Financing Constraints and Investment in China's Township and Village Enterprises

The rapid growth of township and village enterprises in China has frequently been attributed to their particular property rights structure and special position in the process of economic transition. This paper, in contrast, argues that financial intermediation plays a much neglected but crucial role in determining investment in fixed assets and thus growth. Provincial-level data shows that investment in fixed assets by township and village enterprises depends on the availability of bank funds; yet in recent years bank funds have come to finance an ever smaller share of investment. Claims by township and village enterprises that a lack of bank loans impedes their investment and continued growth thus appear vindicated. However, the enterprises with fewest bank funds to support investment do not resort to internal funds—as would be expected if they are constrained in their access to external funds. Furthermore, the investment that occurs is largely independent of profitability and demand variables. Investment thus is simply undertaken when bank funds are available rather than when investment makes economic sense. Any tightening of bank lending is well justified.

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Introduction

Township and village enterprises (TVEs) have become one of the most vibrant sectors in China's economy during the past decade. They absorbed much of rural labor freed by the agricultural reforms and experienced extraordinary output growth. TVEs accounted for only 7.0% of total employment in 1978 but for 19.6% in 1996, exceeding the employment by state-owned enterprises. Their share in output grew from 7.2% of Gross Output Value of Society (GOVS) in 1978 to 25.7% of Gross Domestic Product (GDP) in 1996.[1] TVE growth thus by far exceeded the average growth rate of China's economy.

A number of explanations have been offered for this rapid growth of TVEs. The success of TVEs has been attributed to cheap labor, low tax rates, and price distortions in the socialist system (with state-determined high prices for manufacturing goods resulting in high TVE profits). Imperfect asset markets appear to force local governments to translate their control over assets into income streams, rather than to sell these assets off. (Naughton 1994) That TVE growth has been fastest in coastal regions suggests an impact of international trade and foreign direct investment (Wei 1997) or of the general regional level of development (Chen and Vijverberg 1997).[2]

The role of the local government is frequently viewed as crucial in TVE development. Local governments often provide start-up capital for township- and village-run enterprises. In the presence of severely underdeveloped markets they procure factors of production as well as technology, and may even organize distribution of final

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1 Calculated from ZGTJNJ 1992, 47; ZGTJNJ 1996, 389; ZGTJNJ 1997, 42, 96f; ZGXZQYNJ 1997, 129. Beginning in 1993 (national) gross output value data is no longer available, while value added data for TVEs is not available for the years prior to 1994. In 1994 TVEs accounted for 32.19% of GOVS (ZGTJNJ 1993, 50 and 396).

2 DaCosta, Carrol, and Wang (1998), on the other hand, document a positive impact of TVE growth on provincial output growth. TVE growth and regional growth thus appear linked rather than unicausal.

products. Only as factor and product markets develop and local production reaches a certain scale are property rights and management separated.[3]

These explanations for the rapid growth of TVEs neglect the immediate role of financing.[4] Economic theory has established various channels through which different aspects of financial intermediation can affect economic growth in a departure from the neoclassical model of perfect competition in which markets do not fail.[5] The empirical evidence unambiguously confirms a strong correlation between various measures of financial structure and economic growth.[6]

If markets fail (or are lacking) and enterprises then are constrained in their access to external finance, this is likely to affect investment. But investment is important for economic growth in that once it exceeds depreciation it adds to capital accumulation; it is also likely to embody much of technological progress. Production function estimations for China's TVEs show that capital accumulation and technological progress together explain between one half and three quarters of TVE output growth.[7]

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3 See, for example, Oi (1999), Kung (1997), Walder (1995), Weitzman and Xu (1994), Chang and Wang (1994), and Nee (1992).

Related studies focus on the determinants of the relative share of township- and village-run enterprises vs. private enterprises in the economy. Byrd (1990) finds that private enterprises grew fastest in those regions where township-run and village-run enterprises failed to develop. Jin and Qian (1997) argue that the share of township- and village-run enterprises is higher the stronger the central government influence, the more powerful the community governments, and the more retarded the level of market development. For individual enterprise case studies and surveys see, for example, Lin, He, and Du (1992), and Ma, Wang, and Liu (1994).

4 An exception is Gu and Gu (1992) who regress TVE Gross Output Value on present and past year-end bank loans.

5 Market friction such as information and transaction costs are generally viewed as leading to the establishment of financial markets and financial intermediaries. Financial markets and financial intermediaries in turn perform certain functions affecting other economic variables such as economic growth. See, for example, the review articles by Levine (1997), Berthelemy and Varoudakis (1996), and Gertler (1988).

6 For cross country studies as well as country-specific studies on different aspects of financial intermediation see, for example, Levine and Zervos (1998), Thornton (1996), King and Levine (1993a and 1993b), and Roubini and Sala-i-Martin (1992).

7 See Jefferson, Rawski and Zheng (1996) for the period 1988-92 using two different sets of data (varying in the method of deflating). Xu (1995) estimates a Cobb-Douglas production function but does not calculate the contribution of the inputs and technological progress to output growth.

A number of studies find that credit rationing is a persistent feature in market economies forcing firms to finance investment out of cash flow,[8] in particular that small firms are more likely to be constrained in their access to external funds than large firms.[9] In China, TVEs have no possibility to issue bonds or publicly traded stocks and thus must rely on the banking system (and the informal financial sector) for external funds. But the mostly state-owned and always state-run banking system supports primarily the state-owned enterprises. Long-term bank loans to TVEs have stagnated in recent years.

TVEs and their superordinate departments frequently complain about the severe shortage of bank funds. In Shaanxi Province, for example, TVEs in order to reach their annual gross output value target of 200b yuan RMB by the year 2000 need to invest 10b yuan per year during the ninth Five-Year-Plan. The provincial TVE Bureau in 1997 complained publicly about the lack of bank funding; the Agricultural Bank of China and the Rural Credit Cooperatives in 1996, the first year of the ninth Five-Year-Plan, had lent only 1.298b yuan.[10]

The purpose of this paper is to investigate whether, and if so, to what extent investment in fixed assets by TVEs is constrained by a lack of access to bank funds. After an introduction to the data, the paper proceeds by exploring the determinants of

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8 See, for example, Fazzari, Hubbard and Petersen (1988) and Fazzari and Petersen (1993) for a sample of U.S. manufacturing firms, Hubbard and Kashyap (1992) for U.S. agriculture, or Chapman, Junor and Stegman (1996) for a sample of corporations listed on the Australian Stock Exchange.

The theoretical argument for credit rationing has been made, among others, by Stiglitz and Weiss (1981) who showed how credit rationing as a screening mechanism can be an answer to information asymmetries (the adverse selection and moral hazard problems); Williamson (1987) deduces credit rationing from the existence of monitoring costs. Furthermore, financial markets need not be in competitive equilibrium when entry is restricted (as is the case in China), productivity is affected by the size of the market, or the establishment of financial markets is costly in the first place.

9 See, for example, Kadapakkam, Kumar and Riddick (1998).

10 See Shaanxi Province TVE Administration Bureau 10 June 1997 which uses the lack of formal financial sector funding to justify expansion of the informal financial sector in form of TVE rural cooperative funds. Despite the scarcity of formal financial sector funding, in 1996 fixed assets of TVEs increased by 9.045b yuan; the Agricultural Bank of China provided loans of 0.44b yuan, the rural credit cooperatives loans of 0.858b yuan, 2b yuan were "attracted from outside the enterprise" (*yinjin zijin*), approximately 4b yuan came from within enterprises and from farmers, and 1.747b yuan are not accounted for (SXNJ 1997, p. 107).

investment (third section). The fourth section clarifies on the scarcity of bank loans and tests whether TVE investment is constrained in its access to bank funds. The last section concludes.

Data

TVEs comprise all enterprises in the countryside that are not state-owned or partly foreign-owned, that is, township-run enterprises (enterprises belonging to the township government), village-run enterprises, joint (cooperative) enterprises owned by a group of individuals, and individual-owned (including private) enterprises. In 1996 more than half of the 26% TVE share in nationwide GDP (15%) originated in township- and village-run enterprises.[11]

The focus in the following is on township- and village-run enterprises as a subgroup of TVEs; for joint and individual-owned (including private) enterprises no balance sheet data is available. Data sources are provincial-level TVE output, investment and labor statistics as well as provincial-level aggregate TVE balance sheets and profit and loss accounts. Unless otherwise noted these statistics are from the yearbooks *Zhongguo xiangzhen qiye nianjian* (ZGXZQYNJ), *Zhongguo tongji nianjian* (ZGTJNJ), and the 1994 compendium *Xiangzhen qiye caiwu tongji huizong ziliao* (XZQYCWTJHZZL). Provincial data is from *Gaige kaifang shiqi nian de zhongguo diqu jingji*

11 See ZGXZQYNJ 1997, 121 and ZGTJNJ 1997, 42.
In industry, which accounted for 42% of GDP in 1996, enterprises under different ownership forms contributed to Gross Output Value of Industry (GOVI) as follows: State-owned enterprises 28%, township enterprises 12%, village enterprises 16%, joint enterprises 3%, urban collective-owned enterprises 8%, individual-owned enterprises 15%, and "other" enterprises, such as foreign joint ventures 17%. See ZGTJNJ 1997, 42 and 411. Only GOVI (not value-added) is available for all ownership categories in industry.

(GGKFSQNDZGDQJJ) and ZGTJNJ. Due to the large number of variables and the different years covered no detailed sources are listed with tables and figures.

Data on Tibet is highly incomplete and was therefore excluded. The data on Guangdong Province for the year 1994 in most statistics is equal to the 1993 data. (Occasionally this is made explicit with a statement that Guangdong had not provided new data by the publishing deadline.) With thus neither 1994 data nor 1995 growth rates available, the Guangdong observations were omitted for all years. Obvious mistakes in any of the statistics were if possible corrected; otherwise the observation was omitted in the relevant analysis. The database then consists of annual observations for the years 1993 or 1994 through 1996 on a number of variables covering township- and village-run enterprises (together) in each of 28 provincial-level entities.

Determinants of Investment in Fixed Assets

Given that investment in fixed assets plays a major role in facilitating if not promoting economic growth, what determines investment behavior in township- and village-run enterprises? If enterprise investment decisions were made according to economic criteria, then one would expect profitability and product demand measures to have a significant impact on actual investment behavior after controlling for enterprise characteristics and perhaps the provincial development stage. In a perfectly competitive economy financial variables should have no impact on investment decisions.

As provinces vary in size, all absolute values are standardized by dividing with year-end net fixed assets.[12] Mixing current-year with previous-year values—such as in an

[12] Net fixed assets in the aggregate balance sheet of township- and village-run enterprises of a particular year are officially derived as gross value of fixed assets minus cumulative depreciation. A piece of machinery purchased ten year ago thus is valued (and depreciated) at the price level at which it was

investment measure defined as investment during the current year divided by net fixed assets at the beginning of the year (the end of the previous year)—must be avoided because the pool of enterprises changes each year due to entry and exit (see bottom of Table 1).[13] Thus the dependent variable is defined as investment during the current year divided by year-end net fixed assets (INVCAP).

Both enterprise profitability (ROA) and the demand for enterprises' products as manifested in business income (INCCAP) and inventory turnover (INVENT) should have a positive impact on investment. In particular, profitability and demand measures of previous years, before the investment is being implemented, should have a strong positive impact. A high degree of innovation through investment is more likely in industry than in agriculture or commerce (INDTVE), and more likely in exporting industries subject to international competition (EXPORT). The size of an enterprise could have a positive impact on investment (AVESIZE). Given the literature on the advantage of government involvement, ownership may matter, although it is not clear whether township or village governments have a larger influence on investment (TSHVILL). Low labor productivity in a province (GDPLAB) in general could imply the

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purchased; official fixed assets measures thus comprise a bundle of fixed assets each valued on the basis of the price level at its time of purchase.

This creates problems for comparing different provinces as the share of fixed assets purchased in any particular past year is likely to differ from province to province. If is possible to construct an alternative measure of "real net fixed assets" that re-values all fixed assets (and their increases as well as depreciation) at the 1990 price level; by then inflating these real net fixed assets year by year an accurate nominal measure can be obtained.

Nevertheless, throughout this paper official net fixed assets are used because decision makers in China do not have a corrected measure of real net fixed assets readily available. For example, bankers when deciding whether to extend a long-term bank loan may value potential collateral (fixed assets) based on the information the enterprise provides from its balance sheet, unless they obtain a market estimate; they are most unlikely to construct a net real or nominal fixed assets measure that corrects for the different price levels that balance sheet net fixed assets comprise.

[13] The high standard deviation for the annual change in the pool of enterprises (see Table 1) is due to a few, usually two or three, outliers in each year. These outliers suggest that the term "township- and village-run enterprises" may have been re-defined over time. Thus, joint and individual-owned enterprises may have been included at one point of time, and then excluded the next year. This poses no problem in the following as long as variables are not constructed across different years; any particular concept of township- and village-run enterprises applies equally across all variables of any one province in any one year.

need to catch up through capital accumulation and innovation. (See Table 1 for the definitions of the individual variables and their summary statistics.)

Table 2 present the results using least squares estimation throughout. The first regression shows the impact of exclusively current-period real variables on investment. Profitability in this period has a positive and significant influence on investment in this period; demand proxied by business income carries the wrong sign and is insignificant, but demand proxied by inventory turnover carries the correct sign and is significant. Investment is higher, the larger the share of employment in industrial enterprises. Ownership matters in that the more labor is employed in township-run enterprises rather than in village-run enterprises, the higher is investment. Enterprises in provinces with a low labor productivity are in fact in the process of catching up through investment. Enterprise size and export share do not matter for investment.

The second regression incorporates lagged values of profitability and demand as investment in this period should largely depend on profitability and sales prospects as realized in previous periods. The result is that all profitability and demand variables, both current period and lagged, are insignificant. One explanation for these unexpected effects of profitability and demand could be that decision-making criteria vary from province to province. Thus, a demand variable may be taken as a crucial signal on the need for investment in one province but not in another. Nevertheless, the behavior in different provinces would have to be exactly opposite to cancel out overall. Another explanation could be that investment by township- and village-run enterprises pays little heed to profitability and demand but is driven by other considerations such as employment creation or an increase in the scale of fixed assets for the sole purpose of amassing physical capital.[14] Both regressions, finally, may suffer from an omitted variable bias.

[14] Oi (1994) shows that sectoral policies in China appear to be moving in step across all provinces. This suggests a high degree of provincial uniformity in investment decision-making that is furthermore primarily driven by sectoral development policy (rather than profitability or demand).

For example, if financial intermediation matters for economic growth, then financial variables should be included.

That current profitability and at least one of the demand variables in the first regression are significant suggest that either investment decisions are taken at extremely short notice and investment can be implemented immediately thereafter, or that the variables are in fact a measure of the availability of funds. Investment projects are on line and simply waiting for funds to be implemented. Profits, business income, and inventory turn-over then measure cash flow and changes in working capital—which receive further attention below. To explicitly include just one financial variable, the third regression repeats the first regression but includes one purely financial variable, namely the volume of long-term bank loans (per net fixed assets). It turns out to be significant and to carry the correct sign, implying that balance sheet structure contrary to the neoclassical view has a crucial effect on investment.

Are Township- and Village Enterprises Constrained in Their Access to Bank Funds?

While investment in fixed assets by township- and village-run enterprises has grown in recent years, bank loans for such investment have increased hardly at all. Bank loans financed 30.83% of all investment in fixed assets by township- and village-run enterprises in 1993, but only 24.77% in 1996. (See Table 3.) The falling share of bank loans was counterbalanced by a rise in internal funds as well as in "other external funds." Although the share of bank loans has consistently fallen over time in the nationwide aggregate, this was not necessarily true for all provinces. Almost a third of all provincial observations on the share of bank loans in total investment financing in 1996 were located outside a ± 38% band of the nationwide average. The provincial variation was

even more marked for the growth rates of bank loans with a very wide range and an extremely high coefficient of variation.

Bank loans for investment in fixed assets are primarily long-term bank loans. Long-term bank loans to township- and village-run enterprises as reported in the township- and village-run enterprise balance sheet grew by 13% in 1995 and by 7% in 1996 and thus in 1995 lagged behind the investment growth rate, but not by much. This growth rate of long-term bank loans outstanding (a stock variable) is larger than the growth rate of bank loans in the investment statistics (a flow variable), which suggests that old long-term bank loans are only slowly being repaid; in order to lend for investment in fixed assets in this period the total value of loans outstanding increases. Long-term bank loans per net fixed assets dropped by 17% in 1995 and by 12% in 1996.

Short-term bank loans (loans with a maturity of one year or less) to township- and village-run enterprises presumably for production financing grew rapidly in absolute terms both in 1995 and 1996, suggesting that some of these short-term bank loans may have made up for the slow growth of long-term bank loans. But the ratio of short-term bank loans to value-added remained approximately stable from 1994 through 1996.

Enterprises furthermore have access to other forms of external funds. A major source are "other" long-term and short-term other borrowing as well as supplier credit (accounts payable). Other borrowing, undefined in the official statistics, includes, for example, loans received from non-financial institutions (the informal financial sector) or investment in township- or village-run enterprises by state-owned enterprises or government departments (other than the superordinate township and village enterprise bureau of the local government).[15] Both long-term and short-term other borrowing grew rapidly between 1994 and 1996, with the growth rates far exceeding those of bank loans

[15] In the balance sheets of township- and village-run enterprises only total borrowing (short-term, long-term) and the subgroup bank loans (short-term, long-term) are given. “Other" borrowing then is the difference between the two.

of corresponding maturity and in 1996 reaching a volume approximately equal to one half to two thirds of the corresponding bank loans. While other long-term borrowing is highly likely to have financed investment in fixed assets (as part of the investment financing category "external funds"), some of the other short-term borrowing may likewise have financed investment unless production requires a continuously increasing ratio of total short-term borrowing per value added. Accounts payable finally grew at the same rate as short-term bank loans and their ratio to value-added thus remained stable.

How do these financial variables impact on investment in fixed assets? Chart 1 traces a supply curve for investment funds. At low interest rates firms rely primarily on internal financing which carries no interest payments (the leg between points A and B).[16] While part of these funds are likely to be retained profits, they may also include free external funds such as down-payments by new employees to obtain a job with the firm. Managers may resort to their private funds to bridge short-term needs.[17] Supplier credit can be used free of charges up for a certain time. Once these funds are exhausted (point B) enterprises begin to pay interest in order to obtain further external funds. These could be relatively cheap short-term loans channeled into investment, supplier credit that carries a cost once extended past its due date, or low-interest loans from government departments. The price of these funds increases with their supply until the marginal price reaches the interest rate on long-term bank loans (point C).

From here on, firms which are not constrained in their access to long-term bank loans simply borrow at the given interest rate on long-term bank loans as much funds as needed to implement their investment in fixed assets. On the other hand, firms which are constrained in their access to long-term bank loans may receive only a small loan (the leg

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16 The opportunity costs are low given that capital markets in China are far from perfect and external investment opportunities may thus be lacking. In the following, opportunity costs are ignored.

17 Interviews with township and village enterprises in the three regions of China (in Shaanxi Province, Henan Province, Hebei Province, and Jiangsu Province) during 1997 and 1998 showed that employee and manager funds provide short-term financing in many small enterprises.

between points C and D) and then have to rely on increasingly expensive other external funds. Once the interest rate reaches the level of the informal financial sector, more funds are likely to be forthcoming (the leg between points E and F) at this given, high interest rate. But at some degree of indebtedness external borrowing may become almost impossible (point F).

The chart lacks a demand curve. Given that investment decisions appear largely independent of profitability and demand measures and could well be driven by continuous "investment hunger," the demand for investment funds in any given period may be to the right of point D. The since 1996 rapid growth of the semi-formal rural cooperative funds, lending, among others, to township and village enterprises at twice the interest rate in the formal financial sector shows that at least some enterprises fall to the right of point D. If the provincial demand curve is to the right of point D, then two groups of provinces (enterprises) should emerge. Provinces with unrestricted access to long-term bank loans, once they have reached point D, should freely draw on long-term bank loans at the given, relatively low and stable marginal interest rate. Their share of other long-term borrowing in total borrowing should be low. Provinces constrained in their access to long-term bank loans, on the other hand, should experience a relatively high marginal interest rate and a larger share of other long-term borrowing. The following subsection tests these hypotheses, while the second subsection looks at the degree to which enterprises substitute funds internally between production and investment use.

Reliance on other long-term borrowing

In the following, provinces are split into two groups depending on the share of bank loans in total investment financing.[18] If the scenario laid out above is correct and some enterprises are constrained in their access to bank loans, then a below-average share of

bank loans in investment financing ("below-average group") should be accompanied by a relatively large share of other long-term borrowing in total borrowing (only available as stocks in the balance sheet) and a relatively high marginal interest rate.

The share of other long-term borrowing is in fact larger for the below-average group than for the above-average group, but the difference is statistically insignificant. Likewise, in below-average provinces the average interest rate paid on total borrowing—no distinction according to the type of borrowing is possible—is higher than in above-average provinces, but the difference is statistically significant at the 10% level only (one-tailed test). (See Table 4 on the various values for the two groups.)

In above-average provinces the share of other long-term borrowing in total borrowing should simply be the equilibrium outcome given the supply curve for such funds and the nationwide uniform, fixed interest rate on bank loans; a higher share of other long-term borrowing in total borrowing should not lead to a higher interest rate. Figure 1 shows that in fact no correlation exists. But below-average provinces which presumably are constrained in their access to bank loans should be forced to pay a higher average interest rate once they have to increase their other long-term borrowing. Figure 2 shows that this is not the case; there is again no correlation between the interest rate and the share of other long-term borrowing in total borrowing.

For both groups a strong trade-off exists between the growth of long-term bank loans (per net fixed assets) and long-term other borrowing (per net fixed assets) at a 0.1% significance level. (See Table 5.) This could mean that both groups are equally constrained in their access to bank loans—but then the interest rate paid on total borrowing should rise with the share of other long-term borrowing, which it is not.[19] That

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18 The provincial average share of bank loans in investment financing is the arithmetic mean of all provinces.

19 One caveat is that the average interest rate paid on total borrowing may not be rising with the share of other long-term borrowing because enterprises could be ending interest payments to the formal financial sector once no further bank loans are forthcoming.

the interest rate does not rise suggests that other long-term borrowing and bank loans are rather perfect substitutes.

Reliance on internal funds

If it is costly for enterprises to change the level of investment in the short run and if bank funds turn out to not be available as expected, enterprises can increase internal financing for investment projects by relying on cash flow in the long run and, if necessary, drawing down working capital in the short run. Enterprises thereby equate marginal returns across different assets taking into consideration that interrupting investment projects due to external financing constraints may carry high adjustment costs. In an investment regression the independent variable 'change in working capital' should exhibit a negative sign if the firm is constrained in its access to external finance; working capital is then used to smooth the investment flow in the absence of access to external funds. Cash flow, on the other hand, as regular means to finance investment in fixed assets, is always likely to have a positive sign.

Investment (standardized by end-of-year net fixed assets) thus is regressed not only on the demand and control variables but also on cash flow (standardized by end-of-year net fixed assets; CFCAP) and on the absolute change in working capital (per net fixed assets) during the year (DELWCCAP).[20] Profitability measures are not included as they should be reflected in cash flow. Investment thus is viewed to be determined as

$$\begin{aligned} INVCAP_t = \quad & \beta_1 \, INTERCEPT + \beta_2 \, DUMMY95 + \beta_3 \, DUMMY96 \\ & + \beta_4 \, \text{demand variables}_t \\ & + \beta_5 \, CFCAP_t + \beta_6 \, DELWCCAP \\ & + \beta_7 \, \text{control variables}_t + \mu_t \, . \end{aligned}$$

Since the change in working capital (DELWCAP) is a decision variable and thus endogenous—the decision on investment and on the change in working capital is a joint one—two-stage least squares is applied, using all exogenous regressors and beginning-of-year working capital relative to net fixed assets (WCAPLAG) as instruments to explain DELWCAP. The auxiliary regression, if run separately, reads

$$\begin{aligned} \text{DELWCAP} = {} & \delta_1 \text{ INTERCEPT} + \delta_2 \text{ DUMMY95} + \delta_2 \text{ DUMMY96} \\ & + \delta_4 \text{ demand variables}_t \\ & + \delta_5 \text{ CFCAP} + \delta_6 \text{ WCAPLAG} \\ & + \delta_7 \text{ control variables}_t + \nu_t \, . \end{aligned}$$

For constrained enterprises, a high level of beginning-of-year working capital relative to net fixed assets offers more opportunities to finance shortfalls in investment funding by drawing down working capital than a low level does. Cash flow should have either a negative or no impact on the change in working capital as all cash flow is used to finance investment.

These hypotheses are not confirmed. In the investment regression the coefficient of cash flow is significantly positive for the below-average group, but the change in working capital carries the wrong sign and is insignificant. For the above-average group neither cash flow nor the change in working capital has any influence on investment. The regression determining the change in working capital shows that cash flow does add to working capital independent of the group, and thus that the below-average group is not

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20 The estimation procedure closely follows Fazzari and Petersen (1993), and Fazzari, Hubbard, and Petersen (1988).

using all its cash flow to finance investment. The level of previous-period working capital is highly significant with the correct negative sign for both groups.

These results suggest that while the below-average group does rely on cash flow to in part finance investment, while the above-average group doesn't, none of the two groups—in particular not the below-average group—appears to be smoothing investment in the face of a potential bank financing constraint by drawing down working capital. In other words, the below-average group, just as the above-average group, does not appear to face a constraint in its access to bank funds at its present level of investment.

Conclusions

Bank lending to township- and village-run enterprises has stagnated in recent years despite the fact that their investment in fixed assets as well as their output have grown continuously. This raises the question of whether township- and village-run enterprises are constrained in their access to bank loans. A first investment regression shows that financial variables play a crucial role in determining investment. But closer inspection of two other sources of investment funds, "other long-term borrowing" and working capital, suggests that township-and village-run enterprises may not lack access to bank funds at their present level of investment.

The insignificance of lagged profitability and demand variables in the investment regression compared to the significance of current return on assets (and of the relative size of long-term bank loans per net fixed assets) suggest that investment is simply undertaken when financing is available. The regression results raise the specter of investment hunger—investment not being justified by the economic viability of a project. If township- and village-run enterprises invest for other than economic reasons, for

example, due to local employment objectives or distorted incentives for managers, mis-allocated investment may have little long-term effect on economic growth. In the short run, the creation of fixed assets on a scale exceeding that of the previous period requires itself additional labor and resources, thus creating immediate growth. But if there is no demand for the goods that can be produced with the new fixed assets, these assets will remain idle. Township- and village-run enterprises thus come to resemble state-owned enterprises.

Contrary to the claims of TVEs that growth targets cannot be reached due to a lack of access to bank lending, there exists no significant bank finance constraint for TVE investment. At worst, any shortfall in bank lending is immediately replaced by equally cheap and readily available other long-term borrowing. Even the TVEs with the lowest share of bank funds in investment financing are not resorting to their working capital or using all their cash flow to finance investment. In the provinces where bank funds account for only a below-average share of investment financing, barely half of cash flow finds its way into investment; in above-average provinces cash flow does not matter at all for investment. As long-term bank loans simply fuel investment with scant regard for economic viability, a tightening of long-term bank lending is well justified.

References

Agricultural Ministry. “Quanguo xiangzhen qiye caiwu tongji baobiao zhidu” (National financial and statistical reporting system of township and village enterprises). Nongqifa #16/1997 (28 August 1997).

Berthelemy, Jean Claude, and Aristomene Varoudakis. “Models of Financial Development and Growth: A Survey of Recent Literature,” Chapter 1 in Niels Hermes and Robert Lensink, eds., *Financial Development and Economic Growth: Theory and Experiences from Developing Countries*. London: Routledge, 1996, pp. 7-34.

Byrd, William A. “Rural Industrialization and Ownership in China.” *Comparative Economic Studies 32*, no. 1 (Spring 1990): 73-107.

_____, and Alan Gelb. “Township, Village, and Private Industry in China’s Economic Reform,” Chapter 19 in Jaime de Melo and Andre Sapir, eds., *Trade Theory and Economic Reform: North, South, and East: Essays in Honor of Bela Balassa*. Oxford: Blackwell, 1991, pp. 327-49.

Chang Chun, and Wang Yijiang. “The Nature of the Township-Village Enterprise.” *Journal of Comparative Economics 19* (1994): 434-52.

Chapman, D.R., C. W. Junor and T.R. Stegman. "Cash Flow Constraints and Firms' Investment Behavior." *Applied Economics 28*, no. 8 (1996): 1037-44.

Chen Yong-Sheng, Wim P.M. Vijverberg. “Efficiency and Technological Change in Township-Village Enterprises in China in 1983-1995.” Manuscript, National Chenchi University (Taipei, Taiwan) and University of Texas at Dallas, December 1997.

DaCosta, Maria N., Wayne Carroll, and Wang Deming. “The Contribution of Township and Village Enterprises to China’s Economic Development: An Econometric Analysis.” Manuscript, University of Wisconsin-Eau Claire and Whitewater, 1998.

Fazzari, Steven M., R. Glenn Hubbard, and Bruce C. Petersen. “Financing Constraints and Corporate Investment.” *Brookings Papers on Economic Activity*, no. 1 (1988): 141-95.

_____, and Bruce C. Petersen. “Working Capital and Fixed Investment: New Evidence on Financing Constraints.” *RAND Journal of Economics 24*, no. 3 (Autumn 1993): 328-42.

Gertler, Mark. “Financial Structure and Aggregate Economic Activity: An Overview.” *Journal of Money, Credit and Banking 20*, no. 3 (Part 2, Aug. 1988): 559-88.

GGKFSQNDZGDQJJ. *Gaige kaifang shiqi nian de zhongguo diqu jingji* (China’s regional economy in seventeen years of reform). Beijing: Zhongguo tongji chubanshe, 1996.

Gu Tianhui, and Gu Yingxian. “Xindai zhengce dui xiangzhen qiye tiaokong zuoyong de dingliang fenxi” (Quantitative analysis of the macroeconomic control function of credit policies for township and village enterprises). *Jingji yu guanli yanjiu* #5/1992 (May 1992): 27-30.

Hubbard, R. Glenn, Anil K. Kashyap, and Toni M. Whited. "Internal Finance and Firm Investment." *Journal of Money, Credit, and Banking 27*, no. 3 (August 1995): 683-701.

Hubbard, R. Glenn, and Anil K. Kashyap. "Internal Net Worth and the Investment Process: An Application to U.S. Agriculture." *Journal of Political Economy 100*, no. 3 (1992): 506-34.

Jefferson, Gary H., Thomas G. Rawski, and Zheng Yuxin. ”Chinese Industrial Productivity: Trends, Measurement Issues, and Recent Developments." *Journal of Comparative Economics 23*, no. 2 (Oct. 1996): 146-80.

Jin Hehui, and Qian Yingyi. “Public vs. Private Ownership of Firms: Evidence from Rural China.” Working paper, Stanford University, November 1997.

Kadapakkam, Palani-Rajan, P.C. Kumar and Leigh A. Riddick. "The Impact of Cash Flows and Firm Size on Investment: The International Evidence." *Journal of Banking & Finance 22*, no. 3 (March 1998): 293-320.

King, Robert G., and Ross Levine. “Financial Intermediation and Economic Development,” Chapter 6 in Colin Mayer and Xavier Vives, eds., *Capital Markets and Financial Intermediation*. Cambridge: Cambridge University Press, 1993a, pp. 156-89.

King, Robert G., and Ross Levine. “Finance and Growth: Schumpeter Might Be Right.” *The Quarterly Journal of Economics 108*, no. 3 (Aug. 1993b): 717-38.

Kung, James Kai-sing. “The Structure and Evolution of Property Rights in China’s Village Enterprises: The Case of Wuxi County.” Working Papers in the Social Sciences, No. 4. Division of Social Science, The Hong Kong University of Science and Technology, 24 April 1997.

Levine, Ross, and Sara Zervos. “Stock Markets, Banks, and Economic Growth.” *American Economic Review 88*, no. 3 (June 1998): 537-58.

Levine, Ross. “Financial Development and Economic Growth: Views and Agenda.” *The Journal of Economic Literature 35*, no. 2 (June 1997): 688-726.

Lin Qingsong, He Jiacheng, and Du Haiyan. “Rural Industrial Enterprises and the Role of Local Governments: A Chinese Case Study,” in *Advances in the Economic Analysis of Participatory and Labor-Managed Firms*. Vol. 4. 1992, pp. 243-71.

Ma Rong, Wang Hansheng, and Liu Shiding. *Zhongguo xiangzhen qiye de fazhan lishi yu yunxing jizhi* (Historical development and crucial aspects of Chian’s township and village enterprises). Beijing: Beijing daxue chubanshe, 1994.

Naughton, Barry. “China’s Reforms: Structural and Welfare Aspects. Chinese Institutional Innovation and Privatization from Below.” *American Economic Review 84*, no. 2 (May 1994): 266-70.

Nee, Victor. “Organizational Dynamics of Market Transition: Hybrid Forms, Property Rights and Mixed Economy in China.” *Administrative Sciences Quarterly 37*, no. 1 (March 1992): 1-27.

Oi, Jean C. "Cadre Networks, Information Diffusion, and Market Production in Coastal China." University of Western Ontario, Papers in Political Economy, No. 52 (October 1994).

_____. *Rural China Takes Off: Institutional Foundations of Economic Reform*. Berkeley: University of California Press, 1999.

Roubini, Nouriel, and Xavier Sala-i-Martin. “Financial Repression and Economic Growth.” *Journal of Development Economics 39*, no. 2 (April 1992): 5-30.

Shaanxi Province TVE Administration Bureau 10 June 1997. "Guanyu wo sheng shiban xiangzhen qiye hezuo jijinhui qingkuang de baogao" (Report on the TVE rural credit cooperatives in Shaanxi Province).

Stiglitz, Joseph E., and Andrew Weiss. "Credit Rationing in Markets with Imperfect Information." *The American Economic Review 71*, no. 3 (June 1981): 393-410.

Thornton, John. "Financial Deepening and Economic Growth in Developing Economics." *Applied Economics Letters 3* (April 1996): 243-6.

Walder, Andrew G. "Local Governments as Industrial Firms: An Organizational Analysis of China's Transitional Economy." *American Journal of Sociology 101*, no. 2 (September 1995): 263-301.

Wei Shangjin. "Open Door Policy and China's Rapid Growth: Evidence From City-Level Data." NBER Working Paper Series, Working Paper No. 4602, December 1993.

Weitzman, Martin L., and Xu Chenggang. "Chinese Township-Village Enterprises as Vaguely Defined Cooperatives." *Journal of Comparative Economics 18* (1994): 121-45.

Williamson, Stephen D. "Costly Monitoring, Loan Contracts, and Equilibrium Credit Rationing." *The Quarterly Journal of Economics 102*, no. 1 (Feb. 1987): 135-45.

Wong, John, Ma Rong, and Mu Yang. *China's Rural Enterprises: Ten Case Studies.* Singapore: Times Academic Press, 1995.

Xu Chenggang. A Different Transition Path: Ownership, Performance, and Influence of Chinese Rural Industrial Enterprises. Garland Studies on Industrial Productivity. New York: Garland Publishing Inc., 1995.

Xu Xiaonian, and Wang Yan. "Ownership Structure, Corporate Governance, and Corporate Performance." Policy Research Working Paper No. 1794. The World Bank Economic Development Institute, Office of the Director, June 1997.

ZGTJNJ. *Zhongguo tongji nianjian* (China Statistical Yearbook). Beijing: Zhongguo tongji chubanshe. Various issues.

XZQYCWTJHZZL. *Xiangzhen qiye caiwu tongji huizong ziliao* 1994 (Aggregate Financial Statistics of Township and Village Enterprises 1994). Beijing: Nongyebu xiangzhen qiyeju, 1995.

ZGXZQYNJ. *Zhongguo xiangzhen qiye nianjian* (China Township and Village Enterprise Yearbook). Beijing: Zhongguo nongye chubanshe. Various issues.

Table 1. Summary Statistics on Investment Determinants across 28 Provinces (1996)

Variable	Definition	China	SD	CV	Max	Min
Dependent variable						
INVCAP	Investment per net fixed assets	0.36	0.12	0.31	0.60	0.12
Independent variables						
Enterprise profitability						
ROA	Return (pre-tax profit) per assets	0.16	0.08	0.47	0.39	0.06
Product demand						
INCCAP	Income (business revenue) per net fixed assets	4.24	1.48	0.38	7.92	1.42
INVENT	Business costs per average inventory costs	7.22	3.26	0.40	14.71	3.23
Enterprise characteristics: structure and ownership						
AVESIZE	Number of employees per enterprise	38.43	14.98	0.38	90.46	20.15
INDTVE	Share of employees in industrial enterprises	0.73	0.15	0.21	0.99	0.30
EXPORT	Share of revenue from exports	0.16	0.11	0.96	0.40	0.01
TSHVILL	Share of employees in township-run ent.	0.50	0.13	0.24	0.83	0.33
Provincial development stage						
GDPLAB	Provincial GDP per labor (in th. yuan RMB)	5.70	3.87	0.56	20.61	2.27
Enterprise financial variables						
LLOACAP	Long-term loans per net fixed assets	0.14	0.08	0.45	0.39	0.02
Annual change in the pool of enterprises						
	Employees 1996 / 1995	0.98	0.09	0.09	1.18	0.71
	Employees 1995 / 1994	1.03	0.17	0.16	1.68	0.80
	Employees 1994 / 1993	1.02	0.11	0.11	1.16	0.59
	Number of enterprises 1996 / 1995	0.96	0.11	0.11	1.22	0.66
	Number of enterprises 1995 / 1994	0.99	0.17	0.16	1.53	0.74
	Number of enterprises 1994 / 1993	0.97	0.13	0.14	1.12	0.60

"China" denotes the nationwide value, SD the standard deviation of the 28 provinces around the provincial mean (giving each province equal weight), CV the coefficient of variation (SD / provincial mean), MAX the maximum value across the 28 provinces, and MIN the minimum value.

ROA is calculated as pre-tax profit per net fixed plus current assets. Data on total assets, exceeding net fixed plus current assets together by approximately 10%, would only be available for 1994 (rather than 1993) through 1996.

Table 2. Investment Determinants

	Dependent variable: INVCAP					
Regression	#1		#2		#3	
Number of observ.	83		56		82	
R^2	0.4553		0.5418		0.5127	
Adjusted R^2	0.3796		0.4140		0.4361	
Prob(F-stat.)	0.0000		0.0002		0.0000	
	Coefficient	t-stat.	Coefficient	t-stat.	Coefficient	t-stat.
Intercept	-0.0270	-0.2330	-0.1856	-1.2868	-0.1214	-0.9860
Dummy 1995	-0.0292	-1.0441			-0.0132	-0.4689
Dummy 1996	***-0.0779	-2.7100	-0.0442	-1.2042	-0.0507	-1.6549
ROA	*0.5741	1.7232	0.3056	0.4582	*0.5398	1.6956
ROALAG			0.2540	0.2993		
INCCAP	-0.0069	-0.5385	-0.0182	-0.4550	-0.0064	-0.5042
INCCAPLAG			0.0104	0.2589		
INVENT	*0.0111	1.8830	0.0100	1.0441	**0.0126	2.2206
INVENTLAG			0.0033	0.3495		
AVESIZE	0.0004	0.3407	0.0007	0.4589	0.0009	0.7778
INDTVE	***0.2832	3.1683	***0.4764	3.6715	***0.3318	3.8076
EXPORT	0.0502	0.3528	-0.0129	-0.0674	0.1583	1.1015
TSHVILL	***0.3936	3.6713	***0.4133	3.2666	**0.2777	2.5290
GDPLAB	***-1.4E-5	-2.7510	***-1.8E-6	-3.1249	***-1.6E-5	-3.2726
LLOACAP					**0.4053	2.5651

"LAG" means a value is lagged one period.

All regressions pool the 28 provinces over the three years 1994-1996. For the variables included in regression #1 1993 data is also available. The regression results including the year 1993 resemble those for the year 1994-96 reported here.

* Significant at the 10% level.

** Significant at the 5% level.

*** Significant at the 1% level.

Table 3. Financing of Investment in Fixed Assets by Township- and Village-Run Enterprises

	Amount (in b yuan), shares (in %)				Growth rates (in %)		
	1993	1994	1995	1996	1994	1995	1996
Investment statistics							
Total investment financing (in b yuan)	2176.3	2542.8	2936.7	3126.9	14.88	16.00	6.90
Total investment financing (in %)	100.00	100.00	100.00	100.00			
State support funds (in %)	1.09	0.88	0.70	0.58	-6.88	-8.08	-10.92
Appropr. from superordinate depts. (in %)	3.89	2.94	2.07	1.84	-13.23	-18.16	-4.91
Bank loans (in %)	30.83	28.70	25.82	24.77	6.94	4.34	2.57
Other external funds (in %)	16.46	17.68	20.28	21.25	23.39	33.02	12.03
Among which: foreign (in %)	(8.29)	(9.18)	(10.55)	(10.40)	27.30	33.29	5.38
Own funds (in %)	36.84	40.00	41.38	41.94	24.73	20.00	8.33
Among which: from individuals (in %)	(8.10)	(9.62)	(7.43)	(6.66)	36.35	-10.35	-4.22
Others (in %)	10.88	9.79	9.52	9.00	3.33	12.85	0.98
Bank loans across provinces:							
Coefficient of variation for share, growth rate	0.23	0.36	0.34	0.38	2.37	2.48	3.85
Maximum share, growth rate (in %)	54.94	70.25	53.74	53.01	213.61	160.43	69.45
Minimum share, growth rate (in %)	19.70	12.29	13.83	7.21	-55.72	-46.26	-43.41
Bank lending according to ent. balance sheet							
TVE long-term loans (year-end, b yuan)		100.61	114.14	121.79		13.45	6.70
Coefficient of variation across provinces						5.80	2.41
Maximum growth rate (in %)						187.37	94.05
Minimum growth rate (in %)						-38.04	-83.66
TVE long-term loans per net fixed assets (%)		19.36	15.99	14.11		-17.43	-11.75
TVE short-term loans (year-end, b yuan)		205.23	265.19	310.92		29.22	17.24
Coefficient of variation across provinces						4.00	0.87
Maximum growth rate (in %)						13.47	1.11
Minimum growth rate (in %)						-0.23	-0.08
TVE short-term loans per value added (%)		32.12	28.34	30.31		-11.79	6.96
Total TVE loans (year-end, b yuan)	220.85	305.83	379.33	432.71	38.48	24.03	14.07
Other long-term borrowing (year-end, b yuan)		58.91	76.96	86.74		30.65	12.71
Other short-term borrowing (year-end, b yuan)		93.38	140.73	168.95		50.70	20.05
Accounts payable (year-end, b yuan)		341.01	453.41	531.65		32.96	17.26

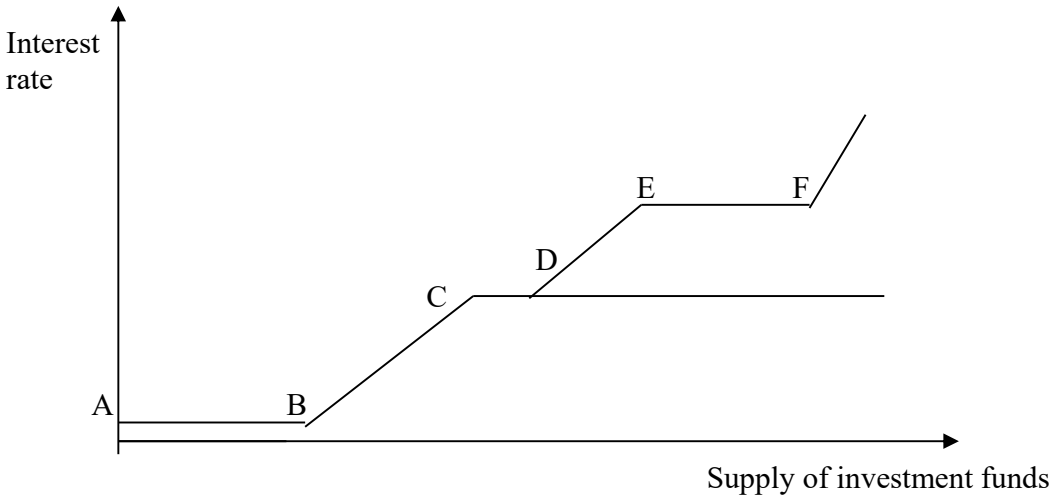

Chart 1. Supply of Investment Funds

Table 4. Statistics on Provinces with Below-Average vs. Above-Average Share of Bank Loans in Investment Financing

	Bank loan share	
	below average	above average
Share of other long-term borrowing in total borr.		
Mean	0.3529	0.3336
S.e.	0.1155	0.1248
Number of observations (1994-1996)	46	36
Interest rate on total borrowing		
Mean	0.1183	0.1066
S.e.	0.0341	0.0229
Number of observations (1994, 1996)	32	24
Correlation coefficient between the share of other long-term borrowing and the interest rate	0.1667	0.1112
Mean growth rate of other long-term borrowing per net fixed assets (1995, 1996)	2.63%	28.02%
Mean growth rate of long-term bank loans per net fixed assets (1995, 1996)	-16.84%	-13.23%

The interest rate is derived as financial expenses plus interest income per total borrowing. "Financial expenses" (*caiwu feiyong*), available for the years 1993, 1994, and 1996 comprise net interest payments (i.e., interest paid minus interest received), handling fees of financial institutions and exchange losses. (Only for 1996 "net interest payments" are available; they are about 10% below financial expenses.) Interest income is derived by multiplying the average annual interest rate on current deposits by the "money" assets of enterprises (huobi zijin), i.e., primarily bank deposits; the latter are only available for the years 1994 and 1996. Adjusting the financial expenses for interest received increases the average interest rate paid on total borrowing by 0.6% - 0.7% in the above- and below-average groups.

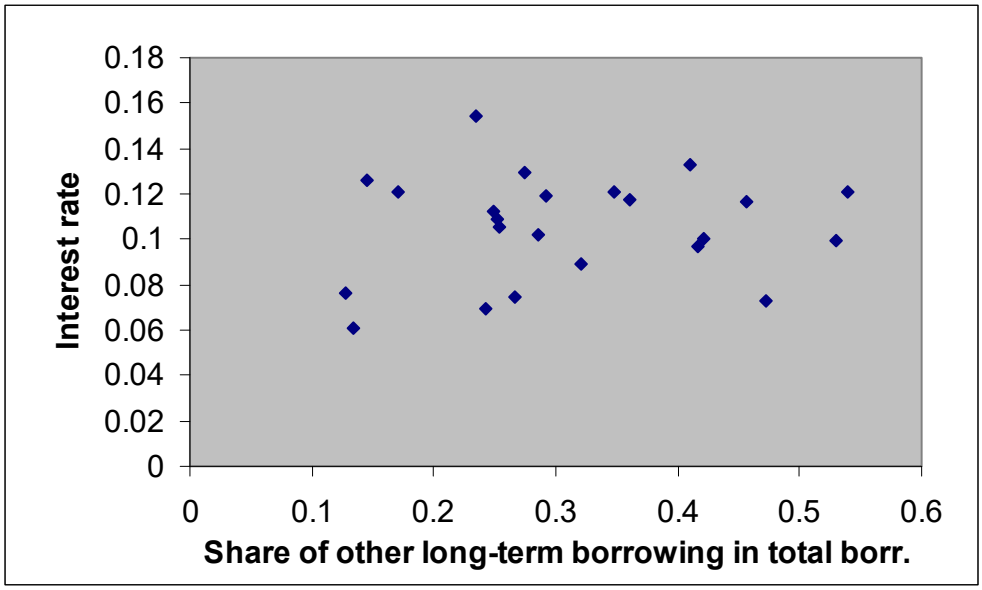

Figure 1. Interest Rate Vs. Share of Other Long-term Borrowing in Total Borrowing, Above-Average Group

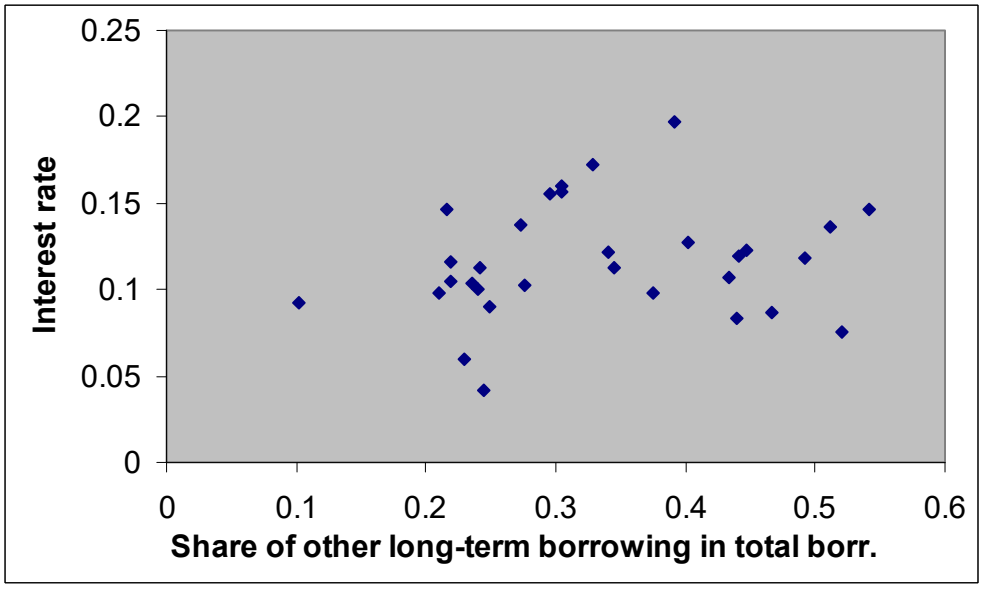

Figure 2. Interest Rate Vs. Share of Other Long-term Borrowing in Total Borrowing, Below-Average Group

Table 5. Correlation Coefficients of Growth Rates of Financial Variables

	SLOA	OSBOR	LLOA
Below-average group			
Short-term bank loans (SLOA)			
Other short-term borrowing (OSBOR)	*-0.3637		
Long-term bank loans (LLOA)	**0.5348	-0.3595	
Other long-term borrowing (OLBOR)	-0.1329	*0.4586	***-0.6307
Above-average group			
Short-term bank loans (SLOA)			
Other short-term borrowing (OSBOR)	*-0.3896		
Long-term bank loans (LLOA)	0.1326	0.3105	
Other long-term borrowing (OLBOR)	-0.3471	0.0020	***-0.6727

"Below" and "above" average are defined by the share of bank loans in investment financing.

All variables are standardized by net fixed assets. Thus the correlation coefficient -0.3637 denotes the correlation coefficient of the growth rate of the ratio other short-term borrowing to net fixed assets with the growth rate of the ratio short-term loans to net fixed assets.

In the above-average group the growth rate of accounts payable is significantly and negatively correlated with the growth of long-term bank loans; otherwise accounts payable have no significant correlation with any other variables.

* Significant at the 5% level.
** Significant at the 1% level.
*** Significant at the 0.1% level.

Table 6. Investment Determination With Internal Funds

	Dependent variable: INVCAP					
Regression	Total sample		Below-average group		Above-average group	
Number of obs.	83		46		37	
R^2	0.4030		0.5279		0.4434	
Adjusted R^2	0.3105		0.3752		0.1841	
Prob(F-stat.)	0.0000		0.0011		0.1236	
	Coefficient	t-stat.	Coefficient	t-stat.	Coefficient	t-stat.
Intercept	0.0045	0.0355	0.0045	0.0204	0.2637	1.0331
Dummy 1995	-0.0468	-1.2319	-0.0769	-1.4358	0.0017	0.0329
Dummy 1996	**-0.0862	-2.2248	*-0.0954	-1.8261	-0.0749	-1.2731
INCCAP	0.0016	0.1296	-0.0045	-0.6098	-0.0226	-0.5969
INVENT	**0.0132	2.2339	0.0038	0.4543	*0.0372	1.9737
CFCAP	0.1724	0.9488	**0.5146	2.1589	0.0142	0.0344
DELWCCAP	0.1750	0.5921	0.2596	0.5067	-0.0119	-0.0378
AVESIZE	0.0008	0.5570	-8.1E-5	-0.0406	-0.0001	-0.0351
INDTVE	***0.2913	3.0932	**0.3012	2.4652	-0.1657	-0.5869
EXPORT	-0.0129	-0.0883	-0.1832	-1.0813	0.7825	1.5461
TSHVILL	***0.3704	3.1975	**0.4705	2.1882	0.1697	0.9415
GDPLAB	***-1.6E-5	-2.9159	-1.1E-5	-1.2828	-7.4E-6	-0.5151
	Dependent variable: DELWCCAP					
Regression	Total sample		Below-average group		Above-average group	
Number of obs.	83		46		37	
R^2	0.5022		0.4653		0.7512	
Adjusted R^2	0.4251		0.2923		0.6417	
Prob(F-stat.)	0.0000		0.0133		0.0000	
	Coefficient	t-stat.	Coefficient	t-stat.	Coefficient	t-stat.
Intercept	0.0134	0.1693	-0.1799	-1.4070	0.1155	0.8902
Dummy 1995	0.0225	1.0619	0.0204	0.6240	-0.0179	-0.6332
Dummy 1996	0.0209	0.9517	0.0105	0.3089	0.0024	0.0809
INCCAP	-8.7E-5	-0.0110	0.0057	0.5510	0.0153	0.7768
INVENT	-0.0004	-0.1077	0.0020	0.3761	-0.0132	-1.3675
CFCAP	***0.3812	3.1538	*0.3746	1.9595	**0.4993	2.4223
WCCAPLAG	***-0.5314	-5.4508	***-0.5093	-2.8422	***-0.7352	-6.2261
AVESIZE	***-0.0028	-3.4082	**-0.0033	-2.4691	*-0.0027	-1.8379
INDTVE	-0.0292	-0.4989	-0.0048	-0.0574	0.1014	0.7039
EXPORT	***0.2878	2.9491	**0.3378	2.3997	-0.0134	-0.0522
TSHVILL	-0.0229	-0.3145	0.1697	1.3254	-0.1206	-1.3189
GDPLAB	5.2E-6	1.5183	*1.1E-5	1.8830	-5.7E-6	-0.7717

Significance levels: *** 1% or below, ** 1-5%, * 5-10%.

Old abstract:

The rapid growth of township and village enterprises in China has frequently been attributed to their particular property rights structure and the special position of township and village enterprises in the process of economic transition. This paper, in contrast, argues that financial intermediation plays a much neglected but crucial role in determining investment in fixed assets and thus the accumulation of capital which drives output expansion and implements technological progress.

Provincial-level data shows that investment in fixed assets by township and village enterprises depends, among others, on the availability of funds, while profitability and demand variables are largely irrelevant. In as far as the volume of long-term bank loans to township and village enterprises has stagnated in recent years, investment appears impaired. However, even in provinces where bank loans finance a share of investment in fixed assets below nationwide average, enterprises do not substitute with expensive other external borrowing or by ravaging their working capital.

If township and village enterprises invest independent of the demand for their products, their investment behavior appears little different from that of state-owned enterprises. Investment is simply undertaken when external funds are available. That township and village enterprises with a low share of bank loans in investment financing are not putting their own funds into investment suggests that if bank lending policy were in fact tight, it is justifiably so.