cash flow and control rights, more fund occupation by controlling shareholders or the firms controlled by the controlling shareholders, and lower market valuation. Moreover, these differences between large and small firms become particularly pronounced when the firms operate in the provinces with poorer fiscal conditions. These findings provide full sup-port for the extant literature (Jensen, 1986; Albuquerue and Wang, 2008) which predicts that controlling shareholders are able to derive greater private benefits in larger firms. When firm tax is substituted for firm size, the similar results are gotten. Overall, these findings suggest that soft budget constraint increases the expropriation of minority shareholders.

The paper contributes to two strands of literatures. First are theories on the expropriation of minority shareholders (Claessens et al., 2002; Cheung et al., 2006; Albuquerue and Wang, 2008). These researches indicate that in companies with concentrated ownership, controlling shareholders can expropriate wealth from minority shareholders, and the poorer investor protection increases the efficiency of expropriation by controlling shareholders. The study complements these theories that soft budget constraint gives controlling shareholders the anticipation that local government will support them once involved into financial distress which lowers the expropriation cost of the controlling shareholders, and subsequently increases the expropriation of minority shareholders.

Second are studies on the soft budget constraint (Qian, 1994; Lin and Tan, 1999; Kornai et al., 2003). Lin and Tan (1999) show that because the state is accountable for the losses arising from policy burdens, the soft budget constraint phenomenon persist in both privatized and state-owned firms. The study provides evidence that soft budget constraint phenomenon is more likely to persist in large private firms or private firms with more tax because they have more fiscal contribution to local government. Kornai et al. (2003) point out that a fair amount of work simply posits the existence and the effects of the soft budget constraint syndrome, while they do not address the question of why the budget constraint is soft. The study addresses why the budget constraint is soft for large firms or firms with more tax, posits the existence of the soft budget constraint syndrome and examines the effects of soft budget constraint syndrome.

Hypotheses

Firm size or firm tax and soft budget constraint

Since the decentralization reforms initiated in 1980, local governments pursue a dual strategy of socio-economic instability minimization and tax revenue extraction in addition to firm performance (Poncet, 2005). In addition, the tax revenues can be used to provide public goods and services, and help needy citizens, which can alleviate local socio-economic instability. Therefore, local government has a strong motive to increase local tax revenue.

Since large firms or firms with more tax have more contributions to local fiscal avenue, local government has a strong motive to support these. The large firms or firms with more tax are thus more likely to face soft budget constraint. In general, local government can use two means to rescue the large firms or firms with more tax when they are in financial distress. The first is bank loan. Extant literature shows that local government has much impacts on the loan decision of state-owned banks in China (Allen et al., 2005; Fan et al., 2008). Furthermore,

China's diverse markets and geographic regions provide sufficient variations in the influence of local government on the loan decision of state-owned banks. In the regions with poorer fiscal conditions, local government tends to intervene in the loan decision of state-owned banks more. Therefore, large firms or firms with more tax can obtain more bank loans, which becomes more pronounced in the regions with poorer fiscal conditions.

The second is government subsidies (Shleifer and Treisman, 2000; Kornai et al., 2003; Faccio et al., 2006). Shleifer and Treisman (2000) find that the government often use government subsides to help firms in Russia. Faccio et al. (2006), using data from 35 countries from 1997 to 2002, find that politically-connected firms are significantly more likely to be bailed out than similar non-connected firms, which becomes particularly pronounced when the IMF or World Bank provide financial assistance to the firm's home government. Although, there are many items in the government subsidies of China, the accurate criterion that the government subsidies are allocated are not available. Local governments thus, can allocate the government subsidies on their behalf. In return for the fiscal avenue, local government is more likely to allocate government subsidies to large firms or firms with more tax which becomes more pronounced in the regions with poorer fiscal conditions.

Therefore, two sets of testable hypotheses on the soft budget constraint follow:

H_1: Large firms or firms with more tax can get more bank loans, which become more pronounced in the regions with poorer fiscal conditions.

H_2: Large firms or firms with more tax are more likely to get government subsidies, which are more pronounced in the regions with poorer fiscal conditions.

Firm size or firm tax and expropriation of minority shareholders

The extant literature shows that the expropriation of minority shareholders is costly for controlling shareholders (La porta et al., 2002). On the one hand, the expropriation of minority shareholders is usually associated with higher costs of equity financing for the lower market value of the expropriated firms (Bertrand et al., 2002; Cheung et al., 2006). Bertrand et al. (2002), using data for 1301 publicly traded corporations in eight East Asian economies, find that firm value falls when the control rights of the largest shareholder exceed its cash-flow ownership. Cheung et al. (2006) find that during expropriating connected transactions, firms earn significant negative abnormal returns. Chong (2006), using a sample of 1160 firms in East Asian, find that firms with more severe corporate governance problems use significantly more bank, have a higher proportion of short-term debt, and utilize more trade credit.

On the other hand, the expropriation of minority shareholders results in higher cost of debt financing for the firms (Boubakri and Ghouma, 2010; Chaney et al., 2010). Boubakri and Ghouma (2010), collecting data on corporate bond issues in 19 countries from East Asia and Western Europe, explore the impact of the potential expropriation of minority shareholders on corporate debt costs and ratings. They find that such expropriation decreases corporate debt ratings, and increases corporate debt costs. Chaney et al. (2010) find that lower quality reported earnings are associated with higher cost of debt for the non-connected firms. Therefore, the expropriation of minority shareholders may lead the firms to financial distress, and results in the expropriation costs for controlling shareholders.

Firms with soft budget constraint, large firms or firms with more tax, will be rescued by local government with bank loans or government subsidies during financial distress (for example, Kornai et al., 2003). Soft budget constraint thus leads to lower expropriation costs for controlling shareholders. More importantly, controlling shareholders in these soft budget constraint firms can anticipate the rescuing from the local government when involved into financial distress, and thus increases the expropriation of minority shareholders. Furthermore, in the regions with poorer fiscal conditions, local governments tend to intervene in the loan decision of state-owned banks more or allocate more government subsides to large firms or firms with more tax which leads to more severe soft budget constraint for these firms. Therefore, the hypothesis on the agency view of soft budget constraint follows:

H_3: Expropriation of minority shareholders is higher in large firm or firm with more tax which becomes particularly pronounced in the regions with poorer fiscal conditions.

METHODOLOGY

The sample

Chinese listed companies have been required to disclose detailed ownership information in annual reports, including the structures of pyramidal organizational chains, for their controlling shareholders since 2001. The disclosure was incomplete and irregular in the first year, but it has become more systematic ever since. In addition, the study limits the sample to privately-owned firms to examine the expropriation of minority shareholders consistent with the extant literature. The study thus, compiles a list of privately-owned firms presented by CCER database from 2002 to 2006. It started with the complete list of 1608 firm-year observations.

To address successively the issues raised in the introduction, the sample must meet the following criteria. (1) The financial data of the sample firms are available. 14 sample firms are excluded. (2) The sample firms are non-financial firms. This criterion filters out 9 sample firms. (3) The equity of the sample firm is positive. 102 sample firms are excluded. (4) The information whether the sample is listed with IPO or not is available. The means of listing is a significant factor for the bank loans and expropriation of minority shareholders. 17 sample firms are excluded. (5) The cash flow and control rights of controlling shareholders are available. This criterion filters out 6 sample firms. The final sample consists of 1460 firm-

year observations. The data on local fiscal condition are manually collected. The data on cash flow rights, control rights and the ratio of independent board directors are obtained from CCER database. The data on fund occupation by controlling shareholders or firms controlled by the controlling shareholders are obtained from CSMAR database. And the others are obtained from Wind Info database.

Model specifications

Empirical tests in this study are divided into two parts. The first part examines the soft budget constraint of large firms. According to the discussions of section 2, the study uses bank loans and government subsidies to measure the means that local government supports large firms. As to the soft budget constraint of firms with more tax, the empirical results in the robustness tests will be provided. Petersen (2009) examines the different methods used in the presence of a firm effect, such as corporate finance researches. He finds that errors are biased when estimated by OLS, White, Newey-West (modified for panel data sets), Fama-MacBeth, or Fama-MacBeth corrected for first-order autocorrelation. The standard errors clustered by firm are unbiased and produce correctly sized confidence intervals whether the firm effect is permanent or temporary. The fixed effect and random effects model also produces unbiased standard errors but only when the firm effect is permanent. The study thus, uses the methods of standard errors clustered by firm to estimate the models in this paper. Consistent with the extant literature, the following models are used:

$$\begin{aligned} Bankloan = {} & \alpha + \beta_1 Ln(asset) + \beta_2 Ln(asset) \quad Fiscal1 + \beta_3 ROA + \beta_4 Fixed \quad assets / Total \quad assets \\ & + \beta_5 Q + \beta_6 IPO + \beta_7 \%Independent + \beta_8 Ln(employee) \\ & + Industry \quad dummies + \ year \quad dummies + \varepsilon \end{aligned} \tag{1}$$

$$\begin{aligned} Subsidy = {} & \alpha + \beta_1 Ln(asset) + \beta_2 Ln(asset) \quad Fiscal1 + \beta_3 ROE + \beta_4 Fixed \ assets / Total \quad assets \\ & + \beta_5 IPO + \beta_6 Fiscal + \beta_7 Ln(GDP) + \beta_8 GDP \quad growth + \beta_9 Ln(employee) \\ & + Industry \quad dummies + year \quad dummies + \varepsilon, \end{aligned} \tag{2}$$

where *Bankloan* is the ratio of bank loans to total assets. Since government subsidies in 38% sample firms are zero, the study uses dummy variable to measure government subsidies. *Subsidy* is a dummy variable equal to one if the firm gets subsidies from the government and zero otherwise. *Ln(asset)* is the natural log of the firm's total assets. *Fiscal* is the ratio of average fiscal deficit to average fiscal expense of the local province from 2001 to 2005. *Fiscal1* is a dummy variable equal to one if the ratio of the fiscal deficit to fiscal expense is in the top 16 provinces of the 31 provinces and zero otherwise. *Ln(asset)*Fiscal1* interacts *Ln(asset)* with *Fiscal1*. *ROA* is the ratio of net income to total assets. *Q* is defined as the firm market value, which is the book value of liability plus the market value of equity, divided by the book value of assets. Fixed asset/total asset is the ratio of the fixed assets to total assets. *IPO* is a dummy variable equal to one if the firm is listed with IPO and zero otherwise. *%Independent* is the percentage of

independent board directors. *Ln(employee)* is the natural log of the firm's total employees. *ROE* is the average ratio of net income to common equity during previous three years. *Ln(GDP)* is the natural log of the local province's one year lagged GDP. *GDP growth* is the local province's one year lagged GDP growth rate. To ensure the results are not driven by certain industry-wide factors or year factors, the study includes 17 industry dummies and 4 year dummies. According to Equations 1 and 2, the main coefficients of interest of β_1 and β_2 are expected to be positive.

In the second part of empirical testing, the study examines the effects of soft budget constraint (large firms) on the expropriation of minority shareholders. As to the connection between firm tax and expropriation of minority shareholders, the study will provide the results in the robustness tests. Consistent with the extant literature, the following models is used:

$$Tunneling = \alpha + \beta_1 Ln(asset) + \beta_2 Ln(asset) \quad Fiscal1 + \beta_3 Debt + \beta_4 Fixed \quad assets / Total \quad assets + \beta_5 IPO + \beta_6 \% Independen t + Industry \quad dummies + year \quad dummies + \varepsilon \tag{3}$$

,

where tunneling measures the expropriation of minority shareholders. The extant literature mainly uses the following proxies for the expropriation of minority shareholders, the divergence between cash flow and control rights (Bertrand et al., 2002), dividend payouts (Faccio et al., 2001), the premium paid by large private shareholders in order to acquire controlling stakes in state-owned enterprises privatized through mass voucher schemes (Atanasov, 2005), and the connected transactions between publicly listed firms and their controlling shareholders (Cheung et al., 2006). Since the majority of controlling shareholders in our sample are non-tradable shareholders, the premium of controlling stakes is difficult to measure. Lee and Xiao (2004) find that the market reacts positively to the decline of cash dividend in contrast with the American and European literature. They suggest that paying cash dividend is not only used as a way for non-tradable shareholders to liquidate, but also tunneling of tradable shareholders by non-tradable shareholders. Therefore, the premium of controlling stakes and the dividend are not appropriate to measure the expropriation of minority shareholders in listed firms of China.

The study thus uses three proxies for the expropriation of minority shareholders. The first is the divergence between cash flow and control rights (Bertrand et al., 2002). The second is the fund occupation by controlling shareholders or the firms controlled by the controlling shareholders (Deng et al., 2010; Du et al., 2007). In China, controlling shareholders can force listed firms to provide generous trade credits for the business transactions in the form of

Table 1. Summary statistics.

Variable	Mean	Median	Std Dev	Minimum	Maximum
Bankloan	0.27	0.27	0.16	0	0.79
Subsidy	0.62	1	0.49	0	1
Divergence	0.80	1	0.40	0	1
Fund occupation	0.31	0	0.46	0	1
Q	1.54	1.31	0.74	0.84	10.07
Ln(asset)	20.82	20.80	0.83	17.50	23.30
Fiscal	0.39	0.31	0.19	0.17	0.94
Fiscal1	0.33	0	0.47	0	1
Ln(GDP)	8.68	8.78	0.89	4.93	9.99
GDP growth	0.17	0.16	0.23	0.03	0.59
ROA (%)	1.20	2.31	8.74	-86.76	51.02
ROE (%)	-9.81	5.97	161.50	-4492.07	113.32
Fixed asset/total asset	0.31	0.29	0.18	0	0.92
Debt (%)	51.74	53.16	19.17	3.97	99.38
IPO	0.37	0	0.48	0	1
%Independent	0.34	0.33	0.07	0	0.75
Ln(employee)	6.85	6.98	1.33	1.79	10.70

This table presents the summary statistics of the sample. Bankloan is the ratio of bank loans to total assets. Subsidy is a dummy variable equal to one if the firm gets subsidies from the government and zero otherwise. Divergence is a dummy variable equals to one if the control rights of controlling shareholder exceed its cash flow rights and zero otherwise. Fund Occupation is a dummy variable equal to one if the firm has fund occupation in the form of accounts receivable, advance payments and other accounts receivable by controlling shareholders or the firms controlled by the controlling shareholders and zero otherwise. Q is defined as the firm market value, which is the book value of liability plus the market value of equity, divided by the book value of assets. Ln(asset) is the natural log of the firm's total assets. Fiscal is the ratio of average fiscal deficit to average fiscal expense of the local province from 2001 to 2005. Fiscal1 is a dummy variable equal to one if the ratio of the fiscal deficit to fiscal expense is in the top 16 provinces of the 31 provinces and zero otherwise. Ln(GDP) is the natural log of the local province's one year lagged GDP (RMB 100 million). GDP growth is the local province's one year lagged GDP growth rate. ROA is the ratio of net income to total assets. ROE is the average ratio of net income to common equity during previous three years. Fixed asset/total asset is the ratio of the fixed assets to total assets. Debt is the book value of debt over total assets. IPO is a dummy variable equal to one if the firm is listed with IPO and zero otherwise. %Independent is the percentage of independent board directors. Ln(employee) is the natural log of the firm's total employees.

accounts receivable, advance payments and other accounts receivable. Thus, the listed firms are essentially financing the working capital of the controlling shareholders. The third is firm market valuation. Divergence, Fund Occupation and *Q* are respectively used to proxy the expropriation of minority shareholders in different models. Divergence is a dummy variable equals to one if the control rights of controlling shareholder exceed its cash flow rights and zero otherwise. Fund Occupation is a dummy variable equal to one if the firm has fund occupation in the form of accounts receivable, advance payments and other accounts receivable by controlling shareholders or the firms controlled by the controlling shareholders and zero otherwise. Debt is the book value of debt over total assets. The other variables are the same with Models (1) and (2). According to Equation 3, the main coefficients of interest of β_1 and β_2 are expected to be positive if the Divergence or Fund Occupation is used to proxy the expropriation of minority shareholders. And they are expected to be negative if the *Q* is used to measure the expropriation of minority shareholders. The summary statistics of the sample are provided in Table 1

RESULTS

Descriptive statistics for large and small firms

The descriptive statistics for large and small firms are presented in Table 2. It shows that large firms tend to have more tax than small firms, and the difference between them is statistically significant at the 1% level. This result means that large firms have more tax contribution to local government, and are more important to local government.

Large firms have more bank loans than small firms, and the difference between them is statistically significant at the 1% level. On average, large firms have 6.4% more bank loans than small firms. This result is consistent with the prediction of hypothesis 1 and the extant literature (Rajan and Zingales, 1995; Fan et al., 2010). Moreover, large firms are more likely to get subsidies from local government than small firms, and the difference between them is statistically significant at the 1% level. This result is consistent with the prediction of Hypothesis 2.

Though large firms can get more bank loans and are more likely to get subsidies from local government, they have lower market valuation. And the difference between large and small firms is statistically significant at the 1% level. Furthermore, large firms have higher divergence between cash flow and control rights, and more fund occupation by controlling shareholders. And the differences

Table 2. Descriptive statistics sorted by firm size.

	Large firms		Small firms		Difference between large and small firms	
	Mean	Median	Mean	Median	P value (t-test)	P value (Wilcoxon rank-sum)
Ln(tax)	16.874	16.97	15.183	15.45	0.0000***	0.0000***
Bank loan	0.304	0.3	0.240	0.23	0.0000***	0.0000***
Subsidy	0.700	1	0.537	1	0.0000***	0.0000***
Divergence	0.838	1	0.752	1	0.0000***	0.0000***
Fund occupation	0.341	0	0.270	0	0.0031***	0.0031***
Q	1.386	1.21	1.698	1.43	0.0000***	0.0000***

This table presents the descriptive statistics for large and small firms. Large (small) firms have a total asset equal to or greater (less) than the median of the whole sample. The difference tests are based on t-tests for equality in means and a Wilcoxon rank-sum test for equality of medians. Significance at the 1% levels is indicated by ***.

between them are statistically significant at the 1%. These results imply that large firms are associated with more expropriation of minority shareholders than small firms, consistent with hypothesis 3.

The soft budget constraint of large firms

The regression results of the soft budget constraint of large firms are presented in Tables 3 and 4. Consistent with the extant literature (Cull and Xu, 2000; Shleifer and Treisman, 2000; Khwaja and Mian, 2005), bank loan and subsidy are used to measure the means that local government supports large firms. The dependent variables are respectively bank loan and subsidy in Tables 3 and 4. The independent variables and model specifications are shown in Models (1) and (2).

Table 3 provides the regression results of bank loans on firm size. Columns (1) to (2) present the regression results for the whole sample. Columns (3) and Column (4) provide the regression results for bad and good financial condition sub-samples, respectively. The study defines that a firm is in bad financial condition if the sign of net income on total assets (ROA) of the firm is negative.

As reported in Columns (1) and (2), *Ln*(asset) has a positive impact on firm bank loans, and the coefficients are statistically significant at the 1%. This result suggests that large firms can get more bank loans than small firms, consistent with Hypothesis 1 and the extant literature (Rajan and Zingales, 1995; Fan et al., 2010). More importantly, Column (2) shows that bank loans are positively related to the interaction between firm size and local fiscal condition, and the coefficient is statistically significant at the 5% level. This result indicates that the bank loans induced by large firm are more when the firms operate in the provinces with poorer fiscal conditions. Therefore, large firms have higher bank loans than small firms, which become particularly pronounced when the firms operate in the provinces with poorer fiscal conditions providing full support for Hypothesis 1.

As presented in Columns (3) and (4), the study finds that large firms have higher bank loans than small firms in both bad and good financial condition sub-samples and the coefficients are statistically significant at the 1% level, consistent the results of the whole sample. More importantly, the difference between large and small firms is particularly pronounced when the firms are in bad financial condition. This result suggests that large firms get more bank loans from the state-owned banks in bad financial condition, consistent with the soft budget constraint theory. Moreover, the *Ln(asset)*Fiscal1* has a significant impact on firm bank loan in bad financial condition sub-sample, while it has an insignificant impact on firm bank loan in good financial condition sub-sample. These results indicate that local government bails out the large firms via bank loan in bad financial condition more when the firms are located in the provinces with poorer fiscal conditions.

Among the other explanatory variables, the return on assets and the fixed assets over total assets has significantly impacts on firm bank loans consistent with the extant literature (Rajan and Zingales, 1995; Fan et al., 2010). The *Q* has, as expected with the extant literature, a negative impact on firm bank loans, but is not statistically significant. In addition, the *IPO* has a significantly negative impact on bank loans which can be explained by the fact that non-listed private firms often acquire the listed state-owned firms with worse performance to get access to the formal financial system (Du, et al., 2007).

Table 4 presents regression results that link government subsidies to firm size and other variables. Columns (1) to (2) provide the regression results for the whole sample. Columns (3) and (4) provide the regression results for the bad and good financial condition sub-samples respectively. The study also uses the sign of ROA to divide the bad and good financial condition sub-samples. As presented in Columns (1) and (2), government subsidy is positively Correlated with firm size, and the coefficients are statistically significant at the 1% level. This result indicates that large firms are more likely to get

Table 3. The effect of firm size on bank loans

Dependent variable	Whole sample		Bad financial condition sub-sample	Good financial condition sub-sample
	(1) Bank loan	(2) Bank loan	(3) Bank loan	(4) Bank loan
Ln(asset)	0.059*** (0.0096)	0.061*** (0.0096)	0.090*** (0.0224)	0.053*** (0.0093)
*Ln(asset)*Fiscal1*		0.002** (0.0007)	0.004*** (0.0015)	0.001 (0.0006)
ROA (%)	-0.005***(0.0008)	-0.005*** (0.0008)	-0.004*** (0.0012)	-0.013*** (0.0021)
Fixed asset/total asset	0.190*** (0.0397)	0.187*** (0.0390)	0.102 (0.0811)	0.205** *(0.0371)
Q	-0.011 (0.0074)	-0.009 (0.0072)	-0.012 (0.0249)	-0.011 (0.0081)
IPO	-0.075*** (0.0126)	-0.068*** (0.0126)	-0.109*** (0.0409)	-0.058***(0.0125)
% Independent	0.075 (0.0749)	0.089 (0.0740)	0.028 (0.1783)	0.154 (0.0741)
Ln(employee)	-0.009 (0.0063)	-0.010 (0.0064)	-0.006 (0.0131)	-0.009 (0.0063)
Industry dummies	Control	Control	Control	Control
Year dummies	Control	Control	Control	Control
Constant	-0.881*** (0.1862)	-0.932*** (0.1844)	-1.549*** (0.4786)	-0.813*** (0.1760)
Observations	1457	1457	237	1220
R^2	0.316	0.325	0.337	0.351

This table presents the effect of firm size on bank loans. The dependent variable is bank loan. Bad financial condition sub-sample includes firms whose net income on total assets (ROA) is negative. Good financial condition sub-sample includes firms whose ROA is positive. Because three data on employees are not available, the observations of whole sample are 1457. Robust standard errors clustered by firms are presented in parentheses. Significance at the 1, 5, and 10% levels is indicated by ***, **, and *, respectively.

government subsidies than small firms, consistent with Hypothesis 2. More importantly, Column (2) reports that the interaction between firm size and local fiscal condition has a positive impact on the probability that the firms get government subsidies, and the significance of the coefficient is close to 10% level (p=0.104). This result suggests that large firms are more likely to get government subsidies when the firms operate in the provinces with poorer fiscal conditions. Therefore, large firms are more likely to get government subsides than small firms, which becomes particularly pronounced when the firms operate in the provinces with poorer fiscal conditions providing full support for Hypothesis 2.

As presented in Columns (3) and (4), large firms are more likely to get government subsidies in both bad and good financial condition sub-samples and the coefficients are statistically significant at the 1% level, consistent with the results of the whole sample. More importantly, the difference between large and small firms is particularly pronounced when the firms are in bad financial condition. This result suggests that large firms get more government subsidies in bad financial condition, consistent with the soft budget constraint theory. In addition, the *Ln(asset)*Fiscal 1* has the expected sign but is not statistically significant in bad or good financial condition sub-samples.

Among the other explanatory variables, Columns (1), (2) and (4) show that: firms with more employees are more likely to get govern-ment subsidies, suggesting that local government tends to help firms with more employees with government subsidies; Firms in the provinces with poorer fiscal conditions are less likely to get government subsidies; The *IPO* has a positive impact on the probability that a firm gets govern-ment subsidies; And the fixed assets over total assets, local GDP and GDP growth have negative impacts on government subsidies. How-ever, local fiscal condition, IPO, the fixed assets over total assets, local GDP and GDP growth do not have significantly impact in the bad financial condition sub-sample.

In sum, the regression results in Tables 3 and 4 suggest that local government is more likely to support large firms with bank loans and government subsidies, which becomes particularly pronounced when the firms operate in the provinces with poorer fiscal conditions and when

Table 4. The effect of firm size on government subsidies.

Dependent variable	Whole sample		Bad financial condition sub-sample	Good financial condition sub-sample
	(1) Subsidy	(2) Subsidy	(3) Subsidy	(4) Subsidy
Ln(asset)	0.696*** (0.1423)	0.684*** (0.1417)	0.987*** (0.2815)	0.633*** (0.1544)
*Ln(asset)*Fiscal1*		0.024 (0.0143)	0.011 (0.0313)	0.022 (0.0151)
ROE (%)	-0.001** (0.0006)	-0.001** (0.0006)	-0.002* (0.0010)	-0.002 (0.0027)
Fixed asset/total asset	-0.985* (0.5708)	-0.984* (0.5714)	-1.779 (1.4955)	-1.021* (0.5792)
IPO	0.466** (0.1922)	0.479*** (0.1929)	0.620 (0.5112)	0.455** (0.2061)
Fiscal	-3.780*** (0.8565)	-4.896*** (1.0377)	-3.052 (2.3011)	-5.054*** (1.1091)
Ln(GDP)	-0.535*** (0.1935)	-0.574*** (0.1894)	-0.190 (0.3736)	-0.635*** (0.2066)
GDP growth	-0.368** (0.1749)	-0.419** (0.1778)	-6.210 (4.4558)	-0.478** (0.1902)
Ln(employee)	0.179** (0.0899)	0.185** (0.0897)	0.347** (0.1711)	0.179* (0.1020)
Industry Dummies	Control	Control	Control	Control
Year Dummies	Control	Control	Control	Control
Constant	-8.721*** (3.2299)	-7.946** (3.2581)	-19.470*** (6.4367)	-6.035* (3.5621)
Observations	1457	1457	237	1220
R^2	0.164	0.166	0.258	0.163

This table presents the effect of firm size on government subsidies. The dependent variable is subsidy. Bad financial condition sub-sample includes firms whose net income on total assets (ROA) is negative. Good financial condition sub-sample includes firms whose ROA is positive. Because three data on employees are not available, the observations of total sample are 1457. Robust standard errors clustered by firms are presented in parentheses. Significance at the 1, 5, and 10% levels is indicated by ***, **, and *, respectively.

Table 5. Regression analysis of expropriation of minority shareholders.

Dependent variable	(1) Divergence	(2) Divergence	(3) Fund Occupation	(4) Fund Occupation	(5) Q	(6) Q
Ln(asset)	0.398*** (0.1517)	0.397*** (0.1508)	0.190* (0.1070)	0.193* (0.1060)	-0.270*** (0.0486)	-0.271*** (0.0484)
*Ln(asset)*Fiscal1*		0.040*** (0.0137)		0.017* (0.0095)		-0.007*** (0.0024)
Debt	0.004 (0.0059)	0.003 (0.0060)	0.015*** (0.0050)	0.015*** (0.0050)	-0.003** (0.0015)	-0.003** (0.0014)
Fixed asset/total asset	0.176 (0.6934)	0.103 (0.6803)	-0.455 (0.5402)	-0.519 (0.5450)	-0.160 (0.1587)	-0.142 (0.1557)
IPO	-0.987*** (0.2629)	-0.901*** (0.2699)	0.254 (0.2067)	0.308 (0.2095)	-0.053 (0.0563)	-0.074 (0.0590)
%Independent	-3.191** (1.4151)	-2.917** (1.3942)	0.356 (1.0783)	0.496 (1.0854)	0.027 (0.3297)	-0.032 (0.3300)
Industry Dummies	Control	Control	Control	Control	Control	Control
Year Dummies	Control	Control	Control	Control	Control	Control
Constant	-5.927** (3.0153)	-6.231** (2.9921)	-6.021*** (2.1803)	-6.257*** (2.1837)	7.514*** (1.0373)	7.597*** (1.0391)
Observations	1460	1460	1460	1460	1460	1460
R^2	0.108	0.124	0.035	0.039	0.284	0.291

This table presents the regression analysis of the determinants of expropriation of minority shareholders. In Columns (1) and (2), the dependent variable is divergence. In Columns (3) and (4), the dependent variable is fund occupation. In Columns (5) and (6), the dependent variable is Q. Robust standard errors clustered by firms are presented in parentheses. Significance at the 1, 5, and 10% levels is indicated by ***, **, and *, respectively.

the firms are in bad financial condition. Large firms thus, face soft budget constraint.

Soft budget constraint and expropriation of minority shareholders

The regression results of the effects of soft budget constraint on the expropriation of minority shareholders are presented in Table 5. As shown in Tables 3 and 4, large firm is used to proxy the soft budget constraint. Divergence, fund occupation and *Q* are used to measure the expropriation of minority shareholders in different models. The variables and model specifications are shown in model (3).

In Columns (1) and (2), the dependent variable is the divergence between cash flow and control rights. The divergence between cash flow and control rights is positively related to firm size, and the coefficients are statistically significant at the 1% level. Moreover, the interaction between firm size and local fiscal condition has a significantly positive impact on the divergence between cash flow and control rights. These results suggest that the controlling shareholders in large firm tend to separate the control rights from cash flow rights, which becomes particularly pronounced when the firms operate in the provinces with poorer fiscal conditions.

In Columns (3) and (4), the dependent variable is the fund occupation by controlling shareholders or the firms controlled by the controlling shareholders. Large firms tend to have higher fund occupation than small firms, and the coefficients are statistically significant at the 10% level. Moreover, the interaction between firm size and local fiscal condition has a significantly positive impact on fund occupation. These results suggest that the controlling shareholders in large firms are more likely to force listed firms to provide generous trade credits for them, which becomes particularly pronounced when the firms operate in the provinces with poorer fiscal conditions.

In Columns (5) and (6), the dependent variable is the market valuation of the sample firm. Large firms have lower market valuation than small firms, and the coefficients are statistically significant at the 1% level consistent with the extant literature (Jensen, 1986; Albuquerue and Wang, 2008). Moreover, the interaction between firm size and local fiscal condition has a significantly negative impact on firm market valuation. These results suggest that minority shareholders value large firms less, which becomes particularly pronounced when the firms operate in the provinces with poorer fiscal conditions.

Among the other explanatory variables, Columns (3) to (6) show that the total liability over total assets has a significantly positive impact on fund occupation, and a negative impact on firm market valuation. The ratio of independent board directors has a significantly negative impact on the divergence between cash flow and control rights, while an insignificant impact on the fund occupation by controlling shareholders and firm valuation.

In sum, the regression results in Table 5 suggest that soft budget constraint can deteriorate the expropriation of minority shareholders, providing full support for Hypothesis 3 and the argument that controlling shareholders are able to derive greater private benefits in large firms (Jensen, 1986; Albuquerue and Wang, 2008).

The robustness tests

The government subsidies are obtained from income statement directly. This measure includes a list of indexes where value added tax refund is affected by the regulation of taxation in China. Local government thus may prefer to control the allocation of other government subsides rather than the value added tax refund.

Therefore, this study excludes the value added tax refund from government subsidies and redoes the regressions in Table 2 and Table 4. The study also finds that large firms are more likely to get government subsides than small firms, which becomes particularly pronounced when the firms operate in the provinces with poorer fiscal conditions and when the firms are in bad financial condition.

The study uses dummy variable *divergence* to measure the expropriation of minority shareholders. When this study uses the difference between the cash flow and control rights of controlling shareholders to proxy the expropriation of minority shareholders, the similar results with Table 5 are gotten.

This study uses firm size to proxy the soft budget constraint. When firm tax is substituted for firm size, this study finds the similar results except that the coefficients of total tax in Columns (2) and (4) of Table 5 become statistically insignificant.

Conclusions

What is the connection between soft budget constraint and expropriation of minority shareholders? The study has shown first-hand evidence in China's transition economy. To our knowledge, it is the first study that examines the connection between soft budget constraint and expropriation of minority shareholders. In China's transition economy, large firms or firms with more tax have much more contributions to local fiscal revenue. Local government has a strong motive to support these firms with bank loans or government subsidies because the local government has much impact on the bank loans of local state-owned banks and the allocation of government subsidies. Therefore, large firms or firms with more tax face the soft budget constraint. More importantly, controlling shareholders in soft budget constraint firms can forecast the rescue of local government when the firm is

government when the firm is in trouble, which lowers the expropriation costs of controlling shareholders and subsequently deteriorates the expropriation of minority shareholders.

Consistent with these hypotheses, the study finds that, compared to small firms, large firms have higher bank loans and are more likely to get government subsidies, and these differences between them become particularly pronounced when the firms operate in the provinces with poorer fiscal conditions and when the firms are in bad financial condition; large firms show higher divergence between cash flow and control rights, more fund occupation by controlling shareholders or the firms controlled by the controlling shareholders, and lower market valuation, and these differences between them become particularly pronounced when the firms operate in the provinces with poorer fiscal conditions. When firm tax is substituted for firm size, the similar results are gotten.

The findings have implications for researches and policy makers on the soft budget constraint. The results suggest that soft budget constraint exists in private firms in addition to state firms; soft budget constraint has a significant effect on the conflicts of interest between large shareholders and minority shareholders (for example, Johnson et al., 2000) in addition to the conflicts of interest between managers and shareholders (for example, Jensen and Meckling, 1976).

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