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What are the Sources of Financing of the Chinese Firms?

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Abstract

It appears to be common knowledge that external financing in China is mostly limited to state-owned firms and is hard to obtain for smaller private firms. In this paper we take a closer look at internal and external, formal and informal, financing sources of Chinese firms during the period of rapid economic reform in 1997 – 2006. To this end we analyze balance-sheet data from Chinese Industrial Surveys of Medium-sized and Large Firms for 2000-2006 and survey data from the Large-Scale Survey of Private Enterprises in China that was conducted in 1997, 2000, 2002, 2004, and 2006.

The following stylized facts emerge from our analysis: (1) State-owned firms continue to enjoy significantly more generous external finances than other types of Chinese firms; (2) Chinese private firms have resorted to various ways to overcome financial constraints, including increasingly more mature informal financial markets, cost-saving through lower inventory and other working capital requirements, and greater reliance on retained earnings; (3) There are substantial variations in financial access among private firms: While the small private firms face more financial constraints, the more established large private firms seem to have access to finances that are more equal to their SOE counterparts; and, (4) There is some evidence that financial access of small private firms, especially to formal bank loans, has improved moderately in the past decade.

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1. Introduction

The importance of finances in economic development has long been advocated and empirically tested in the economic literature. As early as 1911, Schumpeter linked the importance of financial services to firms' capacity in engaging technological innovation and thus a country's ability in economic development. Based on country-level analyses, King and Levine (1993) provide evidence that multiple indicators of financial development are not only positively correlated with the present levels of multiple economic indicators but also their future values. Using industry level data for a large number of countries, Rajan and Zingales (1998) show that industries with higher external finance requirements tend to grow faster in countries with more developed capital markets. In the Chinese context, Cull and Xu (2005) provide evidence that firms with more access to bank loans are more likely to reinvest.

Thus, one big puzzle in China's rapid economic growth in the past three decades relates to the financial sector. On the one hand, the Chinese economy has experienced one of the fastest growth rates in the world continuously since the late 1970s, partly driven by the rapid development of the private sector, which outpaced the growth rate of the state sector. On the other hand, the vast majority of researchers believe that the formal financial sector in China lacks efficiency by many standards.

Lardy (2004) provides an overview of the historical background of Chinese economic reforms and argues that reforms in the product and labor markets had been much faster than those in the financial market. While the Chinese economy is very close to completing the transition from planned to market on the product and labor markets, interest rates are still subject to government intervention to a large degree. The work by Cull and Xu provides further evidence that there were reversals in the reforms of the financial sector (or banking sector) in the 1990s. In particular, Cull and Xu (2000, 2003) show that in the late 1980s banks proved to be more efficient in allocating funds to more productive and more profitable firms than bureaucrats in charge of direct government transfers; but by the mid-1990s, the correlation between loans and productivity (or profitability) has disappeared (or weakened) as banks increasingly assumed bailout responsibility.[1]

Other studies provide evidence that private firms, which are the most productive and profitable firms in China, have been discriminated against in the financial market. Using matched bank-firm data from two coastal provinces in China, Brandt and Li (2003) provide direct evidence that in 1994 and 1997 private firms were discriminated against by township branches of the Agricultural Bank of China (one of the "Big Four" in China) and the local Rural Credit Cooperatives, compared to township enterprises, in two main ways: (1) Private firms were less likely to obtain a loan; (2) More loan collaterals were required for private firms. In addition, Ferri and Liu (2009) use a representative sample of Chinese firms to show that the cost

[1] This is contrary to the finding by Demetriades *et al.* (2008), who show that bank loans are positively correlated with firm productivity in China.

of financing is significantly lower for SOEs than for non-state firms. Using a survey data covering all regions in China between 2002 and 2004, Dollar and Wei (2007) show that on average Chinese domestic private firms have significantly higher returns to capital than SOEs, implying more funds going to the SOEs, an inefficient allocation of financial resources. Using the GMM to estimate the investment Euler equation models (based on a balanced panel of medium-to-large firms for 2000-2004), Liu and Siu (2006) similarly show that the "implied" cost of capital derived from their estimated structural parameters is substantially higher for private firms and foreign invested firms than for SOEs in China.

In addition to allocating credit inefficiently among state owned firms, Boyreau-Debray and Wei (2005) show that in the 1990s the Chinese financial system was associated with low efficiency of allocating funds across regions (low capital mobility across regions) and low efficiency in providing consumption risk sharing for households. More generally, Hsieh and Klenow (2009) estimate that Chinese manufacturing sector could potentially improve its total factor productivity by 30-50% through more efficient capital allocation.

The existence and the continued failure to resolve these problems are discussed in Dobson and Kashyap (2007), where the authors argue that China's gradualist approach to reform largely accounts for its continued struggle in reforming the financial sector. This is a very astute observation. A related way of viewing the continued difficulty in reforming the financial sector in China is that it has shouldered much of the reform costs in China since the beginning of the reform era. In doing so, many of the obstacles encountered in reforming the fiscal system, the exporting sector, and the SOEs have been overcome by shifting them away from the targeted sectors to the banking sector.

Thus it may only be natural that during the first two decades of China's reforms the financial sector was the least reformed in the economic realm. For example, when SOEs were required to become independent accounting units subject to hard budget constraints in the 1980s, they first had to be weaned away from direct government budgetary funds. The banks, newly born at that time, were recruited to offer loans to replace the direct government transfer, often without regard to efficiency standards, at least in the early period. Other examples include preferential bank loans offered to SOEs in the 1990s to help discharge former employees when they went through "restructuring" (which often was a thinly veiled privatization).

Since the mid-1990s, the government has gone through multiple rounds of reforms to help transform the old financial institutions into authentic commercial banks. And by the end of 2006, in preparation for China's commitment to open its domestic financial market under the WTO rules, most of China's Big Four have obtained foreign partners as shareholders, and have been listed on foreign stock exchanges although the government still maintains controlling stake in these banks.

A puzzle related to the discussion above is that, in spite of the numerous inefficiencies in the financial sector, the Chinese economy has maintained one of the fastest growth rates in human history. In particular, private firms have proved to be the most energetic and productive sector in the economy, with private sector share in total national industrial output quickly rising from less than 1% in 1978 to 23% in 2006.[2]

So, how can we explain the apparent paradox of a fast growing private sector combined with a formal financial sector that is often unwilling to lend and that allocates funds inefficiently when it lends? Allen, Qian, and Qian (2005, 2007) argue that the informal financial sector must have somehow compensated for the inefficiency of the formal financial market in China such that the private sector has been able to develop rapidly. Following this argument, one big task for researchers is then to investigate what informal mechanisms exist and how they work to alleviate the financial obstacles faced by Chinese private firms.

Various authors have pursued this line of research to study the development of informal mechanisms to overcome financial constraints or facilitate firm finances in China, and several mechanism have been suggested in these studies. First of all, internal finances are an importance source for firm finances in China, whether they are private firms or SOEs (Lardy 1998, 2004; Allen, Qian, and Qian 2005). Lardy (2004) points out that in 2002 close to 50% of investment was funded by firms' own retained earnings in China. In addition, Allen, Qian, and Qian (2005) discuss the important role of funds from family, relatives, and friends in both the start-up stage and the continued growth period of private firms.

Another potential channel for funding private firms is trade credit, especially from the state-owned to the private sector (Ge and Qiu 2007; Cull, Xu, and Zhu 2009). Still other papers have discussed the role of foreign direct investment (FDI) as a source of finance for Chinese firms, especially for Chinese private firms. Based on case studies, Huang (2004) argues that private firms have faced the highest degree of financial constraints in China throughout the reform era, which explains to a large degree the rapid inflow of foreign direct investment (FDI) into China, as the FDI serves to ease the financial constraints faced by Chinese private firms. Hèricourt and Poncet (2008) use data from a World Bank survey of Chinese firms to provide supporting evidence of Huang's argument. Poncet, Steingress, and Vandenbussche (2008) further confirm this finding using the annual industrial survey data.

Finally, rather than studying the supply of funds, at least one paper addresses the issue of private firm finances from the demand side. Using firm-level data from China's two recent censuses (Industry Census 1995 and Economic Census 2004) and a new measure of industry proximity, Long and Zhang (2010) show that Chinese firms have become more interconnected during this period, which helps ease firms' credit constraints through two mechanisms: (1) Finer division of labor among interconnected firms lowers the capital barriers to entry and, (2) closer proximity makes the provision of trade credit among firms

[2] Authors' own calculation using the Statistical Yearbook of China from various years.

easier. The authors thus argue that other institutional innovations such as those in production organizations could serve to alleviate firms' financial constraints.

Consistent with this discussion in the literature, we pursue two main tasks in the paper. First, we investigate whether in 2006, the last full year before the outbreak of the liquidity crisis and the global recession, private firms still had a more restricted access to formal external finance than the SOEs, despite all the reforms. Second, once we establish that indeed private firms still find it hard to access formal external finance, we study sources private firms use to substitute for external finance, such as informal lending, trade credit, and internal funds, and suggest additional mechanisms through which Chinese private firms resolve difficulties in accessing finances.

The rest of the paper is organized as follows. Section 2 describes our data; Section 3 compares different firms in their financial access; while Section 4 explores how Chinese private firms obtain finances. Section 5 concludes with a discussion on how Chinese firms' financial access has evolved during the 1996-2006 period.

2. Data

Our data come from two main sources. First, we use balance sheet and ownership information from the Chinese Industrial Surveys of Medium-sized and Large Firms for 2000-2006, which includes all state-owned firms and firms of other ownership types that are in excess of a certain scale. This data set is commonly referred to as the National Bureau of Statistics (NBS) manufacturing census, and is an unbalanced panel with a total of 496,738 firms for 2000-2006.[3] For short, we will refer to this data set as the "census" data. We use two versions of these data – the cross-section of firms in the last year of our sample (297,665 firms) and a balanced panel that only includes firms that were in our data in each of the years 2000-2006 (48,382 firms, 338,674 observations).

Second, we use survey data from the Large-Scale Survey of Private Enterprises in China jointly conducted by the All China Federation of Industrial and Commerce (ACFIC) and the United Front of the Chinese Communist Party in 1997, 2000, 2002, 2004, and 2006, often with help from the Bureau of Industry and Commerce. This survey is a repeated cross-section in which firms are not matched across years. The total of 18,527 firms are surveyed over all the years, and only private firms are included. For short, we will refer to this data set as the "survey" data.

[3] While the raw data includes 622,424 firms, after we drop observations with missing values for year, location, industry code, duplicates or near duplicates, as well as observations with key variables that appear erroneously reported or missing, we are left with 496,738 firms in the unbalanced panel data set.

The census data covers firms of all ownership types, including those with foreign capital share. We classify firms by ownership types in two ways – by the registration type, and by the type of investor holding the majority share of paid-up capital. While the first measure may be outdated, as the registration of the firm may not change as soon as capital structure changes, it is possible that registration type, rather than *de facto* ownership structure determines the access to financing. We will refer to the two classifications as the *de jure* ownership type (by registration) and the *de facto* ownership type (by actual shares).

Table 1 shows, using the 2006 cross-section, that in most cases there is a pretty good match between the two classifications. Note that one exception is the set of firms with the majority share held by "legal person," which are mostly registered as private firms, but could also be in other categories. In what follows, we will analyze results using both classifications, but to spare the reader from all the details, we will only report results of *de facto* classification analysis and point to the differences wherever they arise.

While the census data mainly include medium and large firms, there are small firms in the data set as well, both because all SOE firms are included in these data sets and due to time lags in excluding firms that have fallen below the size threshold. For the purposes of our analysis, we classify all firms into four groups – small firms with assets less than 40 thousand RMB, medium firms with assets between 40 and 400 thousand RMB, large firms with assets between 400 thousand and 4 million RMB, and giant firms with assets exceeding 4 million RMB. The top panel of Table 2 gives the distribution of firms in 2006 from the NBS census data by these size categories and their *de facto* ownership type, for both our 2006 cross-section and the firms that were in the data set continuously since 2000. The panel shows that small firms are predominantly private, while giant and large firms are mostly state-owned, and that the balanced panel data set includes disproportionally fewer small and private firms. Panel B of the table shows the size distribution of firms in the private firm survey data for both the pooled sample of 2000-2006 and for the 2006 survey. We can see that the private firm surveys almost exclusively covers small firms and as a result include many small private firms that are excluded from the census data.

3. Do State-Owned Firms Have Easier Access to External Financing?

As discussed previously, a main indicator of how efficiently the financial system operates in China is whether banks treat firms of different ownership types differently when extending loans to them. Thus we first study how SOEs differ in their access to formal loans as compared to private firms.

Using the sample of all firms in the last year of our census data, 2006, we first confirm that state-owned firms, regardless of their size, still have easier access to external financing: they tend to have higher leverage (debt/total assets) and a higher share of financial expense in total expense, while they pay half

as much per unit (RMB) of their external financing as private firms (see Table 3).[4] Repeating the same analysis for the balanced panel of the firms we see that while leverage was more or less unchanged during our sample period for SOEs, for private firms, holding the sample constant, it, in fact, declined. Moreover, for older and larger private firms that were in our sample since 2000, leverage is in fact a bit higher than for SOEs and is declining. If we include new firms, however, in our 2006 sample, average leverage of the private firms is substantially lower than in the balanced sample, suggesting that new entrants have more restricted access to financing than older private firms and than SOEs. The leverage of smaller private firms, the ones included in our survey data, is less than half of the private firms in the census, indicating that access to finance is particularly hard for young small private firms.

One possibility is, therefore, that differences in access to finance are not due to ownership per se, but rather reflect the fact that private firms are on average younger and smaller and therefore lack credit history and reputation. We address this difficulty in interpretation in two ways: by estimating the effects of ownership controlling for size, liquidity, and profitability in a regression analysis that we discuss later, and by focusing on small firms in the survey data. It is important to emphasize in this regard that the NBS census data that focus on large and medium-sized firms, therefore, could not be the only information source for studying the financial access of Chinese private firms. And this is particularly the case for the balanced firm panel that disproportionally includes large firms. Thus we call for caution when interpreting the results from the balanced panel analysis.

Looking at the share of financial expense in total expense, we find that even in the balanced panel that share is a lot lower for private firms than for the SOEs. It becomes even lower once we include all firms in our 2006 cross-section. At the same time, interest expense as a ratio to total debt is almost twice as high for private firms as it is for SOEs, in both cross-section and balanced panel. This indicates that when private firms do access external finance, they pay more for it than SOEs. In addition, we see that total financial expenses and interest expenses have declined on average for SOEs during our sample period, while they remained basically unchanged for private firms.

While we cannot directly measure informal external financing using our census data, we can use accounts payable and accounts receivable as proxies. For instance, a high share of accounts payable in total debt may suggest that firms have to rely on trade credit to finance their operating expenses when other forms of credit are not available. Table 4 shows, for our full-sample cross-section in 2006, that the share of accounts payable in total debt is much lower for the state-owned firms. The pattern is the same in our balanced sample and did not change much since 2003, when these variables were first reported in

[4] Note that the per unit cost for external financing computed here is different from the average interest rate for at least two reasons: (1) A firm's total debt may include liabilities not bearing interest payments such as various accounts payable, and (2) Even if the firm's total debt comprises only interest-bearing bank loans, the year-end total debt may not correspond to the amount of bank loans that incurred the interest payment in that year. However, this ratio still gives a proxy for the average cost of obtaining finances faced by firms of different types.

the census data.[5] Lower share of accounts receivable in total assets for the state-owned firms also suggests that they tend to engage less in informal financing.

This interpretation of trade credit as a substitute for other forms of credit is further confirmed by the fact that as a ratio of total sales, state-owned firms have higher accounts payable and accounts receivable than private firms. Together with the previous fact, this implies that even though state-owned firms use trade credit more actively in their transactions than private firms, trade credit still comprises a higher portion of all liabilities for private firms than for state-owned. Furthermore, as we will discuss in more detail below, private firms may be trying to reduce their need for financing through better management of their accounts payable and accounts receivable.

As we mentioned earlier, one potential reason for state-owned firms' easier access to finances could be their better creditworthiness rather than prejudice against private firms in the formal financial sector. To see whether this is the case, we test whether the apparent SOE advantage in accessing external credit persists when we control for size and measures of creditworthiness. Table 5 reports the results of the regression analysis that conducts this test in the 2006 cross-section. We do see that at least for leverage size matters as well – once we control for log of assets, the coefficient on the SOE dummy falls by about half, indicating that half of a difference between leverage in private firms and SOEs in the 2006 census cross-section is due to the fact that state firms tend to be larger. Nevertheless, we still find that state-owned firms have significantly higher leverage, a larger ratio of financial to total expenses, and a lower share of accounts payable in total debt, even after controlling for size, profitability, and liquidity measures. These findings confirm that state-owned firms have easier access to formal external finance and rely less on internal and informal finance than other firms.

We repeat this analysis for the balanced panel to see what the trends were between 2000 and 2006 (or between 2003 and 2006 in the case of accounts payable over debt). To this end, we interact the indicator for majority state-owned firms with the time trend and we estimate a panel regression by GLS with random effects. We find that although in our balanced panel sample the leverage is roughly the same for private firms and SOEs, two other measures indicate that even for this sample, which only includes larger and older private firms, the private firms have more difficult access to credit. While these differences between state-owned and other firms diminish over our sample period, the rate of convergence is very slow for the share of financial and interest expenses.

Another angle to study the availability of external finances to firms is to explore the firm's reliance on internal finances (Fazzari et al. 1988). This approach has faced criticisms previously for two reasons. First of all, it lacks theoretical foundation (Kaplan and Zingales 1997, 2000). In addition, Kaplan and Zingales find that some firms that appear less financially constrained actually exhibit greater sensitivities than firms

[5] We do not present the balanced panel results in the interest of space.

that appear more financially constrained, because the former firms are high performance firms that may find it particularly attractive to invest the internally generated funds in their own investments. These two criticisms are less worrisome for a study of Chinese firms. As China is a case where financial constraints mainly result from asymmetric information, as is true for developing countries in general, Povel and Raith (2001) provide a theoretical model predicting that there is positive correlation between internal funds and investment in firms facing constraints and that such correlation is stronger for more constrained firms. Empirically, state firms in China, which are conventionally believed to be less financially constrained, tend to have inferior performance compared to private firms.

Thus to verify that state-owned firms are less reliant on internal finance, we run simple regressions of investment (a change in fixed capital less depreciation from a previous year) on cash flow (after tax profit) by ownership type. Because computing investment requires information about firms in at least two years, we conduct this analysis only for the balanced panel of our census data. Table 7 shows the results of random effects GSL regression for the full sample and of OLS regressions estimated separately for each ownership type for each year. We can see that even for this sample, which only includes older and larger private firms, for the state-owned and foreign-invested firms the dependence of investment on cash flow is much lower than for private and collective firms, as indicated by both the lower coefficient on cash flow and the lower R-squared. This means that state-owned firms, unlike private and collective firms, are free to invest regardless of the availability of their internal funds, i.e. can use external credit. This result is robust to controlling for firm size and leverage (we do not report these results in the interest of space). Over time, at least throughout our sample period, we do not observe a decline in the reliance of private or collective firms on internal finance by this measure.

4. How do Private Firms Finance Themselves?

Our findings above suggest that as late as 2006, SOEs still enjoy better access to external finances, both in bank loans and in trade credit. The natural question then is: how do Chinese private firms finance their fast growth? As discussed above, the NBS data set has very little information on small private firms. Thus we will need to rely on the private entrepreneur survey data to explore this issue. We will first look at survey responses from private firm owners on how they resolve financial constraints, and then we will use both the NBS census data and the private firm survey data to evaluate the various mechanisms for private firm financing.

4.1 Survey Responses

Initial Finances

Firms included in the survey data are exclusively private firms, as shown in Table 8, which gives the average composition of equity for firms included in the survey. The predominant majority of firm shares (96.6%) are owned by the private owner of the firm, other private individuals, or other private firms, whereas foreign capital as well as investment from collective firms and SOEs plays insignificant roles in financing private firms. Table 9 shows that such ownership structure has very much remained unchanged since the founding of these firms. How did the private owners fund the firm's initial investment? Information provided in Table 10 suggests that the vast majority of firm owners relied on their own savings from previous work (80% of the respondents), a large percentage (42%) received financial help from other individuals (including relatives and friends), 30% obtained loans from banks and other formal financial institutions, and a very small number (less than 5%) used inheritance in starting the firm.

Ongoing Finances

The percentage of firms that received initial help from banks and other formal financial institutions (30%, from Table 10) is surprisingly high. A similar surprising finding comes from Table 11, which summarizes the sources of ongoing finances for private firms: A large percentage of private firms continue to secure loans from banks and other formal financial institutions during their ongoing operations (41%). In comparison, only 25% of firms in our sample have obtained loans from informal channels. In terms of loan amounts, slightly more than half of an average private firm's total debt is loans from banks or other formal financial institutions, with the rest almost equally accounted for by informal finances and trade credit (or accounts payable). In particular, the ratio between the average amount of bank loans and that of informal finances (excluding trade credit) is slightly above two, implying that bank loans play a much more important role in firm finances than informal finances (see Table 11). Furthermore, the percentage of firms using informal loans has shown a continuous decrease (from 27% in 2000 to 23% in 2006), probably implying a smaller need for informal finances over time.

Financing Costs of Private Firms

An additional angle to study the financial access of Chinese private firms is through their financial costs. For two of the survey years we have detailed information on the interest rates paid by private firms to obtain various kinds of loans, as well as the time structures of these loans. Forty-three percent of private firms in our sample were able to obtain bank loans at the government stipulated interest rate (of 5.84%) in 2000, 9% obtained bank loans at higher interest rates (8.85%), while 29% got informal loans at rates similar to that of bank loans with adjusted rates (8.17%). On average, the loans obtained are short-term

loans, with the average term of bank loans at 9.5 months, whereas the term of informal loans is slightly longer at a little over 11 months.

One finding that is somewhat surprising is how similar interest rates charged by banks are to those charged for informal loans. This suggests that the formal financial sector and the informal financial sector in China may be better integrated than we thought. As the usual concern with firms' reliance on the informal financial sector is the lack of efficiency of the informal financial sector in allocating funds, the above evidence may suggest that the informal financial sector may be operated more efficiently than originally thought.

Are Private Firms Financially Constrained?

Despite the surprisingly high proportion of private firms with access to formal finances, the concern with private firms' financial constraints remains. Compared to firms of other ownership types (and even private firms of larger size), the private firms in the survey data have substantially lower leverage (see Table 3).[6] This may suggest that Chinese private firms, especially younger and smaller ones, have much less access to external finance than firms of other ownership types, especially SOEs, and therefore are likely to face financial constraints.

The importance of informal finances and trade credit can also be demonstrated by comparing total debt and the total amount of funds needed. In the private firm surveys, firms report two types of funds needed: daily working capital and funds for expansion. The survey data suggest that the daily working capital requirement is easily fulfilled by bank loans (as the ratio between bank loan amount and the working capital amount is substantially greater than 1), although neither informal loans nor trade credit alone can fully cover it, amounting to 76% and 93% of daily working capital, respectively. But when expansion funds are included, bank loans alone are not sufficient even when informal loans are included – without informal loans, bank credit covers only 74% of expansion funds, with informal loans, 89%. In fact, only with the addition of accounts payable can the total debt cover the total funds needed, and then barely – the ratio of total debt to total required funds is 1.02.

Therefore, both informal loans and trade credit are essential for the healthy growth of private firms, although they are relatively small in magnitude. In other words, private firms would be financially constrained without the informal financial mechanisms such as informal loans and trade credit. This pattern is confirmed by the responses from firms to questions on whether they face difficulty in obtaining finances, which were asked in 1995 and 2000. In both years, over 70% of firms gave affirmative answers to the above questions (Table 11)

[6] Trade credit is included as part of liabilities.

One caveat, however, is that the above discussion ignores the compatibility in the time structures of debts and capital required. As both formal and informal loans are mostly short-term ones in China, and so are accounts payable, it may not be feasible to provide expansion funds with the formal and informal credit discussed above. In addition, note that the above calculation does not include the actual investment made in the current year. In contrast, the previous discussion on retained earnings suggests that the main source for such longer-term investment is most likely firms' own retained earnings (from after-tax profit, see Table 12).

To summarize, the responses from private firm owners suggest that the initial funds for Chinese private firms come mainly from informal channels (personal saving and support from family/friends), while ongoing finances have relied more on formal finances such as bank loans and increasingly so over time. And private firms do face financial constraints, but they have been more able to overcome financial constraints over time. We now turn to the specific mechanisms outlined in the literature for finances of private firms in China.

4.2 Financing Mechanisms for Chinese Private Firms

Informal Finances

Undoubtedly, informal finances, especially informal loans, play an important role in firms' everyday operations, amounting to about a third of firms' daily financial needs. An overview of the informal financial market in China may be helpful here.

By one account, the total amount of informal funds flowing around in the Chinese economy was between 0.7 and 0.8 trillion RMBs in 2003, which is about one fifth the total amount of the stimulus package China put together to combat the current financial crisis (PBOC and JICA 2005). Circulation of funds of this magnitude may involve more than just small circles of family, relatives, and friends. In fact, several forms of informal financial institutions have emerged in the city of Wenzhou since the early 1980s, a phenomenon that once alarmed the Chinese government. Organizations such as Qianzhuang, Yinbei, and Juhui are various groups of individuals that pool funds together and lend to individuals for potentially profitable investment projects. Because they lack the formal recognition of the government and thus cannot rely on any legal protection from the courts or the government, these groups draw their memberships largely from relatives, friends, and local acquaintances. Although this has put a limit on the size of the group and the scale of total funds, the reputation effects seem to have functioned well in enforcing the implicit financial contracts among members. The largely successful operations of these organizations have gradually eased the concern of the Chinese government, which has now established Wenzhou as one of the sites for monitoring rates for informal loans. But caution is called for when interpreting the above patterns, as Wenzhou is arguably a special region in China, which is long known for its extraordinary entrepreneurship, thus may not be representative of the whole country.

In response to the spontaneous emergence of various informal financing arrangements and their popularity among business owners, the Chinese government legitimized informal loans in 1991, allowing interest rates to be as high as four times the bank loan rates. It also explicitly recognized the validity of loan contracts signed between two willing parties, even when neither party is a formal financial institution. Another important finding, which may be surprising to many, is that the interest rates of informal loans are not as high as believed by many. In addition, these rates have been declining over time, and have been largely moving together with interest rates charged by formal institutions (Que 2009).

Internal Finances

Lardy (2004) points out that in 2002 close to 50% of firm investment was funded by firms' own retained earnings in China. Thus we next study the role of internal finances in funding private firms' daily operations and expansion needs (see Table 13). The average after-tax profit rate of private firms in our sample is 9%, while the tax rate (tax amount as a percentage of sales) is slightly over 6%, or 9% when levies are included in the calculation. These tax rates are comparable to those computed using the census data, which also include firms of other ownership types; we compared their tax rates based on a total tax rate computed by dividing the sum of income tax, value added tax, and operation tax by sales. Table 12 also shows that among firms of various ownership types, the tax rate of SOEs is the highest, followed by that of corporations, then by that of collective firms, and then by private firms. Foreign invested firms enjoy the lowest tax rates.

The profit rates and ROAs are, however, substantially higher than those computed from the census data. Even within the census sample, however, we find that state-owned firms have a much lower profit and return measures. Given the lower tax rate and higher profit rate, private firms have access to more retained earnings, which can potentially be used as financial sources for investment and further expansion. Indeed, as we can see from Table 16, firms in our survey sample allocate the majority (54%) to investment, 17% to dividend payment, and the rest to special assessments, donations, public relations, and others.

Trade Credit

Using a small sample of private firms and SOEs for 1994-1999, Ge and Qiu (2007) provide evidence that private firms use trade credit as a net source of credit (i.e., incur higher accounts payable than accounts receivable), while SOEs on average are a new supplier of trade credit. Using a large panel data set of Chinese industrial firms (1999-2003), Cull, Xu, and Zhu (2009) similarly find that SOEs tend to carry more accounts receivable than private firms. However, they argue that these findings are more likely explained by the fact that SOEs extended credit to their failing partners that were in arrears. Furthermore, the magnitudes of their estimates suggest that redistribution of bank loans through trade credit is not an important explanation for how private firms obtain funds.

Our empirical evidence provided above is more in line with the findings in Cull, Xu, and Zhu (2009) in challenging the importance of trade credit in providing funds for private firms. As shown in Table 4, compared to private firms, SOEs have higher accounts receivable and accounts payables as percentages of sales, implying active use of trade credit in both directions. Table 4 further shows that the SOE sector as a whole carries more accounts payable than accounts receivable, while the opposite holds for the private sector. This suggests that trade credit is not likely a channel through which SOEs provide informal financing to other types of firms, in particular to private firms.

Inventory

The mechanisms discussed above all focus on the supply side of the story, i.e., how private firms increase financial access to solve their financial needs. But the demand side may also be important in resolving private firms' financial constraints. As Long and Zhang (2010) point out, certain organizational arrangements such as clustering may lead to a lower level of financial needs for private firms, thus alleviating their financial hardship.

Here we point to another potential mechanism that works along the demand dimension. Table 15 shows that private firms have much lower inventory/sales ratios than their SOE counterparts: 14% v. 31%. As these firms are all industrial firms exceeding a certain size, such huge differences in inventory/sales ratios most likely indicate much more efficient management of inventories and thus lower need for working capital in private firms, as compared to SOEs. In fact, the inventory/sales ratio in private firms is even lower than that in foreign invested firms. If we assume that foreign invested firms are both unconstrained financially and efficient at managing their inventory, this may imply that private firms may in fact be reducing their inventory below the optimal level, an issue that is beyond the scope of our discussion here.

Similar logic applies to another observation that we brought up earlier, namely the fact that in private firms the ratio of accounts payable and accounts receivable to sales is lower than that in private firms (Table 4). Much like with inventory management, easy access to cheap external finance by SOEs removes their incentive to manage their accounts payable and accounts receivable efficiently. Private firms, on the other hand, can barely cover their financial needs and are likely to be actively managing their trade credit in order to maintain their cash flow.

5. Conclusion

The findings presented above suggest the following patterns: (1) In 2006, before the on-set of the global recession SOEs still had more access to external finances, whether bank loans or trade credit, as compared to private firms in China. This is shown in the higher leverage rate, higher financial cost, lower interest payment, as well as a greater degree of independence in fixed asset investment with respect to

internal funds. (2) To counter their limited access to external finances, Chinese private firms have resorted to a variety of mechanisms. Using both the NBS census data and the private entrepreneur survey data, we show that these mechanisms include a greater reliance on retained earnings (via lower tax rate and higher profit rate), a flexible yet reasonably efficient usage of informal finances, and very efficient management of working capital (via reducing the required levels of inventory and accounts receivable). In contrast, we present evidence that trade credit from the SOE sector to the private sector cannot be a plausible mechanism to resolve financial constraints for Chinese private firms, since the funds appear to be flowing in reverse. (3) There is a great amount of variation in private firms' access to external finance. While small private firms have difficulty obtaining external finances, larger private firms are able to achieve a high leverage rate by paying higher financial costs. We estimate that about half of the observed differential access to finances between SOEs and private firms can be explained by the size of the firm, which is often a good indicator of reputation and creditworthiness.

Our results also suggest certain trends over time in firms' financial access, although the evidence is often mixed. On the one hand, there seems to have been improvement in small private firms' access to external finances and formal finances (such as bank loans). Based on the survey data, Table 3 shows that the leverage (debt/asset ratio) increased from 0.17 to 0.22 from 2000 to 2006, while Table 11 shows that during the same period the percentage of firms with access to bank loans increased from 38% to 43%, and simultaneously the proportion of firms using informal loans dropped from 27% to 23%. On the other hand, the regression results based on the NBS census balanced panel do not show consistent changes over time in how ownership affects financial access measures (leverage, financial cost/total expense ratio, and accounts payable/total debt ratio). Similarly, the regression results linking investment to internal funds also do not show clear patterns in changes over time, implying that relative to SOEs the private firms in the census balanced panel probably faced the same amount of additional financial constraint in 2006 as in 2000. So at least for the balanced panel sample in the NBS census, not much improvement can be observed in the narrowing of financial access gaps between SOEs and private firms.

As discussed previously, private firms included in the NBS balanced panel tend to be well established large private firms, thus are not representative of all private firms. So it is possible that the two patterns summarized above are completely consistent with each other, and there indeed has been improvement in the financial access of small private firms, the most constrained sector, in the past few years. Such development would definitely be a welcome one. A more robust conclusion, however, will await further investigation.

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Table 1. Firm Distribution by De Facto and De Jure Ownership Type in 2006 Census Cross-Section (Number of Firms in Each Cell)

De facto	De jure ownership						
ownership	state	private	collective	frn	hmt	other	Total
state	12,309	37	46	325	262	2,807	15,786
private	104	111,610	862	2,054	1,600	27,843	144,073
collective	100	378	10,556	354	344	4,324	16,056
frn	2	112	3	21,976	251	173	22,517
hmt	3	102	9	380	21,220	155	21,869
legal person	2,754	35,962	2,736	5,898	5,081	23,590	76,021
Other*	55	136	48	304	237	563	1,343
Total	15,327	148,337	14,260	31,291	28,995	59,455	297,665

* No group holds more than 50% shares

Table 2. Size Distribution (by Assets) of Firms by Ownership Type and Sample (Number of Firms in Each Cell)

Panel A: NBS census data

2006 full cross-section

De facto ownership	Size distribution by assets				
	small	medium	large	giant	Total
state	8,383	5,681	1,467	255	15,786
private	121,638	21,045	1,347	34	144,064
collective	12,463	3,333	250	10	16,056
frn	12,188	8,716	1,523	90	22,517
hmt	14,100	7,052	691	24	21,867
legal person	55,124	17,877	2,706	310	76,017
Other	597	487	223	36	1,343
Total	224,493	64,191	8,207	759	297,650

Balanced panel sample as of 2006

ownership	small	medium	size_as large	giant	Total
state	3,396	2,708	690	127	6,921
private	7,076	3,920	386	15	11,397
collective	2,353	1,082	81	5	3,521
frn	1,307	1,985	519	33	3,844
hmt	1,879	1,665	214	11	3,769
legal person	4,363	3,678	793	116	8,950
other	114	175	105	21	415
Total	20,488	15,213	2,788	328	38,817

Panel B: Size distribution of firms from private firm survey data

Pooled private firm sample for 2000, 2002, 2004, & 2006

	small	medium	large	giant	Total
Survey data	8,977	733	38	1	9,749

Private firm sample for 2006

	small	medium	large	giant	Total
Survey data	2,253	242	10	0	2,505

Table 3. Mean Leverage, Financial and Interest Expense Ratios

Mean leverage:

year	other	state	private	ownership collective	frn	hmt	legal person
Census full 2006 cross-section							
2006	0.5270655	0.5599121	0.553948	0.5386975	0.4697204	0.4761098	0.5285534
Balanced panel (census)							
2000	0.5710869	0.5670198	0.6224115	0.5974506	0.4732248	0.4957071	0.5716565
2001	0.5544248	0.5608889	0.6144733	0.5874439	0.4538752	0.4808093	0.5670505
2002	0.5453331	0.560621	0.6097414	0.5812743	0.4499532	0.476328	0.5667261
2003	0.5496885	0.5594965	0.6095757	0.5767031	0.4514101	0.4746216	0.5639201
2004	0.530387	0.5657067	0.6089812	0.5675425	0.4678842	0.4648331	0.5735869
2005	0.5280951	0.5678059	0.5967634	0.56247	0.4527427	0.4704356	0.5616242
2006	0.5404513	0.5653585	0.5895072	0.559625	0.4463859	0.4695703	0.556495

Survey data (private firms only)

year	debt/asset	debt/asset1
2000	0.1711667	.
2002	0.1769443	0.2110109
2004	0.1838394	0.223089
2006	0.2167257	0.24843

Where asset does not include accounts receivable, but asset1 includes AR (which was not available for 2000).

Mean (financial expense/total expense)

year	other	state	private	ownership collective	frn	hmt	legal person
Census full 2006 cross-section							
2006	0.0255374	0.0457006	0.0152922	0.0176842	0.0148726	0.0122669	0.0204316
Balanced panel (census)							
2000	0.0445738	0.0632555	0.0279436	0.0320019	0.0301418	0.0191012	0.0403799
2001	0.0407172	0.0623533	0.0269873	0.0304421	0.0275245	0.0170225	0.0376548
2002	0.041142	0.0593192	0.0243659	0.0286642	0.0235307	0.0144496	0.0370419
2003	0.0341271	0.0572678	0.0225671	0.0263405	0.0215939	0.0138601	0.0324943
2004	0.0340242	0.0550491	0.0230045	0.0223288	0.0175288	0.0125677	0.0315693
2005	0.0287277	0.0504006	0.0217918	0.0226448	0.0155942	0.0132149	0.0297987
2006	0.0300134	0.0496973	0.0216176	0.0204176	0.0159484	0.0151862	0.0273304

Mean (interest expense/total debt)

year	other	state	private	ownership collective	frn	hmt	legal person
Census full 2006 cross-section							
2006	0.0266667	0.0157521	0.0307337	0.0249302	0.0146456	0.0122944	0.0289223
Balanced panel (census)							
2000	0.0316954	0.0220281	0.0330856	0.035588	0.0228914	0.0172136	0.0316134
2001	0.032206	0.0208976	0.0320514	0.033084	0.0202682	0.0162542	0.0296349
2002	0.0271391	0.0197437	0.0298703	0.0319305	0.0173067	0.0154289	0.03086
2003	0.0249439	0.0191362	0.0288501	0.0301492	0.0147266	0.0141237	0.0285463
2004	0.0232134	0.0174312	0.0294332	0.026364	0.0139089	0.0127125	0.0267188
2005	0.0229547	0.0167197	0.0302106	0.027168	0.0151674	0.0137857	0.0273302
2006	0.0263176	0.0158902	0.030519	0.0252377	0.0155676	0.0127305	0.0263805

Table 4. Accounts Payable and Accounts Receivable

De facto ownership	Mean AP/assets	AP/debt	AP/sales	AR/assets	AR/debt	AR/sales
NBS 2006 cross-section						
state	0.1065433	0.1763865	0.1464989	0.1064704	0.1662064	0.1607052
private	0.1454115	0.2619018	0.0995536	0.1907293	0.2964941	0.1313267
collective	0.1501968	0.2653261	0.1196202	0.2064847	0.290433	0.164984
frn	0.1957519	0.4134812	0.1589811	0.1925882	0.3345768	0.1656279
hmt	0.2102893	0.4317049	0.1697322	0.2030218	0.3288149	0.1730874
legal person	0.1451012	0.2721183	0.1144058	0.1684955	0.2742357	0.1335646
other	0.1307289	0.2495824	0.1309284	0.1648499	0.2831569	0.1720792
Survey (2006)	0.071087	0.2034589	0.0748228	0.2069642	0.8242683	0.1583272

Table 5. OLS Regressions in the 2006 NBS Census Cross-Section

Dependent variable is leverage					
state	0.027***	0.015***	0.027***	0.024***	0.015***
	(0.0023)	(0.0023)	(0.0023)	(0.0023)	(0.0023)
lassets		0.013***			0.011***
		(0.00034)			(0.00034)
pretaxROE			-0.000017		-0.000020
			(0.000040)		(0.000039)
liquidity				-0.0000040***	-0.0000041***
				(0.00000062)	(0.00000062)
_cons	0.53***	0.40***	0.53***	0.54***	0.44***
	(0.0005)	(0.0034)	(0.00050)	(0.00049)	(0.0034)
N	286993	286993	286894	279662	279628
r2_a	0.00047	0.0058	0.00049	0.00054	0.0040
Dependent variable is financial expenses/total expenses					
state	0.029***	0.024***	0.029***	0.029***	0.024***
	(0.00042)	(0.00042)	(0.00042)	(0.00043)	(0.00042)
lassets		0.0062***			0.0062***
		(0.000062)			(0.000063)
pretaxROE			0.0000032		0.0000015
			(0.0000072)		(0.0000071)
liquidity				-0.000000079	-0.00000015
				(0.00000014)	(0.00000013)
_cons	0.017***	-0.043***	0.017***	0.017***	-0.044***
	(0.000091)	(0.00061)	(0.000091)	(0.000093)	(0.00062)
N	265672	265670	265630	258509	258472
r2_a	0.018	0.052	0.018	0.018	0.053
Dependent variable is interest expense/total debt					
state	-0.11***	-0.11***	-0.11***	-0.12***	-0.11***
	(0.0024)	(0.0024)	(0.0024)	(0.0024)	(0.0024)
lassets		-0.0099***			-0.012***
		(0.00038)			(0.00038)
pretaxROE			0.000015		0.000017
			(0.000045)		(0.000044)
liquidity				-0.0000020***	-0.0000018***
				(0.00000070)	(0.00000070)
_cons	0.29***	0.39***	0.29***	0.30***	0.41***
	(0.00055)	(0.0037)	(0.00055)	(0.00056)	(0.0038)
N	293435	293435	293391	287813	287774
r2_a	0.0077	0.0100	0.0077	0.0082	0.011

Table 6. Balanced Panel Census GLS RE Regressions

Dep.var:	leverage	finexp	ap_debt
state	-0.039***	0.019***	-0.061***
	(0.0019)	(0.00060)	(0.0057)
state_t	0.011***	-0.0011***	-0.0030***
	(0.00034)	(0.00011)	(0.00097)
lassets	0.018***	0.0070***	-0.015***
	(0.00053)	(0.00015)	(0.00066)
pretaxROE	-0.0000026	0.0000033	-0.0000056
	(0.000019)	(0.0000061)	(0.000035)
liquidity	-0.00000024	4.8e-09	-0.00000044*
	(0.00000019)	(0.000000060)	(0.00000024)
t	-0.0054***	-0.0025***	-0.0022***
	(0.00015)	(0.000051)	(0.00041)
N	250261	230893	147867

Table 7. Dependence of the Fixed Capital Investment on Cash Flow in Balanced Panel Census Data

Dependent variable is D.netfixedcapital= D(a18-a20) Constant term is included but not reported	state b/se	private b/se	coll b/se	frn b/se	hmt b/se	legal b/se
Pooled RE GLS						
netprofit	0.11***	0.38***	0.31***	0.044***	0.25***	0.15***
	(0.0060)	(0.0063)	(0.0072)	(0.0037)	(0.011)	(0.0050)
N	47435	63582	27923	22224	22764	45953
Balanced panel OLS by year						
2001						
netprofit	0.18***	0.57***	0.36***	0.039*	0.070***	0.13***
	(0.014)	(0.025)	(0.032)	(0.021)	(0.022)	(0.013)
N	8917	8980	5981	3622	3800	6891
r2_a	0.017	0.054	0.020	0.00066	0.0022	0.014
2002						
netprofit	-0.032***	0.61***	0.42***	0.11***	0.13***	0.15***
	(0.011)	(0.020)	(0.023)	(0.011)	(0.0098)	(0.020)
N	8541	9873	5420	3739	3707	6958
r2_a	0.00078	0.089	0.056	0.027	0.048	0.0076
2003						
netprofit	0.029***	0.72***	0.72***	0.010***	0.22***	0.098***
	(0.011)	(0.018)	(0.021)	(0.0070)	(0.019)	(0.0087)
N	8197	10609	4565	3714	3767	7438
r2_a	0.00080	0.14	0.21	0.0002	0.036	0.017
2004						
netprofit	0.040***	0.39***	0.33***	0.15***	0.47***	0.12***
	(0.011)	(0.0089)	(0.0015)	(0.010)	(0.026)	(0.011)
N	7621	11204	4686	3401	4077	7400
r2_a	0.0016	0.15	0.094	0.059	0.074	0.015
2005						
netprofit	0.15***	0.21***	0.91***	0.022***	0.25***	0.27***
	(0.015)	(0.0068)	(0.045)	(0.0068)	(0.021)	(0.014)
N	7246	11520	3750	3900	3659	8318
r2_a	0.014	0.074	0.10	0.0025	0.040	0.042
2006						
netprofit	0.37***	0.64***	0.28***	0.13***	0.11***	0.16***
	(0.018)	(0.014)	(0.010)	(0.0062)	(0.0045)	(0.012)
N	6913	11396	3521	3844	3768	8948
r2_a	0.056	0.15	0.18	0.097	0.15	0.021

Table 8. Equity Composition of Private Firms in the Survey Data (Percent)

survey year	state	private	collective	foreign
1995	0.6082585	94.22596	0.6561265	1.984566
1997	1.414484	97.81057	1.53253	1.885661
2000	0.7918299	97.87682	2.120797	4.671022
2002	0.6695464	99.19942	1.57784	1.271114
2004	0.4424552	97.078	0.4123667	0.6788756
2006	0.4363125	97.12013	0.3556103	0.6148174
Total	0.5678209	96.64371	0.7217281	1.268471

Table 9. Equity Composition of Private Firms by Founding Year (Percent)

founding year	state	private	collective	foreign	number of firms
1975	0	100	0	0	3
1976	0	100	0	0	4
1977	0	100	0	0	2
1978	0	85.6	7.5	0	25
1979	0	98.89189	0.5675676	0.5060729	37
1980	0.0943396	90.69811	1.764706	0	53
1981	0.6382979	96.73913	1.170213	0	47
1982	0.4938272	98.875	0.0625	0	81
1983	0.8888889	93.94815	0.8088235	0.6666667	135
1984	0.6169154	92.985	1.317143	2.31614	201
1985	0.6865079	94.668	1.541291	1.23506	252
1986	0.3688525	95.09917	1.447154	2.038532	244
1987	0.6574074	96.2243	1.069124	0.4239631	216
1988	0.5344201	93.508	1.679829	1.726762	357
1989	0.5829932	94.62824	1.62069	1.14589	350
1990	0.6391504	96.9646	0.7913702	0.8911726	349
1991	1.690196	95.35609	1.191429	1.754386	343
1992	0.5641724	95.64834	0.5499861	2.125448	557
1993	1.014457	95.96932	0.2836264	1.923057	808
1994	0.3741946	96.33946	0.8077934	0.8505887	710
1995	0.2250269	97.56388	0.7397484	1.12215	490
1996	0.8167369	97.85988	1.219613	1.324626	534
1997	1.061224	97.40741	1.238287	0.9075217	490
1998	0.5960961	97.15455	0.825161	0.9446936	668
1999	0.5908385	97.69572	0.6310001	1.02458	552
2000	1.01194	97.37973	0.7976366	0.3883058	670
2001	0.5358306	96.78618	1.164251	0.633871	615
2002	0.5456204	97.43486	0.459854	0.4863388	548
2003	0.497992	97.87702	0.6012024	0.0502008	498
2004	0.4716981	97.75665	0.5584906	1	265
2005	0.09375	97.95625	0.3375	0.8074534	160
Total	0.6702446	96.48101	0.8951333	1.069252	10277

Table 10. Sources of Initial Financing of Private Firms by Founding Year (Percent)

Founding year	own saving	other individuals	banks	inheritance
1975	0.3333333	1	0.3333333	0.3333333
1976	0.875	0.5	0.625	0.125
1977	1	0.5	0.5	0
1978	0.8387097	0.6774194	0.3548387	0.1290323
1979	0.8039216	0.5882353	0.4901961	0.254902
1980	0.8295455	0.625	0.3181818	0.1022727
1981	0.7702703	0.6081081	0.4459459	0.0540541
1982	0.8584071	0.5752212	0.380531	0.0707965
1983	0.7745098	0.6470588	0.3529412	0.0980392
1984	0.7623188	0.6347826	0.4144928	0.1014493
1985	0.7580247	0.5703704	0.4271605	0.0888889
1986	0.8248588	0.5649718	0.3700565	0.0960452
1987	0.7477745	0.5756677	0.4154303	0.0890208
1988	0.7324955	0.5691203	0.3788151	0.1077199
1989	0.7586207	0.5613027	0.3371648	0.0957854
1990	0.7966102	0.5338983	0.309322	0.0444915
1991	0.7897092	0.5749441	0.3266219	0.0805369
1992	0.8005658	0.4950495	0.2927864	0.0735502
1993	0.7920686	0.5326902	0.3161844	0.0525188
1994	0.8220551	0.4843162	0.3161857	0.0401506
1995	0.8341232	0.318038	0.2436709	0.0189873
1996	0.7807808	0.3303303	0.2492492	0.0075188
1997	0.8020528	0.3269795	0.2595308	0.0205279
1998	0.7790822	0.3354701	0.3044872	0.0181624
1999	0.8055944	0.2909091	0.2377622	0.0181818
2000	0.8050941	0.3045404	0.2580288	0.021041
2001	0.7847134	0.3121019	0.2675159	0.0242038
2002	0.8419355	0.3080645	0.2387097	0.0064516
2003	0.8275862	0.2649728	0.2504537	0.0145191
2004	0.865625	0.303125	0.221875	0.00625
2005	0.8679245	0.2311321	0.2783019	0.0188679
Total	0.7978211	0.4249815	0.3006672	0.0455927

Table 11. Sources of Ongoing Financing (Percent)

Survey year	bank loan	informal loan	Bloan/asset	infloan/asset	Bloan/asset1	infloan/asset1	accountspayable/debt
2000	0.3813863	0.2746502	0.656618	0.343382	.	.	.
2002	0.4324739	0.2777778	0.6752712	0.3247288	0.509941	0.2345309	0.2555281
2004	0.3897742	0.2333997	0.682294	0.317706	0.5259771	0.23203	0.2419929
2006	0.4347146	0.2301277	0.7332355	0.2667645	0.5909441	0.2019938	0.2070621
Total	0.4114568	0.2530349	0.6878425	0.3121575	0.5421635	0.2226344	0.2352022

Where asset does not include accounts receivable, but asset1 includes AR (which was not available for 2000).

Table 12. Uses of Profit (Percent)

Survey year	investment	dividend	Special Assessment	donation	Public Relations	other
1995	0.4163436	0.0932845	0.0939559	0.1269798	0.1899265	0.1551914
1997	0.5866943	0.1921225	0.0690326	0.0657159	0.1421804	0.1055952
2000	0.7426211	0.1866239	0.0603343	0.0830994	0.1668536	0.0874556
2002	0.3083546	0.145202	0.0910435	0.1086098	0.2075858	0.0310835
2004	0.4039595	0.239454	0.0981842	0.0988894	0.2031859	0.082699
2006	0.4652271	0.1728487	0.0654249	0.0747586	0.1553567	0.0319072
Total	0.535972	0.1655978	0.0800102	0.0949046	0.1785527	0.0929303

Table 13. Tax Rates and Profitability

Survey year	taxrate1	taxrate2	profit/sales	roa0	roa	roe
1993	0.0709446	0.0863747	.	.	.	.
1995	0.0742687	0.1071267	0.1499812	.	.	0.2225634
1997	0.0637359	0.0918736	0.1222102	.	.	0.3434442
2000	0.0586883	0.0855125	0.0964739	0.1928388	.	0.2445906
2002	0.0586995	0.0812313	0.0795436	0.1564051	0.1442725	0.2118049
2004	0.0662744	0.102082	0.0470777	0.1944818	0.1402038	0.2574523
2006	0.062746	0.0937703	0.0774651	0.1456495	0.1420462	0.2406999
Total	0.0635397	0.0911298	0.087107	0.1702935	0.1423676	0.2468388

Taxrate1 = taxes/profit; taxrate2 = (taxes+fees)/profit;
Roa0 = profit/asset, roa=profit/asset1 (which includes AR)

Census data: 2006 cross-section

ownership	tax/sales	net profit/assets	roa	roe
state	0.0767984	0.0006131	0.0006131	0.0439323
private	0.049976	0.0932352	0.0932352	0.0640125
collective	0.06531	0.0971541	0.0971541	0.047518
frn	0.0332486	0.0642724	0.0642724	-0.000106
hmt	0.0338213	0.0468627	0.0468627	0.036552
legal person	0.052021	0.0901025	0.0901025	0.109392
others	0.052831	0.0602489	0.0602489	0.1086978

Table 14. Total Accounts Payable and Receivable in 2006 NBS Census Cross-Section

(In million RMB) De facto Ownership	ap	ar	net receivables
state	501	329	-172
private	584	684	100
collective	106	136	30
frn	794	741	-53
hmt	398	356	-42
legal person	1040	833	-207
other	66	65	-1

Table 15. Average Inventory/sales Ratios by Ownership in 2006 Census Cross-Section

ownership	mean inventory/sales
state	0.3058309
private	0.1384788
collective	0.1708645
frn	0.1947837
hmt	0.2216497
legal person	0.172007
other	0.2210449