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Formal versus Informal Finance:

Evidence from China

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Abstract

China is often mentioned as a counterexample to the findings in the finance and growth literature since, despite the weaknesses in its banking system, it is one of the fastest growing economies in the world. The fast growth of Chinese private sector firms is taken as evidence that it is alternative financing and governance mechanisms that support China's growth. This paper takes a closer look at firm financing patterns and growth using a database of 2,400 Chinese firms. The authors find that a relatively small percentage of firms in the sample utilize formal bank finance with a much greater reliance on informal sources. However, the results suggest that despite its weaknesses, financing from the formal financial system is associated with faster firm growth, whereas fund raising from alternative channels is not. Using a selection model, the authors find no evidence that these results arise because of the selection of firms that have access to the formal financial system. Although firms report bank corruption, there is no evidence that it significantly affects the allocation of credit or the performance of firms that receive the credit. The findings suggest that the role of reputation and relationship based financing and governance mechanisms in financing the fastest growing firms in China is likely to be overestimated.

Formal versus Informal Finance:
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Introduction

Financial development has been shown to be associated with faster growth and improved allocative efficiency.[1] While the research focus has been on formal financial institutions, the literature has recognized the existence and role played by informal financial systems, especially in developing economies.[2] The dominant view is that informal financial institutions play a complementary role to the formal financial system by servicing the lower end of the market - informal financing typically consists of small, unsecured, short term loans restricted to rural areas, agricultural contracts, households, individuals or small entrepreneurial ventures. Informal financial institutions rely on relationships and reputation and can more efficiently monitor and enforce repayment from a class of firms than commercial banks and similar formal financial institutions can.[3] According to this view however, informal financial systems cannot substitute for formal financial systems because their monitoring and enforcement mechanisms are ill-equipped to scale up and meet the needs of the higher end of the market.[4]

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[1] This literature includes cross-country studies (King and Levine, 1993; Levine and Zervos, 1998; Levine, Loazya and Beck, 2000; and Bekaert, Harvey and Lundblad, 2001 and 2005), firm level studies (Demirguc-Kunt and Maksimovic, 1998; Love, 2003; Beck, Demirguc-Kunt, and Maksimovic, 2005), industry level studies (Rajan and Zingales, 1998; Wurgler, 2000; Beck, Demirguc-Kunt, Laeven, and Levine, 2006) and individual country case studies (Guiso, Sapienza, and Zingales, 2002 in Italy and Bertrand, Schoar and Thesmar, 2004 in France)

[2] By informal financial institutions, we refer to the entire gamut of non-market institutions such as credit cooperatives, moneylenders, etc. that do not rely on formal contractual obligations enforced through a codified legal system.

[3] A large economics literature has also argued that informal institutions have a comparative advantage in monitoring (the peer monitoring view as in Stiglitz (1990) and Arnott and Stiglitz (1991)) and enforcement capacity. Theoretically the informal sector has been modeled as both, a competitor to its formal counterpart (as in Bell et al., 1997; Jain, 1999; Varghese, 2005) as well as a channel of formal funds, where informal lenders who offer credit acquire formal funds to service entrepreneurs' financing needs (Floro and Ray, 1997; Bose, 1998; Hoff and Stiglitz, 1998). Both strands of literature emphasize that informal lenders hold a monitoring advantage over the formal lender.

[4] There is a direct parallel with the prevalence of angel finance in the US. Business angels are typically wealthy individuals who provide the initial funding to young new firms with modest capital requirements.. However, Lerner (1998) argues that there is no evidence that angel financing generates positive financial returns or improves social welfare.

More recently, studies have emphasized the critical role played by informal networks and financial channels even in developed markets. Guiso, Sapienza and Zingales (2004) show that social capital affects the level of financial development across different regions of Italy and is particularly important when legal enforcement is weaker and among less educated people who have limited understanding of contracting mechanisms. Gomes (2000) investigates why minority shareholders invest in IPOs in environments with poor investor protection rights and concludes that controlling shareholders commit implicitly not to expropriate them because of reputation concerns. Garmaise and Moskowitz (2003) show that even in the United States, informal networks play an important role in controlling access to finance. Using the commercial real estate market as an example they show that brokers serve an important role in providing clients access to finance and that brokers and banks develop informal networks that have a significant effect on availability of finance. While the above work shows the existence of informal networks alongside formal systems, a controversial extension of this literature has been recent work by Allen, Qian, and Qian (2005), Tsai (2002), and Linton (2006) who argue that private sector firms in China, despite facing weaker legal protections and poorer access to finance than firms in the state and listed sectors, are the fastest growing due to their reliance on alternative financing and governance mechanisms.[5] Allen, Qian, and Qian (2005) further suggest that China may be an important counter-example to the law and finance literature's focus on formal systems since the fastest growing Chinese firms rely on alternative financing channels rather than formal external finance.

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[5] Besley and Levenson (1996) have also argued that economies like Taiwan (China) grew despite an underdeveloped formal financial sector due to informal institutions.

In this paper, we use detailed firm level survey data on 2400 firms in China to investigate which of the two views are consistent with the operation of the informal sector in China. Is the informal sector associated with high growth and profit reinvestment and serve as a substitute to the formal financial system or does the informal sector primarily serve the lower end of the market? To answer this question, we first investigate whether Chinese firms' financing patterns are different when compared to those of similar firms in other countries that have been the focus of the prior literature. Next, we explore how the financing patterns, both formal and informal, vary across different types of firms across cities and regions. We then study how bank finance and financing from informal sources are associated with firm sales growth, productivity growth and profit reinvestment.

We address these issues using a new data source, the Investment Climate Survey[6], a major firm level survey conducted in China in 2003 and led by the World Bank. The survey has information on financing choices for firms across 18 different cities. One of the strengths of the survey is its coverage of small and medium enterprises. Hence, in addition to information on commercial financing sources such as bank finance, the survey also includes information on sources of financing that are associated with small firm finance such as trade credit and finance from informal sources such as a money lender or an informal bank or other financing sources.

We find that 20% of firm financing in our sample is sourced from banks, which is comparable to the use of bank financing in other developing countries such as India, Indonesia, Brazil, Bangladesh, Nigeria and the Russian Federation. However, the

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[6] Other studies using the investment climate survey data on China include Cull and Xu (2005), Dollar et al. (2004).

breakdown of non-bank financing sources shows greater differences. Compared to other countries, firms in our sample rely on a large informal sector and alternative financing channels as suggested by Allen et al. (2005). These other financing sources could well be the large underground lending in China, which represents several hundred billion dollars in bank deposits according to a recent McKinsey report (Farrell et al. (2006)).

At the firm level, we find that bank financing is more prevalent with larger firms as expected.[7] We also find substantial firm level heterogeneity in financing patterns within China. The firms in the sample come from five different regions of China: Coastal, Southwest, Central, Northwest, and Northeast. The financing patterns show that the largest amount of bank financing is in the Coastal (23.3%) and Southwest regions (26%) that have an investment climate that facilitates access to formal sources of external finance.

We find that firms using formal bank finance grow faster than those financed from alternative channels. Our results hold even when we exclude firms registered as publicly traded companies or state owned companies and look at a sample of just private sector firms, which are the fastest growing firms in the Chinese economy. We also find that firms financed by formal bank finance experience higher reinvestment rates, and productivity growth at least equal to that of firms financed from non-bank sources. This suggests that the growth financed by banks is not inefficient growth.

The paper's results do not rely on establishing causality since even if it were the case that fastest growing firms are bank financed, then by revealed preference we know that at the margin banks are a better alternative to informal finance for fast growing firms.

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[7] Note that the large firms in our sample might be equivalent to small and medium enterprises in other economies.

However, we use a full battery of alternative specifications, a selection model, instrumental variables estimators and a matching estimator, to empirically test for the possibility that firms that obtain bank loans grow less fast than similar firms that rely on informal or other sources of financing. We find that, controlling for the endogeneity of the bank financing decision, bank finance is associated with higher sales growth and profit reinvestment. Controlling for perceived imperfections in the allocation of bank loans such as corruption among bank officers and importance of government help in obtaining loans in the selection models strengthens the effect of bank financing on firm performance. When we estimate a matching model, again we find that conditional on firm characteristics such as size, age, legal status, ownership and city location, bank financed firms grow faster and reinvest more compared to non-bank financed firms.

We also directly compare the performance of firms which report bank loans with that of firms that rely on external financing from informal sources. Firms which rely on informal external financing have lower profit reinvestment rates and do not grow faster or have higher productivity growth than firms that are bank financed. Only when informal financing is defined, as in Allen et al (2005), to include internal financing, is informal financing associated with higher productivity growth and reinvestment (but not higher growth).

While we find the majority of firms that receive bank loans grow faster as a result, we do find a subpopulation of firms that do not. Firms that report that government help was instrumental in obtaining a bank loan, about 16% of the sample, do not show improvements in growth, reinvestment or productivity. However, these results do not

make China an exception to the growth and finance literature. They are consistent with the work on socialized banks by La Porta et al. (2002) and Cole (2007).

Overall, our results suggest that even in fast growing economies like China where the formal financial system serves a small portion of the private sector, external finance from the formal financial system is associated with faster growth and higher profit reinvestment rates for those firms that receive it. We find no evidence that alternative financing channels are associated with higher growth. While we have some limited evidence that informal finance might help the smallest micro sized firms, we find that all firms irrespective of size, benefit from access to formal finance. Our findings suggest that the role of reputation and relationship based informal financing and governance mechanisms in supporting the growth of private sector firms is likely to be limited and unlikely to substitute for formal mechanisms.

We discuss the Chinese economy and its financial system in detail in Section 2. In Section 3 we describe the survey data and summary statistics and in Section 4 we present our empirical model. Section 5 presents our regression results, Section 6 discusses the results, and Section 7 concludes.

2. The Chinese Financial System

The Chinese financial system is characterized by a large and dominant banking sector that is predominantly state owned.[8] Consequently, a large share of bank funding

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[8] The banking sector is dominated by four large state owned banks that have historically had their own specialized role: the *Industrial and Commercial Bank of China* (provides working capital loans to state industrial enterprises), *China Agriculture Bank* (specializes in agricultural lending), *China Construction Bank* (provides funds for construction and fixed asset investment) and the *Bank of China* (specializes in trade finance and foreign-exchange transactions). While the above banks have ceased to be specialized sector-wise in recent years, there continues to be a large sectoral bias in their loan portfolios. In addition to the big four state-owned commercial banks, there are also several minor players that include Policy banks

goes to state controlled companies, regardless of their profitability, leaving companies in the private sector credit constrained. Lending by banks is also hampered by the lack of adequate information on borrowers' credit histories and financial performance, making lending to SOEs seem a low-risk option, given their government backing. The pervasive state ownership of the banking sector has resulted in a huge ratio of non-performing loans to total loans, poor profitability, poor institutional framework of the banking system, and weak corporate governance. Banking depth in fact seems to be negatively correlated with inter-provincial differences in growth rates as shown by Boyreau-Debray (2003) and Boyreau-Debray and Wei (2005).

However, the inefficiency of Chinese bank lending should not be overstated, especially for recent years since there has been a massive restructuring of the banking sector, including allowing entry of foreign banks, both to prepare the banks for equity listings and strategic sales and as a condition of China's accession to the WTO. Using firm-level survey data, Cull and Xu (2000, 2003) find that bank finance was associated with higher subsequent firm productivity, while government transfers were not. In addition, some analysts (Anderson, 2006) have argued that while the banking system is characterized by a short tail of corporate customers, the Chinese banks do not discriminate against private borrowers per se but do discriminate against small borrowers, including smaller SOEs, without visible cash flow. More recently, the China Banking Regulatory Commission has passed new laws encouraging banks to lend to small and medium enterprises.[9]

(eg: Export-Import Bank of China), Second-tier Commercial banks (eg: CITIC Industrial Bank) and Trust and Investment Corporations (ITICs) who capture smaller portions of the lending market.
[9] In July 2007, the China Banking Regulatory Commission promulgated the *Guidelines on Banks' Credit Businesses to Small Enterprises,* geared towards improving loan services to small and medium enterprises.

While China's banking system is large, its equity and bond markets are smaller than most of the other countries, both in terms of market capitalization and total value traded as a percentage of GDP. The equity markets are largely a vehicle for privatization by the government rather than a market for capital raising by firms with growth opportunities, as shown in Wang, Xu, and Zhu (2004). The corporate bond market in China is crippled by excessive government regulation and the lack of institutional investors and credit rating agencies to help price the debt accurately. Durnev, Li, Morck, and Yeung (2004) show that compared to other transition economies, China has one of the poorest functioning stock markets with highly synchronous stock returns that can be linked to weak property rights, corporate opacity and political rent-seeking.

Given the state of China's banking system and capital markets, several researchers including Tsai (2002) and Allen et al (2006) have argued that curb market finance has played a significant role in the Chinese economy by serving the needs of the private entrepreneurs who have been shut out of the formal banking system. In addition to the informal associations, there are also private money houses and underground lending organizations who function like banks but charge very high interest rates as suggested by Farrell et al. (2006). While these are technically illegal since they charge interest rates above the state-mandated interest rate ceilings, Tsai (2002) argues that in reality, most forms of informal finance that private entrepreneurs use fall into the realm of quasi-legality. They are not sanctioned by the People's Bank of China but are legally registered by another government agency within China.

Some of these improvements include assessing borrower repayment capacity in terms of available cash flow with less emphasis on formal collateral, requirement on all banks to set up a separate business department to undertake small business lending, and emphasis on achieving commercial sustainability as the primary goal rather than the historically subsidy-oriented approach to promoting small business finance.

While the informal financing system in China has an important niche in the market, it also has a dark side to it. Curb market lending comes at a high cost to individual borrowers and ranges from legal to quasi-legal to highly illegal. It is therefore interesting to examine if it is the informal institutions or the formal banking sector that is associated with faster growth.

3. Data and Summary Statistics

The data on Chinese firms come from the World Bank Investment Climate survey which was undertaken in early 2003 in collaboration with the Enterprise Survey Organization of the Chinese National Bureau of Statistics. The Chinese survey is part of the World Bank Enterprise Surveys which use standardized survey instruments and a uniform sampling methodology to benchmark the investment climate of countries across the world and to analyze firm performance. The Enterprise Surveys sample from the universe of registered businesses and follow a stratified random sampling methodology.

The firms are randomly surveyed from both manufacturing and services industries[10] with a restriction on minimum firm size where firm size is defined by number of employees. The minimum number of employees was set at 20 for manufacturing firms, and at 15 employees for services firms.

Twenty four hundred firms were sampled from the following 18 cities in order to represent the five main regions in China: (i) *Northeast*: Benxi, Dalian, Changchun, and Haerbin; (ii) *Coastal*: Hangzhou, Wenzhou, Shenzhen, and Jiangmen; (iii) *Central*:

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[10] The industries sampled include both manufacturing (apparel and leather goods, electronic equipment, electronic components, consumer products, vehicles and vehicle parts) and services (accounting and related services, advertising and marketing, business logistics services, communication services, and information technology services).

Nanchang, Zhenzhou, Wuhan, and Changsha; (iv) *Southwest*: Nanning, Guiyang, Chongqing, and Kunming; and (v) *Northwest*: Xi'an and Langzhou. Figure 1 shows a map of the different cities and the regions from where the firms were sampled.[11]

    The survey questionnaire has two main sections. The first section consists of questions on general information about the firm, its relations with clients and suppliers, its relations with the government, and qualitative questions asking for the manager's opinion on the business environment. The second section is based on interviews with the firm's accountant and personnel manager, asking for balance sheet information and other quantitative information on employee training, schooling, and wages. While most of the qualitative questions pertain only to the year 2002, a short panel from 1999 to 2002 is available for the quantitative questions.

    The survey allows us to identify firms on the basis of their registration status as corporations, state owned companies, cooperatives and other legal structures. In addition, each firm also provides a detailed breakdown of its ownership structure into domestic versus foreign owners as well as a more disaggregated breakdown into percentage owned by individuals, managers, institutional investors, firms and banks.

3.1. Financing Patterns: China Compared to Other Countries.

    Enterprise managers in the survey were asked: "Please identify the contribution of each of the following sources of financing for your establishment's new investments (i.e. new land, buildings, machinery and equipment)." The sources are internal financial

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[11] In an earlier phase of the survey in 2001, firms were sampled from following 5 Chinese cities: Beijing, Tianjin, Shanghai, Guangzhou, and Chengdu. We do not use these cities in our paper since the time period over which the information is available is different (1998-2000 as opposed to 2000-2002). In addition, firms in the first phase survey were not asked detailed information about their financing patterns.

sources such as retained earnings or loans from family and friends, and external financial sources such as equity, local commercial banks, foreign owned commercial banks, trade credit (supplier or customer credit), investment funds or special development financing, informal sources such as a moneylender or an informal bank and other sources. The sum of these proportions adds up to 100 percent.

We adopt two different categorizations of the various sources of financing. In the first categorization, we have the following six groups : **Bank Financing** that includes Local commercial banks and Foreign commercial banks; **Informal Finance** that includes financing from informal sources such as a money lender or an informal bank; **Operations Finance** that includes Trade Credit**; Equity Finance; Investment Funds** that includes Investment funds or Special Development Financing or other State Services and **Internal Finance** that includes Internal Funds or Retained Earnings, Loans from Family and Friends and the Other category.

In the second categorization, we adopt Allen et al. (2006)'s classification of financing sources into two groups: **Bank Finance**, that includes Local commercial banks and Foreign commercial banks and **Self Fund Raising** that includes all other sources such as retained earnings, informal sources, loans from family and friends, trade credit, investment funds, equity and the other category. [12] One limitation of our survey data is that financing patterns are given in terms of proportions of financing, not as debt to asset ratios, as is common in the previous literature.

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[12] Allen et al. (2006) consider two additional financing sources that we do not have information on in our survey: the state budget and foreign investment. This is unlikely to influence our results on bank finance and informal finance since we have only 116 firms in our sample that have more than 50% foreign ownership and as Allen et al. themselves mention, the state budget contributes to only 10% of state owned companies' total funding.

In Table 1, we compare firm-level financing patterns in China with other developing countries in the world. The data for the countries are obtained from other Investment Climate Surveys (ICS).[13] As of 2006, there were 67 country surveys covering over 40,000 firms. Since the core survey instrument is the same across all countries, we have comparable information on financing sources across the different countries. The only difference is some surveys also have information on leasing arrangements and credit card financing which is not provided in the case of China. We combine these two categories along with Trade Credit and label it Operations Finance in our tables.

In panel A of Table 1, we present individual financing patterns and in panel B we present aggregate financing patterns. In both panels, we compare firm-level financing patterns (averaged across all firms) in China with those in other emerging markets such as Bangladesh, Brazil, India,[14] Indonesia, Nigeria, and the Russian Federation. Panel A shows that China has the least amount of Internal financing/Retained Earnings (only 15.24%) compared to all the other emerging markets. On the other hand, China also has the highest average amount of Other Financing (42.70%) compared to the other developing countries. The next largest dependence on Other Financing is in Indonesia, but even there, only 8.8% of new investments are financed by Other sources. These other financing sources could well represent the large underground informal lending in China, which represents several hundred billion dollars in bank deposits according to a recent

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[13] The Investment Climate Surveys are an on-going initiative by the World Bank to study the investment climate conditions in developing countries and their impact on firm productivity, investment and employment.
[14] The information on financing choices for Indian firms comes from the World Business Environment Survey (WBES) which was also conducted by the World Bank as a precursor to the Investment Climate Surveys. The Indian ICS does not have detailed information on firm financing choices.

McKinsey report (Farrell et al. (2006)) and as suggested in Allen et al. (2006).[15] However, the use of funds from Family and Friends and Informal lending sources such as money lender or informal banks seems to be comparable with its use in other countries.

China also looks unique in the large usage of Equity financing (12.39%) compared to the other developing countries (all below 5%). However, when we look across other geographic regions, the East Asia and Pacific region (excluding China) uses the largest amount of Equity financing (21.38%) compared to other regions (below 5%). Our data on China allow for a more detailed breakdown of the equity issuance into sale of stock to employees, public issue of marketable shares to outside investors and sale of stock to legal persons. The sale of stock to employees and public issuance of marketable shares to outside investors is quite low at 2.89% and 1.26% respectively and most of the equity issuance is really sale of stock to legal persons (8.24%). Legal Person shareholders are unique to China and are analogous to institutional shareholders in western economies except that they tend to have strong state linkages[16] and are not widely held as in western economies.

In panel B, we look at the aggregate financing patterns. When we look at Internal Financing, which includes Retained Earnings, loans from Family/Friends and Other sources, Chinese firms look comparable to firms in other countries. Focusing on the

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[15] It could be that the Other Sources in China are actually Internal Funds/Retained Earnings that are mis-classified. While we don't have a detailed breakdown of what these Other sources could be for all firms, the responses from the 100 firms that do report the exact type of Other Financing suggest that there could be some mis-classification.

[16] The legal person identity was created to aid the transition of China's companies from state-owned to private-owned since the private sector did not have enough capital to acquire large tranches of state shareholdings. As described in Xu and Wang (1997) and Delios and Wu (2005), the legal person shareholder category comprises private companies, state-owned enterprises and non-bank financial institutions such as investment funds and security companies. The legal person shareholders differ from pure state shareholders in that they are profit seeking, and have relatively more freedom than state shareholders in deciding how to allocate profits and formulate and implement firm strategy.

Allen et al. (2005) categorization, Chinese firms source 20% of their funds from banks and the remaining 80% from self fund raising channels. These numbers are very similar to the averages for countries in Africa (Bank financing=19%, Self Fund Raising = 81%), South Asia (Bank financing=23%, Self Fund Raising=77%) and Latin America and the Caribbean (Bank financing=21%, Self Fund Raising=79%). Countries in East Asia and the Pacific use slightly more Bank financing (32%) and lesser amount of Self Fund Raising (68%) compared to China where as countries in East Europe and Central Asia and those in Middle East and North Africa use lesser Bank financing (13%) and greater Self Fund Raising (87%) than even China.

The financing numbers are consistent when we look across country-income groups. Use of Bank financing ranges from 18% in the Low Income and Middle Income countries to 21% in High Income countries and use of Self Fund Raising is between 79-83% across all country income groups. Overall, these figures suggest that Chinese firms are not an anomaly in their use of Self Fund Raising compared to other developing countries in contrast to the findings in Allen et al (2006). [17]

3.2. Financing Patterns across Firms in China

Table 2 shows how financing patterns vary across different types of firms in China. The five different regions, from which firms were sampled in the survey, vary

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[17] When we re-compute Table 1 for three different size classes (1-19 employees, 20-99 employees, and 100 and over employees) Chinese firms in each size class use less of internal financing and more of other financing compared to similar sized firms in the other emerging markets. However they are similar in their use of bank financing compared to firms from other emerging markets in the same size class. When we look at aggregate financing patterns, small firms in China use 10.2% bank financing (region averages for small firms range from 6.4 % in Europe and Central Asia (ECA) to 18.5% in Latin America and the Caribbean(LCR)), medium firms in China use 17.3% bank financing (region averages for medium firms range from 9.51% in Middle East and North Africa (MNA) to 33.55% in East Asia and Pacific (EAP) region, excluding China) and large firms in China use 28% bank financing (region averages for large firms range from 13.71% in Europe and Central Asia (ECA) to 45% in East Asia and the Pacific (EAP), excluding China).

considerably in their investment climate. According to Dollar et al. (2004), the eastern and coastal areas (Yangtze and Pearl River deltas) are more developed; inland cities especially in the West and the Northeast tend to have worse investment climates. Cities in the central region appear to be in the middle in terms of their investment climate. The financing patterns seem to be correlated with the quality of investment climate, with the largest amount of Local Bank financing being used in the Southwest (26%) and Coastal (23%) regions and the least amount being used in the Northwest (14%).

Panel A presents individual financing patterns and shows that there is substantial variation in financing patterns across different types of cities. Overall, there is very little use of formal external finance via banks or equity. For instance, the use of Local Bank financing is a mere 3.98% in the city of Haerbin (Heilongjiang province) in the Northeast region compared to 35.13% in Jiangmen which is in the coastal province of Guangdong. Jiangmen also has the highest amount of Foreign Bank financing, though it is a mere 1.57%. Wenzhou, another coastal city has the highest amount of Equity financing (40%) and also the lowest amount of Other financing (3.38%). The use of Investment funds and Operations finance is generally low (<4%) across the different cities and firms in several cities like Wenzhou and Wuhan use no trade credit or investment funds.

When we look at sources other than formal finance, we find that the use of Retained Earnings varies from 8% in Benxi in the northeast province to over 26% in Changchun, also in the northeast province. The use of funds from Family and Friends ranges from less than 1% in Guiyang and Shenzhen to over 11% in Lanzhou, Nanning and Wenzhou. Benxi, Wuhan, and Chongqing have the highest amount of Informal financing (4-6%). The use of Other financing is typically high in most cities ranging from

22% in Kunming to 70% in Shenzhen except for firms in Wenzhou where the average

Other financing is only 3.38%. [18] It is interesting that Shenzhen records the highest

amount of Other financing since this city is located in the Guangdong province which has

the highest number of private enterprises including underground lending organizations as

suggested by the McKinsey study.

Looking at aggregate financing patterns in panel B, the use of Internal funds

ranges from 46% in Benxi to 81% in Zhengzhou. When we use the Allen et al. (2005)

categorization, we find that several cities have in excess of 90% of their financing

coming from sources other than banks. Figure 2 reveals the financing patterns across the

different cities in increasing order of their use of bank financing. Figure 2 shows that

after Internal funds, firms use Equity or Bank finance. Use of informal sources,

investment funds and operations finance is very low. We control for the variation in

financing patterns across different cities in our regressions using city dummies.

Table 2 also shows that the very large firms use more of Bank financing (30%)

than the micro and small firms (14-15%). Publicly listed companies finance a little over

33% of their new investments through Bank Financing and 67% from Self Fund Raising

sources. By contrast, cooperatives fund only 18% of their new investments from banks

and 82% from sources other than banks. When we look at ownership, domestic private

firms use 20% Bank financing and 80% Self Fund Raising compared to state firms that

use 26% Bank financing and 74% Self Fund Raising. In both cases, Other makes up a

bulk of the Self Fund Raising. Older firms (firms > 20 years) use more of Bank financing

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[18] Four of the 18 cities were designated as export processing zones- Shenzhen, Dalian, Hangzhou, and Wuhan. Their use of Other Financing ranges from 24% in Hangzhou to over 70% in Shenzhen suggesting that Other might also be funds from overseas investments (Hong Kong, Taiwan (China), Macao).

(27%) compared to firms less than 5 years old which depend on Self Fund Raising for 80% of their financing needs.

3.3 Access to Formal Bank Finance

Panel A of Table 3 presents the summary statistics for various measures that measure firms' access to the formal and informal financial systems in China. As the main independent variable of interest, we have an indicator variable, **Bank Dummy** showing whether the firm has access to the formal financial system. Bank Dummy takes the value 1 if the firm states that is has a loan from a bank or financial institution and 0 if the firm states that it has no bank loan and no overdraft facility or line of credit. We also construct an **Access Dummy**, a dummy variable that takes the value 1 if the firm had access to a bank loan in any year prior, from 1990-2001, and 0 otherwise.

We also consider alternative indicators of access based on the financing proportions of new investments that firms report. **Bank Financing Dummy** takes the value 1 if the firm states that it has a loan from a bank or financial institution and reports that bank finances at least 50% of new investments or that bank financing of working capital was greater than 50%. Bank Financing takes the value 0 if the firm states that it has no loan from a bank or financial institution or said it had no overdraft facility or line of credit and the bank financing of new investments was equal to 0% and bank financing of working capital was equal to 0%. Thus, a firm is assigned a value of 1 for Bank Financing only if we have evidence of substantial reliance on bank financing and a value of 0 if it does not rely on bank financing.

We also employ two measures of self financing. **Self Financing1** takes the value 1 if the sum of Informal financing and Other financing of either new investments or working capital is greater than 50%. Self Financing1 takes the value 0 if the sum of informal and other financing of new investments and working capital is equal to 0 %. **Self Financing2** broadens the definition of self financing and takes the value 1 if the sum of Internal, Family, Informal, and Other financing of new investments or working capital is greater than 50%. We combine retained earnings with external informal sources in Self Financing2 only to be consistent with Allen et al. (2005).

In most of our regressions we focus on the Bank Dummy variable since it is clearly defined and is not subject to any mis-classification error. The summary statistics for the three bank variables, Bank Dummy, Access Dummy and Bank Financing indicate that on average only 23-28% of the firms in the sample have access to bank financing. For instance, according to the Bank Dummy, only 537 out of the 2326 firms answering the bank loan question reported having a bank loan. Of the full sample of 2400 firms, 1466 firms report one of two reasons for not having an existing loan - 1237 firms report not applying for a bank loan and 229 firms report not having a bank loan because their application for a bank loan was rejected. When we look at firms that are not registered as publicly traded corporations or as state owned enterprises, of the 1666 private firms, 1301 firms reported not having an existing loan from a bank or a financial institution, 933 private firms reported not having a bank loan because they did not apply for the loan and 154 private firms reported not having a bank loan because their application for a bank loan was rejected.

The firms that report their loan application was rejected report three mutually exclusive reasons for why their application was rejected: *Lack of collateral, Perceived lack of feasibility of project* and *Incompleteness of application*. Figure 3 shows that of the 229 firms that report their loan application being rejected, 66% (152 firms) report lack of collateral as the main reason why their loan was rejected. This includes 104 private sector firms out of a sample of 154 private sector firms that report their loan application was rejected.

Thus we are able to identify firms that that may or may not need bank financing but do not apply for loans as well as firms that apply for loans but have their loan applications rejected. The summary statistics also show that collateral seems to be main constraint for access to bank loans.

3.4. Firm Performance and Control Variables

Our principal measure firm of performance is **Sales Growth** which is computed as the log change in firm sales over the period 2001-2002. We supplement sales growth with two additional indicators. We measure **Labor Productivity Growth** over the period 2001-2002 and the firm's reinvestment rate in 2002. Labor Productivity Growth is the log change in labor productivity over the period 1999 to 2002 where labor productivity is defined as (Sales-Total Material Costs)/Total Number of Workers. **Reinvestment Rate** is the manager's estimate of the percentage of net profits that are re-invested in the establishment and not distributed to owners, the state or the shareholders. Productivity Growth shows whether a source of financing is associated with declines in firm efficiency. The firm's reinvestment rate shows whether the firm's managers are

committing the firm's resources to finance growth, or whether external financing is used to substitute for internal resources. The latter case would be suggestive of inefficient investment.

We also consider firm performance over a longer horizon by looking at Sales and Productivity growth over the period 1999 to 2002. As robustness we also compute Growth in Total Factor Productivity (TFP) as the log change in TFP between 2001 and 2002. TFP is computed as the residual from a regression of Value Added on Labor interacted with industry sector dummies and Fixed Assets interacted with industry sector dummies. Value added is defined as Sales-Total Material Costs, Labor is the total number of employees and Fixed Assets serves as a proxy for capital. We do not use Growth in TFP as the main productivity growth measure in all our regressions since the sample size is reduced by more than half with this measure.

The mean Sales growth rate across the full sample of firms from 2001 to 2002 is 5.6% where as Labor Productivity growth is 0.45%. The corresponding figures for the period 1999 to 2002 are 13.3% and 8.1% respectively. The mean Growth in TFP over the period 2001-2002 is -1.92%.

In addition to the rich detail on the financing choices of firms, the survey has information on firm size, age, ownership, legal organization and capacity utilization, all of which are used as firm level controls in our study. An important strength of the survey is its wide coverage of micro and small size firms.[19] We construct **Size Dummies** which are the quintiles of firm's sales in 1999. The survey thus provides data across a much

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[19] The mean (median) number of employees in a firm in our sample in 1999 was 579 (100) employees with 33% of our sample composed of firms with less than 50 employees.

broader cross-section of firm sizes than is available in commercial data bases, such as Worldscope.

Panel A of Table 3 shows that the average firm age in the sample is 16 years. We include dummy variables to identify very young firms (1-5 years), middle-aged firms (5-20 years) and older firms (>20 years). The firms in the survey are broadly classified in terms of their current legal status into corporations, cooperatives and an other category. Corporations, both public and private, make up 40% of our sample where as 16% of our sample is composed of Cooperatives or Collectives. We also have detailed information on the ownership breakdown of these companies and the percentage owned by different entities in the private sector (eg: domestic firms, domestic institutional investors, foreign individuals, foreign firms, foreign institutional investors, etc) and different entities in the state sector (e.g.: national government, state/provincial government, local/municipal government or other government bodies like collectives, etc). We use a dummy variable **State Ownership** to characterize firms where the government owns more than 50% of the company. Nearly 22% of the sample (531 firms) is composed of firms with more than 50% state ownership and the remaining is made up of firms with more than 50% private ownership. We also identify the number of competitors of the firm in its main business line in the domestic market by using five **Competition** dummies for 1-3 competitors, 4-6 competitors, 7-15 competitors, 16-100 competitors and over 100 competitors respectively.

Panel B of Table 3 presents the correlation between the access variables and firm performance. We find that the bank finance variables are all significantly correlated with each other and in fact Bank Dummy and Bank Financing dummy, where the latter variable takes into account bank financing of new investments and working capital are

perfectly correlated. Bank Financing and Bank Dummy are also positively correlated

with the firm performance measures where as the Access Dummy which focuses on

access to past bank financing appears to be negatively correlated. Both the Self Financing

dummies are negatively correlated with all measures of bank finance and also appear to

be negatively correlated with Sales Growth and Reinvestment rate and have a positive

association with productivity growth.

The raw correlations between firm performance and the financing variables mask

some of the underlying variation. The average 2001-2002 growth rate of firms that

receive bank finance is 10.34% compared to an average growth rate of 4.2% for firms

that receive no bank finance. The differences are starker when we look at the growth and

financing figures by size quintiles. The lowest quintile of firms (with an average of only

18 employees) has average growth rates of 10% but only 6% of these firms have bank

loans. These firms however are typical of the fast growing micro sized firms in most

economies which depend mainly on internal and informal sources for their growth. When

we look at the second to fifth quintiles of firms with number of employees ranging from

44 to 2475 employees, we see a positive association between bank finance and growth.

The proportion of bank loans varies from 16% in the second quintile to 41% in the fifth

quintile with the corresponding sales growth figures ranging from 0.02% to 6.9%. [20]

To investigate if bank financing is indeed associated with better firm performance, we

next turn to regression analysis, controlling for a number of firm level variables.

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[20] The numbers are similar when we define size in terms of total sales. The lowest quintile of firms with
average sales around 384,000 RMB has the highest growth rates of 12% and the least amount of bank loans
(9%). The second to the fifth quintile of firms range in sales from 2,005,000 RMB to 414,353,000 RMB
with monotonic increases in the proportion of bank loans and sales growth with size. The proportion of
bank loans ranges from 13% to 45% and sales growth ranges from 1.3% to 4.8% as we move from the
second quintile to the fifth quintile of firms.

4. Financing Patterns and Firm Performance – Empirical Strategy

We first estimate the following regression model:

Sales Growth/Reinvestment Rate/Productivity Growth = α + β₁Bank Dummy+ β₂Firm

Size dummies + β₃ Age dummies + β₄Corporations + β₅Collectives + β₆State Ownership

+ β₇Competition Dummies + β₈City Dummies + ε   (1)

The bank loans for our sample were approved prior to 2002. Accordingly, we report regressions for which the dependent variable is sales or productivity growth rate between 2001 and 2002 or the reinvestment rate measured in 2002. However, because annual growth rates are likely to be subject to random shocks, we also report regressions using sales growth and productivity growth of firms for the period 1999-2002. These regressions are descriptive, showing the association between growth and firm access to the formal sector over a longer horizon.

Our main independent variable of interest is the Bank Dummy. We include a number of firm level control variables - Firm Size dummies, Age dummies, State Ownership dummy, Corporation dummy, Cooperatives dummy and Competition dummies - that are described in detail in Section 3.4. We include city dummies to control for unobserved heterogeneity at the city level. The data on industries are available for a very narrow definition of business activity giving us 81 industry dummies. Hence, while our results are robust to controlling for industry dummies, we do not include industry dummies in our baseline specification so as to not lose too many degrees of freedom. We also report alternative specifications using the other financing variables described in Section 3.3 - Access Dummy, Bank Financing Dummy, and the two informal financing variables, Self Financing1 and Self Financing2.

4.1. Endogeneity of the Bank Financing Decision

While equation (1) establishes a broad association between formal vs. informal financial systems and firm performance, one of the concerns might be that a positive relation observed between external finance and firm growth (or a negative one between self fund raising and firm growth) may be simply due to reverse causality. To the extent that we are only interested in establishing an association between the use of bank finance and high growth rates, the direction of causality is immaterial. Even if it were the case that the fastest growing firms go to banks for financing, then by revealed preference, bank finance is the preferred alternative to informal finance.

A second econometric concern might be that the bank financing decision is endogenous and firms self select into applying for bank loans and hence we need to control for selection effects. We are interested in the effect of bank financing on the performance of bank financed firms i.e. the difference between the performance of the bank financed firms and its performance if it was not bank financed. This difference is refereed to as the Average Treatment Effect on the Treated (ATT). If Y_{i1} is the performance of the firm if it is bank financed and Y_{i0} is the performance if it is not bank financed, the ATT is given by:

$$\tau|_{\text{Bank=1}} = \mathbf{E}(Y_{i1}| \text{Bank}_i=1) - \mathbf{E}(Y_{i0}| \text{Bank}_i=1) \tag{2}$$

Since we cannot observe the performance of bank financed firms if they were not bank financed (i.e. $\mathbf{E}(Y_{i0}| \text{Bank}_i=1)$), we estimate the following equation:

$$\tau = \mathbf{E}(Y_{i1}| \text{Bank}_i=1) - \mathbf{E}(Y_{i0}| \text{Bank}_i=0) \tag{3}$$

Equation (3) is however a biased predictor of Equation (2) since firms may choose to be bank financed. The Heckman (1979) two stage model explicitly addresses

bias caused by correlation of the regressor with omitted variables, by adding a term to the regression called the inverse Mills ratio that represents the non-zero expectation of the error term. A common interpretation of this term is to consider it as private information driving the selection decision. To estimate the selection model using instrumental variables, we need an instrument that is correlated with bank finance at the firm level, yet uncorrelated with firms' growth opportunities. [21] One of the factors that could affect access to bank loan is the ability to post collateral, although the importance of collateral for accessing bank loans could vary according to the market environment in which the firm operates. Figure 3 shows that firms report the main reason why banks reject their loan applications is their inability to meet collateral requirements. Hence as an instrument for bank finance, we construct a dummy variable **Collateral**, which takes the value 1 if the firm reported that the financing required collateral and takes the value 0 if the firm reported that the financing did not need collateral or that it did not apply for a loan because of stringent collateral requirements or that it was rejected for a loan because of the lack of collateral. Thus Collateral serves as a proxy for the firm's ability to post collateral. [22] Ability to post collateral has been used as an instrument for bank finance in prior work as well including Johnson, McMillan, and Woodruff (1999).

Whether there was a collateral requirement or not is less likely to be correlated with firm's growth and hence need not enter the second stage.[23] Thus, collateral serves as

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[21] See Li and Prabhala (2007) for a discussion of selection models in corporate finance. As Li and Prabhala (2007) and Heckman and Navarro-Lozano (2004) note, strictly speaking we do not need any exclusion restrictions because the model is identified by non-linearity, thus allowing estimation.

[22] We find that size and possession of fixed assets are determinants of a firm's ability to post collateral. In addition, there is sufficient institutional variation across provinces that affects firms' ability to post collateral. We find that firms in cities with poor institutional environment but with higher fixed assets post more collateral. This suggests that in poor institutional environments, firms have to rely on collateral to access bank finance rather than relying on credit histories and growth opportunities.

[23] When we include the collateral requirement dummy in the second stage it is not statistically significant.

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the identifying variable in our selection equation. There is a possibility that the selection of firms receiving bank loans may be caused by firm characteristics unobserved by us, but observable by banks.

Specifically, we assume that a firm obtains access to formal bank finance (i.e. Bank Dummy = 1) if it meets the formal criteria of the banking system, so that the linear function of information observed by us and proprietary information observed by the bank exceeds a threshold. Therefore, Bank Dummy = 1 if

$$\alpha_0 + \beta_1 \text{ Collateral} + \beta_2 \text{Size dummies} + \beta_3 \text{ Age dummies} + \beta_4 \text{Corporations} + \beta_5 \text{Collectives}$$
$$+ \beta_6 \text{State Ownership} + \beta_7 \text{Competition Dummies} + \beta_8 \text{City Dummies} + \zeta > 0, \tag{4}$$

where $\zeta \sim (0, \sigma^2)$ is proprietary information observed by the bank. Equation (4) is also referred to as the Selection or Treatment Equation and forms the first stage of a two-stage selection model in which equation (5) below forms the second stage :

$$\text{Sales Growth/Reinvestment Rate/Productivity Growth} = \alpha_1 + \gamma_1 \text{BankDummy} + \gamma_2 \text{Size}$$
$$\text{dummies} + \gamma_3 \text{Age dummies} + \gamma_4 \text{Corporations} + \gamma_5 \text{Collectives} + \gamma_6 \text{State Ownership} +$$
$$\gamma_7 \text{Competition Dummies} + \gamma_8 \text{City Dummies} + \lambda + \varepsilon \tag{5}$$

We first obtain estimates of the selection equation and from these estimates, the nonselection hazard λ (inverse of the Mill's ratio), is computed for each observation. λ is an estimate of the banks' private information underlying the selection of firms. The regression equation (5) is then augmented with the nonselection hazard λ which provides an estimate of the selection bias.

5. Results

5.1. Bank Finance and Firm Performance

Table 4 reports the estimated coefficients from baseline regression (1). Columns (1) and (7) show that the formal financial system is associated with higher sales growth for both the full sample of all firms and a sub-sample of private firms (dropping public and state owned firms). The role of bank financing in the second sub-sample is of particular interest, since private firms are likely to have fewer alternative options than publicly traded firms or state owned firms. Firms that have bank financing also reinvest a higher proportion of their profits in their businesses in both samples (columns (2) and (8)). Thus, there is no evidence that bank financing funds growth that firms are unwilling to undertake using their own capital.

Columns (3) and (8) show that bank finance is not significantly negatively associated with labor productivity growth. When we look at growth in TFP for a smaller sample of firms, again we find that bank finance is positively associated with growth in TFP though not significantly so. These findings suggest that the formal financial system rather than informal sources have a positive association with firm growth and reinvestment and that the growth that results is not inefficient. Columns (4) and (5) for the full sample, and (9) and (10) for the sub sample reinforce this finding by showing that the association holds over a longer horizon.

When we look at the control variables, larger firms, older firms and firms organized as cooperatives or collectives are found to have lower growth rates. Growth rates are lower in highly competitive (>100 competitors) industries. The city dummies show that compared to firms in Benxi, firms in Changchun, Chongqing, Hangzhou,

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Nanchang, Shenzen, and Wenzhou are the fastest growing over the period 1999 to 2002.

Note that each of these cities received an investment climate score of A or A+ (except for

Nanchang which received a score of B+) in the Dollar et al. (2004) study compared to

Benxi which received an investment climate score of B- in the study. When we look at

growth rates over a smaller time horizon from 2001 to 2002, only firms in Shenzen seem

to be growing faster than firms in Benxi. Our results in Table 4 are robust to controlling

for 14 industry sector dummies.

To check whether our results are driven by outliers, we perform several

robustness checks. We have re-estimated all our specifications by removing potential

outliers (growth rates in excess of $\pm$ 1000%), by winsorizing the top 1% of the sales

growth, reinvestment rate and productivity growth variables, and by using median

regressions. Our results (not reported) remain unchanged in all cases. The coefficients of

Bank Dummy are qualitatively similar to those in Table 4, indicating that our earlier

results are not driven by outliers.

5.2. Bank Finance and Firm Performance - Treatment Effects

In Table 5, we investigate the relation between bank financing and sales growth,

reinvestment, and productivity growth, controlling for the selection of firms that obtain

bank financing. The estimates of the selection equation (even numbered columns)

indicate that firms that obtain formal financing are more likely to have collateral that they

can pledge, are large companies organized as corporations, with some but relatively few

(<6), competitors. Interestingly, although firms in highly competitive industries grow

more slowly, there is little evidence that banks lend to them at a lower rate. The hazard

lambda (also referred to as the Inverse Mills Ratio) which measures the impact of self selection is reported at the foot of Table 5.

In Table 5, controlling for selection, the coefficients of bank financing, are greater than in Table 4, for both the full sample and the private firms sub-sample. This is in part because banks lend disproportionately to large firms, which grow more slowly than small firms. Once this selection effect is controlled for, there is a stronger relation between bank financing and firm growth. Similarly, the coefficients of bank financing in the productivity regressions are larger, albeit statistically insignificant. Thus, as in Table 4, there is no evidence that bank financing is associated with inefficient growth.[24]

In panel A of Table 6, we consider a wider range of determinants of access to the formal financial sector. We examine alternative explanations for why the proportion of bank finance is associated with higher sales growth, profit reinvestment and productivity. It could be that the firms that get bank finance are the ones that are politically connected or have been singled out for financing (directed credit) or that firms that get bank finance are those that are better at bribing bank officers. Hence we introduce the following variables into the selection equation. We introduce a "Government Help" dummy which takes the value 1 if firms answer "yes" to the question "*During the year 2002, did any government agency or official assist you in obtaining bank financing?*" and a value of zero otherwise. As a proxy for bank corruption, we use firm responses to the following question "*In your dealings with bank officials and loan officers, was a gift or informal*

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[24] The negative coefficients of the hazard rate lambdas in our second stage regressions suggests that firms which receive bank loans are predicted to perform more slowly than benchmark firms, perhaps as a result of unobservable private information. However, the coefficients are smaller than the positive coefficient of the bank loan dummy, and for the most part not significant. Thus, the evidence suggests that bank financing is associated with enhanced growth.

payment expected?" We also measure the firm's general perception of its property rights enforcement. Property Rights Protection is the firm's estimate of the likelihood that the legal system will uphold the firm's contract and property rights in business disputes.[25]

We also investigate additional firm-level variables that might affect a firm's ability to obtain a loan from the formal financial sector. The dummy variable, Loan from Group or Holding Company, takes the value 1 if the firm is a member of a group or a holding company that provided loan to the firm and 0 otherwise. Loan Guarantee Program is a dummy variable that takes the value 1 if the firm benefited from a loan guarantee program offered by loan guarantee companies. Located in Export Processing Zone is also a dummy variable that takes the value 1 if the firm is located in an industrial park, science park, or export processing zone and 0 otherwise. CEO Education Level takes values 1 to 4 - 1 if the CEO had no formal education, 2 if the CEO had high-school, secondary school or primary school education, 3 if the CEO had an undergraduate education at home or abroad and 4 if the CEO had postgraduate education at home or abroad. Politically Connected CEO takes the value 1 if the CEO was a party secretary, deputy party secretary, party committee member or executive member or a party member and 0 if the CEO is not a party member. Columns 1 to 4 present results for the sales growth regression, columns 5 and 6 for profit reinvestment rate and columns 7 and 8 present results for the productivity growth. In columns 3 and 4, we also include past sales growth rate from 1999 to 2001 to investigate if past performance is a predictor of bank financing.

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[25] To the extent that property rights enforcement varies across localities, its variation will be captured by City Dummies. This variable captures firm-level deviations from the city-level mean as well as city-level deviations in firm perceptions from the city means.

We find evidence that firms which report government help in obtaining loans, report receiving loans from other firms in their group, or which are located in export processing zones are more likely to receive loans. While affecting the probability of a loan, none of these variables significantly predict increases in the firm's growth rate, reinvestment rate, or productivity growth. Thus, there is no evidence that government help in obtaining loans is directed to firms which subsequently report better outcomes. However, we also find little evidence that firms which receive government help in obtaining loans perform less well than other firms.

Controlling for these factors, we do not find evidence that the degree of perceived bank corruption, participation in loan guarantee programs, the educational level of general manager or reported political connections, significantly affects the probability of obtaining a loan. Likewise, an index of property rights does not add explanatory power. However the effect of the property rights could be subsumed by the size dummies since larger firms in our sample report higher likelihood that the legal system will uphold their contract and property rights in business disputes.

We do find that firms which grew fast in 1999-2001 were more likely to have loans in 2001-2002 (Column 4). However, fast growth in 1999-2001 predicts slower growth in 2001-2002. Thus, while the banking system is more likely to lend to firms that grow fast, it is only those firms that the banks lend to who continue to grow fast.

In Panel B, Table 6 we repeat our analysis of Table 5, with a broader definition of bank financing. Access Dummy is a dummy variable that takes the value 1 if the firm had access to a bank loan in any year prior, from 1990-2001, and 0 otherwise. The results on sales growth, reinvestment and productivity growth are qualitatively similar. One

difference is that we find less evidence that bank access is skewed in favor of larger firms. This may be because small firms which do not have loans in 2001 may have obtained a loan in the preceding decade. Thus, these firms may have access to the formal sector but have a lower frequency of loans. All our results in Table 6 hold when we look at a smaller sample without publicly traded corporations and state owned enterprises. We do not report these results in the interest of space.

5.3. Bank Finance and Firm Performance - Robustness

5.3.1. Treatment Effects via Matching

In this section we use a second class of treatment effects estimators, matching models, that estimate the treatment effects as the difference in average outcomes of the treated (Bank Dummy =1) and control groups (Bank Dummy = 0), where the control group is formed by matching firms based on one or more characteristics. The idea is that selection bias is reduced when the comparison of outcomes is performed using treated and control objects who are as similar as possible. While matching methods do not address unobservables, they seek to do a better job of controlling for observable characteristics. In addition, the lack of strong distributional assumptions makes matching methods appropriate when the treatment and control groups are unbalanced in sample size. [26]

We use Propensity Score Matching (Rosenbaum and Rubin, 1983) where the Propensity Score is the probability of a firm obtaining bank financing given a vector of firm characteristics and is computed via a logit regression model. We estimate the

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[26] A potential disadvantage of the Heckman model is that it assumes a normal joint distribution for the error terms which is not assumed in matching estimators.

Propensity Score by matching on the following set of covariates: Size Dummies, Age Dummies, City Dummies, Corporations Dummy, Cooperatives Dummy and State Ownership Dummy. A test of the balancing property shows that the balancing property of the estimated propensity score is satisfied. i.e. firms with the same propensity score have the same distribution of observable (and unobservable) characteristics independently of whether or not they were bank financed. [27] In estimating the propensity score, we impose the Common Support condition, which ensures that matching is only conducted over the overlapping region of the distributions of propensity score in the treated and untreated groups, thus ensuring that conditional on observed characteristics, the probability of being bank financed / not is non-zero. i.e. firms with the same set of characteristics have a positive probability of being both bank financed as well as not bank financed. Imposing the common support condition leaves us with 507 bank financed firms and 1615 non-bank financed firms. Figure 4 shows the distribution of propensity scores across the two samples. The histograms show that most of the comparison group members have very low estimated probabilities of obtaining bank financing. Further, there are at least a few comparison observations near each treated observation.

In Panel A of Table 7 we report the average treatment effects (ATT) on the treated upon implementing propensity score matching. Columns 1-3 report the results from using the radius matching estimator where as columns 4-6 report results from using

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[27] Rosenbaum and Rubin (1983) show that to ensure a bias reduction the propensity score should satisfy two important properties: *Balancing Property* which ensures that given the propensity score, the treatment and observables are independent and the *Unconfoundedness Property* which ensures that given the propensity score the treatment and the potential outcomes are independent. We use the Stata routine psmatch2 to estimate the propensity score and test the balancing property. Note that the unconfoundedness property cannot be tested.

the kernel matching estimator. [28]Testing the statistical significance of treatment effects

and computing their standard errors is tricky since the estimated variance of the treatment

effect should also include variance due to the estimation of the propensity score and the

imputation of the common support. Hence we report bootstrapped standard errors after 50

replications to reduce the bias in the estimates of the standard errors. Panel C shows that

conditional on observable characteristics, bank financed firms grow faster (around 6%)

and reinvest more (around 9%) compared to non-bank financed firms. While the ATT for

productivity growth are positive, they are not significant. These results are robust to the

type of matching estimator used.

5.3.2. Government Help

One of the remaining econometric concerns is that the association we observe

between bank financing and firm performance is due to directed credit –that is the

Chinese government directs banks to lend to certain firms with good credit ratings, thus

affecting both the selection decision and the outcome variable. It may be noted that when

we control for firms that report government help in obtaining bank finance in both stages

in the treatment effects model in Table 6, we found that while the government help

dummy predicts which firms get bank finance, government help in obtaining bank

finance has no impact on firm performance.

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[28] Once the propensity score is estimated there are several choices for matching estimators that can be used to estimate treatment effects. The estimators differ in the way the neighborhood for each bank financed firm is defined and the common support problem is handled and the weights assigned to these neighbors. We use *Radius* matching where all the control units with estimated propensity score falling within a radius r from the propensity score of the bank financed firm are matched to the bank financed firm. This matching procedure reduces the risk of bad matches which might occur if the closest neighbor is far away. As robustness, we also use *Kernel* matching which uses weighted averages of all firms in the control group to construct the counterfactual outcome of a bank financed firm. Note that with radius matching only a few observations from the comparison group are used to construct the counterfactual.

We further deal with the issue of government help in two ways: First, we drop

firms which report that they had government help in obtaining bank financing (15% of

the overall sample) in column 1 of panel B of Table 7 and find our results to be stronger.

When we drop firms that report government help in obtaining bank finance, we find that

bank financed firms grow 10% faster than firms which do not have access to bank loans

and this effect is larger than in the full sample results in Table 4 where we found that

bank financed firms grew an average 7.5% faster than non-bank financed firms. Hence

we have evidence that the positive association between bank finance and growth is not

being driven by the firms that the government instructs the banks to lend to. We find

similar effects when we look at the effect of bank finance on profit reinvestment rates and

productivity growth but do not report these results in the interest of space.

Second we use the government help variable explicitly in our identification

strategy. Columns 2-4 of panel B of Table 7 presents the results of our instrumental

variable estimation where we first instrument for bank finance using collateral, next using

the government help dummy and finally using both collateral and government help. All

the estimates reported are LIML estimates which are more reliable than 2SLS estimates

in the presence of weak instruments. When we instrument for bank finance using

collateral, the results are as expected and we find that bank finance is positively and

significantly associated with firm growth. Note that the IV is similar to the treatment

effects model in Table 5 except that the latter is a control function approach where we

incorporate the Inverse Mills Ratio. When we use the government help dummy as an

instrument for bank finance, we find that bank finance is no longer a significant predictor

of firm growth. However when we use both collateral and government help as

instruments, we find that bank finance has a positive and significant effect on firm growth.

In all three cases, the instruments we use pass various tests of weak instruments. Both the Collateral and Government help dummy are strongly positively correlated with Bank Dummy in the first stage (not reported) and the first stage F-stats are larger than 10 (Staiger and Stock (1997) suggest the rule of thumb that for the case of a single instrument, instruments may be deemed weak if first stage F-stat is less than ten). The Durbin-Wu-Hausman endogeneity test in columns 2 and 4 show that the OLS estimates are not consistent and we need IV estimates. The Over-identification test in column 6 is not rejected suggesting that the instruments used are valid instruments. In each column, we also report the conditional likelihood ratio confidence region and p-value proposed by Moreira (2003), both of which are robust to potentially weak instruments. The p-values reported test the null hypothesis that the bank dummy coefficient is zero using the conditional likelihood ratio test.

These results show conclusively that the positive association between bank finance and sales growth in our study is not being driven by Chinese government policy which might instruct banks to provide financing to certain firms. In fact we have evidence to the contrary suggesting that the firms which receive government help in obtaining bank financing do not grow as fast as firms which report no government help.

5.3.3. Firms That Do Not Apply for Bank Loans

Firms in our survey report if they did not apply for a bank loan due to several reasons including do not need loans, application procedures too cumbersome, stringent collateral requirements, high interest rates, bank corruption, or did not expect to be

approved. In this section we investigate if the firms which do not apply for bank loans due to any of the reasons listed above, perform better than firms with a bank loan. In Panel C of Table 7, we replicate Table 4 using a dummy variable, Did not Apply for a Bank loan, which takes the value 1 if the firm reported not applying for a bank loan and 0 if the firm has a bank loan. If the dummy variable were to be positive and significant, then it would mean either that these firms do not have capital needs or that they are growing fast by sourcing their financing from non-bank sources.

Our results in panel C of Table 7 show that the firms which do not apply for a bank loan grow significantly slower and reinvest significantly less than firms with a bank loan. The Did not Apply for a Bank loan dummy is insignificant in the Labor Productivity Regressions. In unreported results we find that none of the reasons stated for not applying for a bank loan are ever positive and significant in any of the regression specifications. The firms in our sample also report if their application for a bank loan was rejected. Here again we find no evidence that firms rejected for a bank loan performed better than firms which had access to a bank loan.

5.4. Financing of New Investments and Working Capital – Bank Finance vs. Informal Finance

In Table 8, panel A, we examine the association between indicators of performance and bank financing for those firms that explicitly report using bank financing to fund at least some (>0%) of their new investments or working capital. The coefficient estimates for the Bank Financing Dummy are shown in panel A. Since we have data on uses of bank financing only for 2002, we do not estimate a selection model.

We interpret our estimates as a consistency check on our earlier results rather than as evidence of a causal relationship.

Panel A shows that our earlier results hold for firms that report heavy use of bank financing to fund investment and working capital. Such firms tend to grow faster and reinvest more of their profits than comparable firms. This faster growth is not associated with slower improvements in productivity.

In panel B, we show the association between performance indicators and self-financing of investment and working capital. To recall, Self Financing1 takes the value 1 if the firm reports that it has financed at least half of its new investments or working capital from informal and "other" sources. Self Financing 1 takes the value 0 if the firm reports not using informal or "other" financing to fund investment or working capital. To be consistent with Allen et al. (2005), we combine internal sources with external informal sources in defining Self Financing2. Self Financing2 takes the value 1 if the firm reports using internal, informal, family, and other financing to fund at least a half of its new investments or working capital. Self Financing2 takes the value 0 if the firm reports not using these sources to fund investment or working capital. Thus, Self Financing1, by excluding internal financing, places more weight on "external" informal financing, whereas Self Financing2 also includes funds explicitly designated as retained earnings or contributed by family members.

Panel B of Table 8 shows that there is no association between firm growth and either measure of self-financing. The coefficients of both measures of self financing are negative although not significant in the sales growth regression. Interestingly, firms that are self-funded primarily through informal or other sources reinvest a lower proportion of

their earnings in their business. However, the negative association between self financing and profit reinvestment rates switches to positive when we incorporate internal and family funds as part of self financing sources. We find that it is the inclusion of internal financing (rather than family funds) that drives the positive association between of self financing and profit reinvestment rates.

In unreported results, when we look at the sample of firms which did not apply for a bank loan or who were rejected for a loan by the bank, we find no evidence that firms relying mostly on informal or other financing grow faster or reinvest more than firms using other sources of financing. The coefficients of Self Financing 1 and Self Financing2 are negative (but not significant) in the sales growth regressions and negative and significant at the 1% level in the profit reinvestment rate regressions. If we include the individual components of self financing proportion in the regressions, we find that firms that use more of informal and other financing reinvest significantly less than the firms that rely on their internal funds. There is also evidence suggesting that firms relying on informal and other financing grow slower, though not significantly, than firms relying on their retained earnings. [29]

Overall these results suggest that any positive association between non-bank financing and profit reinvestment rates stems from the use of retained earnings rather than informal sources and other alternative financing channels.

When we use the broader definition of informal financing, Self Financing2, we also find that self-funded firms report higher growth in productivity. In unreported results we interact the self financing variable with size quintile dummies and find that it is the

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[29] The association between slow growth and dependence on informal and other sources is significant and strong when we look at growth over the longer time period of 1999-2002.

smallest quintile of firms (who we know have limited access to bank finance) who report

productivity increases when their primary financing sources include internal, informal,

family or other financing.

6. Discussion

In this section, we discuss our findings in the context of recent evidence on the

link between finance and growth in China. Allen et al. (2005) find that while the Private

Sector dominates the State and Listed sectors in both the size of the output and the

growth trend, there is a huge reliance on non-bank financing sources amongst firms in the

Private sector. Given the weak external markets and poor legal protection of minority and

outside investors in China, Allen et al. (2005) attribute the growth of the Private sector to

the reliance on alternative financing channels and corporate governance mechanisms such

as reputation and relationships. They interpret this as evidence against the finance and

growth literature that the development of stock markets and a banking system is

important for growth of firms and economies. However, due to data limitations, the

results in Allen et al. (2006) are based on an analysis of the 17 largest, and perhaps

unrepresentative, firms in the two most developed regions in the country. Further, their

definition of informal financing channels includes retained earnings, informal financing,

issuance of equity and all other sources of fund raising except bank financing, state

funding and foreign investment.

While our data on 2400 firms (including 1720 non-publicly traded and non-state

companies) confirm the wide use of financing channels other than Bank Finance, our

regression results suggest that it is the formal financing channel, specifically Bank

Finance that is positively associated with higher growth and reinvestment. These increases are not associated with decreases in firm productivity. We find no evidence that alternative financing channels such as informal sources have a positive impact on growth and reinvestment or that they substitute for the formal sector. The arguments in Allen et al. (2005) can best be interpreted as a second best: how finance can cope with restrictions on entry and with pervasive state ownership of banks.

To investigate the relation between growth and bank financing further we estimate a selection model which takes into account that banks may use proprietary information not observed by researchers to allocate credit to firms that subsequently grow faster. Controlling for this type of selection bias strengthens the relation between bank financing and subsequent growth.

Our results are consistent with other studies emphasizing the role of institutions and formal finance in China. Cull and Xu (2005) find that profit reinvestment rates are affected by enterprise managers' perceptions about the security of property rights, the risk of expropriation by government officials, the efficiency and reliability of courts, and access to credit. In a more recent paper, Cull, Xu, and Zhu (2007) find that despite a biased and inefficient banking system, trade credit does not play an economically significant role in China. There are also more recent studies emphasizing the link between institutions and growth at the provincial level. Cheng and Degryse (2006) explore the impact of the development of bank versus non-bank financial institutions on the growth rate of Chinese provinces over the period 1995-2003 and conclude that only bank loans have a significant impact on local economic growth. Fan, Morck, Xu, and Yeung (2007) find that inward FDI within China flows disproportionately into provinces

with less corrupt governments and governments that better protect private property

rights. [30]

So how do we reconcile our results with the inefficiencies in the formal financial

system described in Section 2? The formal financial system does serve a small sector of

the economy and both the aggregate statistics and firm responses suggest that there are

imperfections in the allocation of capital. However, our results show that despite these

weaknesses, at the margin, private sector firms that have loans from the formal sector do

better than other firms and having a better developed financial system will only bring

more benefits.

We have no evidence that the firms depending on external financing of their

investment through informal channels are the fastest growing firms. Rather, the evidence

suggests that, if anything, retained earnings are associated with better performance than

external informal financing, and that firms that have bank loans grow faster than firms

relying on informal or other sources. However, even though in the aggregate informal

financing sources are not associated with high growth, the low reliance of very small

firms on bank financing suggests that self financing is important for small entrepreneurial

firms that depend on it for their growth and survival. For some of these firms, informal

financing may play a role akin to the critical role played by angel finance, in the

financing and creation of rapid-growth start-ups in developed economies. Thus, while the

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[30] Fan et al. (2007) estimate a cross-country (without China) FDI model explaining inward FDI using different measures of institutions and make out-of-sample predictions from their model for China. They find that China is no exception since Chinese FDI inflows are in line with what the model predicts for a country at China's level of institutional development as measured by general government quality and rule of law. However, when they measure institutions by "strength of executive constraints", they find that China receives more FDI than predicted by their model. But they argue that this could be because of other reasons including underestimation of the strength of checks on executive power in China or foreign firms enjoying better protections than identical Chinese firms.

informal sector may have its own niche in financing very small firms, we find no evidence that it scales up and is an efficient substitute for bank financing for most firms.

7. Conclusion

With one of the largest and fastest growing economies in the world, China provides many puzzles. More recently, it has been singled out as a counterexample to the findings of the finance and growth literature: while Chinese financial systems and institutions are underdeveloped, its economy, particularly its private sector, has been growing very fast. One explanation for this observation has been that China has alternative mechanisms and institutions that play an important role in supporting its growth and these alternative mechanisms are good substitutes for standard corporate governance mechanisms and financing channels (Allen, et al. 2005).

In this paper we take a closer look at the financing of 2,400 Chinese firms and their performance, using a detailed firm level survey. We find that in China, private firms' use of formal financing channels is comparable to its use in other developing countries, and it is financing from these sources that is positively associated with firm performance. Contrary to earlier findings, fund raising from informal channels is not associated with faster firm growth. To the extent that there are measurable benefits of informal financing, they arise only when retained earnings is classified as informal financing, as in some earlier studies. These findings have broader implications for the role of informal versus formal financial systems. Our results contradict the belief that nonstandard financing mechanisms provide effective substitutes to formal financing channels in promoting growth. They suggest that the role of informal relationship based

financing and governance mechanisms in supporting the growth of private sector firms is

likely to be overestimated.

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Figure 1: Chinese Cities Surveyed by the Investment Climate Surveys

NORTHEAST

Haerbin

Changchun

Beijing

Benxi

Dalian

NORTHWEST

Lanzhou

Zhengzhou

Xian

CENTRAL

Chongqing

Wuhan

Changsha

Nanchang

Hangzhou

Wenzhou

Guiyang

SOUTHWEST

COASTAL

Kunming

Nanning

Shenzhen

Jiangmen

Figure 2: Aggregate Financing Patterns across Chinese Cities
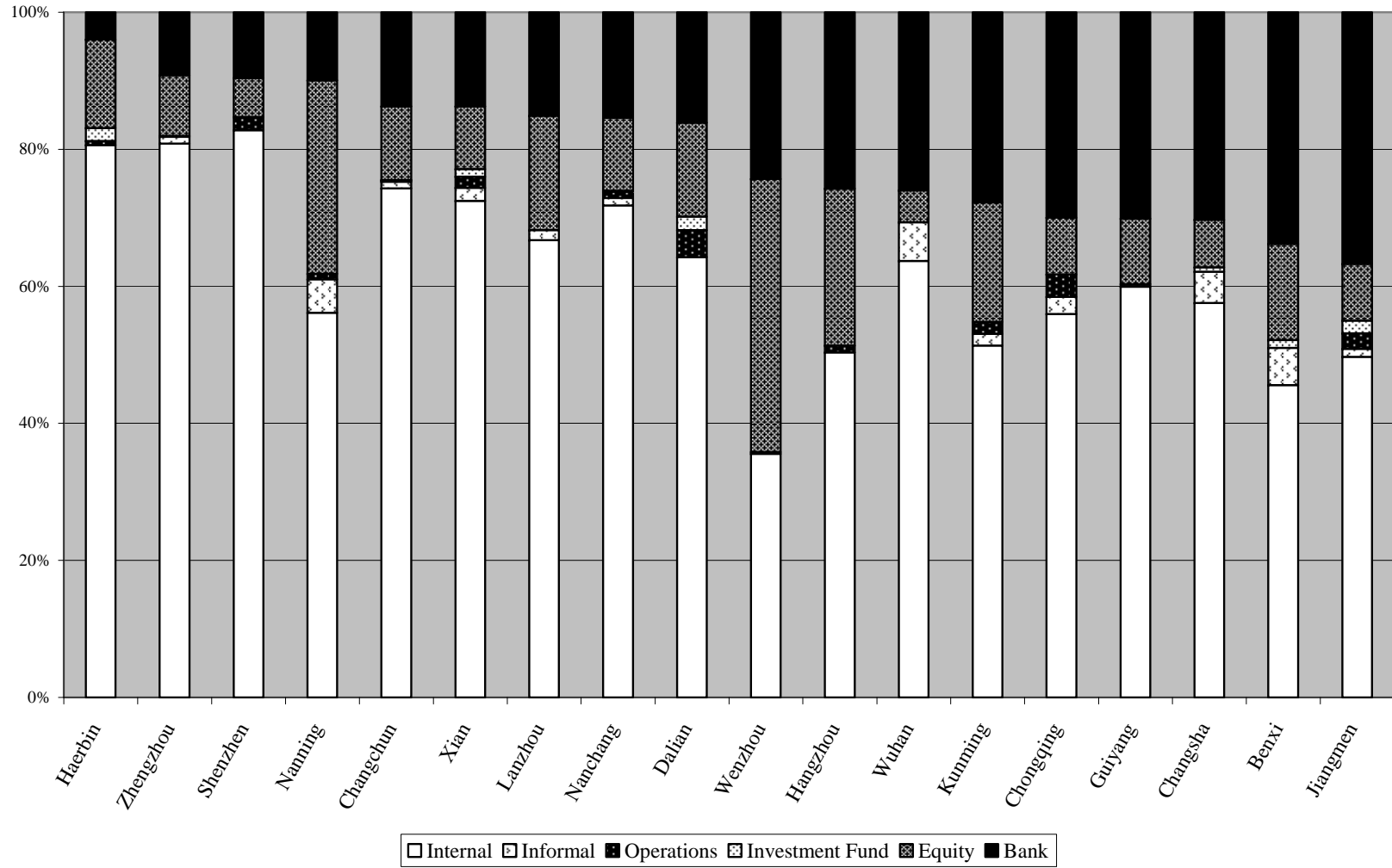
Figure 3: Reasons why loan application was rejected

Of the full sample of 2326 firms, 1789 firms reported not having an existing loan from a bank or a financial institution. 229 firms reported not having a bank loan because their application for a bank loan was rejected. Of the 1666 private firms, 1301 firms reported not having an existing loan from a bank or a financial institution. 154 private firms reported not having a bank loan because their application for a bank loan was rejected. The firms report three reasons for having their application for a bank loan rejected: Lack of collateral, Perceived lack of feasibility of project and Incompleteness of application. The reasons reported are not mutually exclusive
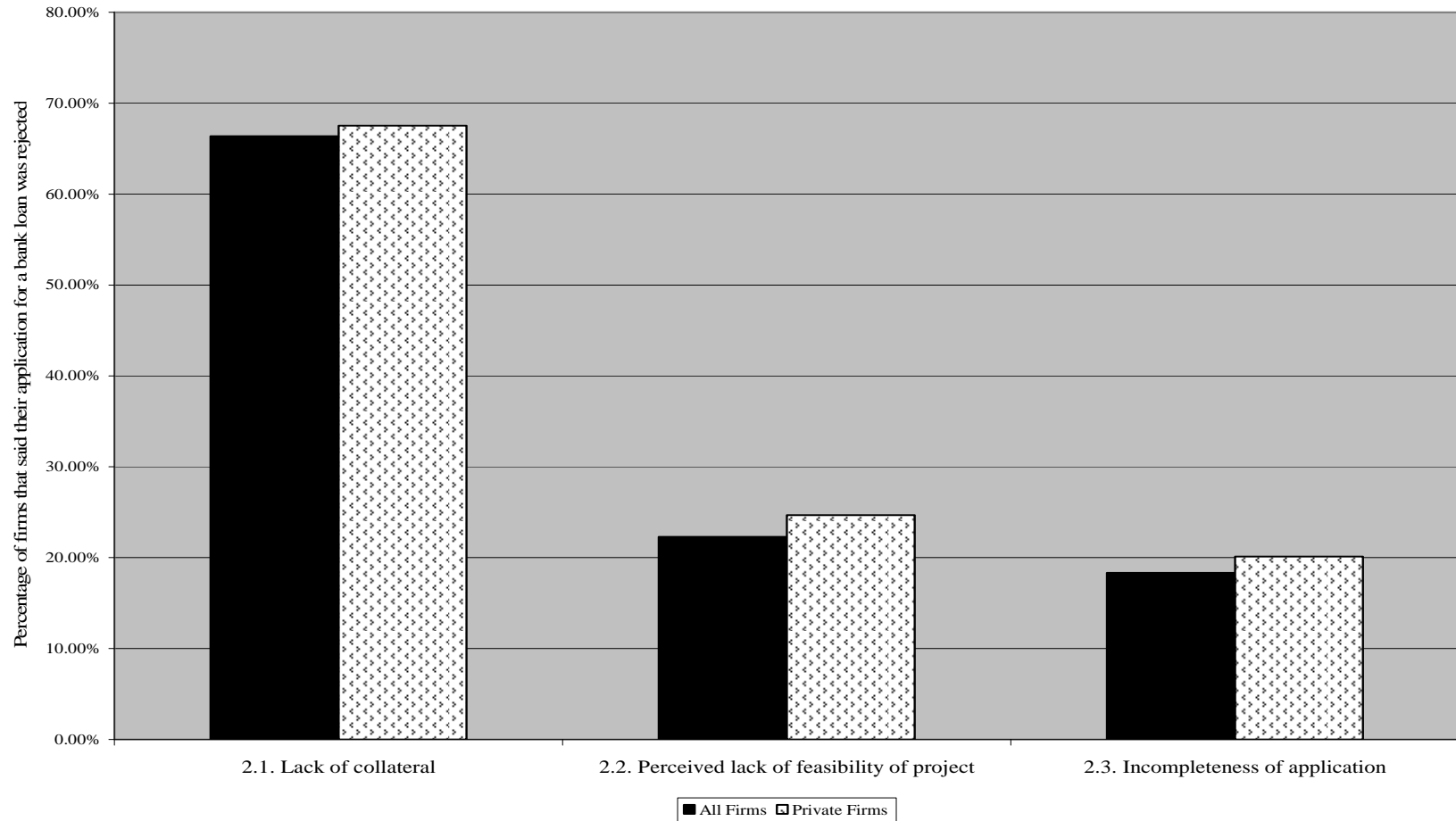
Figure 4: Distribution of Propensity Scores
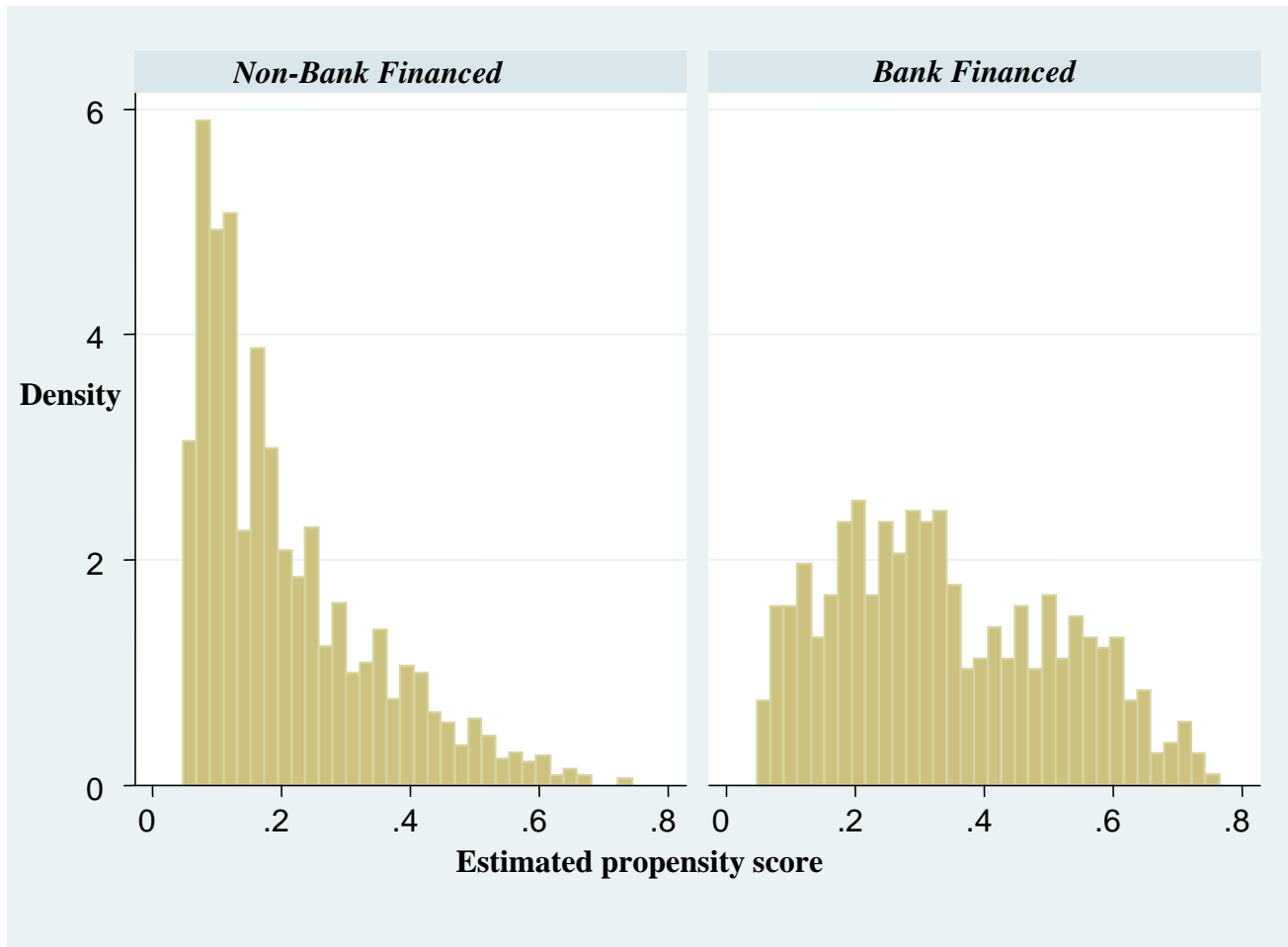
Table 1: Financing Patterns in Developing Countries

This table presents financing patterns across seven developing countries, geographic regions and country income groups across the world. In Panel A, Retained Earnings, Local Commercial Banks, Foreign Owned Commercial Banks, Equity, Operations Finance, Investment Funds, Loans from Family and Friends, Informal (eg: moneylender) and Other are financing proportions that stand for the proportion of new investments financed by each of these sources. Operations Finance consists of financing from leasing, trade credit and credit cards. Investment Funds includes funds from investment funds, development bank and other state services. In Panel B, we present two sets of aggregate financing patterns. The first set consists of Internal financing (Retained Earnings, Loans from Family and Friends and Other sources); Bank Financing (Local commercial banks and Foreign Owned commercial banks); Informal (informal sources such as moneylender or informal bank); Equity Financing, Operations Finance and Investment Funds. The second set consists of Bank Financing; and Self Fund Raising (100-Bank Financing) as defined in Allen et al. (2005) to represent the proportion of new investments financed by all other sources except Bank Financing. The financing proportions are in percentages.

Panel A: Individual Financing Patterns

	Number of countries	Number of firms	Retained Earnings	Local Commercial Banks	Foreign Owned Commercial Bank	Operations Finance	Investment Funds	Loans from Family and Friends	Equity	Informal Sources	Other
Bangladesh		892	59.92	28.41	1.22	4.55	0.26	4.27	0.38	0.35	0.64
Brazil		1351	56.32	13.09	1.21	12.12	8.45	1.21	4.29	1.04	2.27
China		1342	15.24	20.24	0.12	1.03	0.55	5.89	12.39	1.84	42.70
India[c]		92	43.84	30.73	2.75	0.43	9.52	3.56	4.33	0.75	4.09
Indonesia		291	41.89	13.21	3.13	5.49	1.67	17.73	1.34	6.74	8.80
Nigeria		145	63.94	29.76	0.00	1.07	1.55	0.74	2.59	0.34	0.00
Russian Federation		701	82.47	5.57	0.36	5.87	0.73	1.74	0.36	1.02	1.87
Across Regions											
Africa	15	2708	66.02	18.14	1.05	6.15	0.98	1.88	1.36	0.48	3.95
East Asia and Pacific (excluding China)	8	5307	31.19	30.77	1.10	3.30	1.37	7.08	21.38	1.23	2.57
East Europe and Central Asia	36	15489	68.53	11.38	1.48	7.87	1.01	2.94	4.20	0.71	1.88
Latin America and Caribbean	10	4001	53.96	19.36	1.86	10.79	3.63	2.89	3.13	0.76	3.62
Middle East and North Africa	5	2103	74.52	12.37	0.69	5.25	0.28	2.46	1.70	0.15	2.57
South Asia	5	1572	58.63	21.95	0.86	4.76	1.00	4.59	3.23	0.68	4.29
Across Income Groups											
Low Income	26	6913	59.22	16.32	1.10	3.23	1.30	5.47	10.43	0.94	1.99
Middle Income	45	21062	59.26	16.12	1.40	7.29	1.43	3.26	4.89	0.82	5.53
High Income OECD	7	3020	58.22	19.74	1.04	12.81	0.62	1.09	5.29	0.10	1.09

Panel B: Aggregate Financing Patterns

	Number of countries	Number of firms	Internal	Bank Financing	Informal	Operations Finance	Equity	Investment Funds	Bank Financing	Self Fund Raising
				Aggregate Financing Patterns					**Allen et al. (2005)'s Categorization**	
Bangladesh		892	64.84	29.64	0.35	4.55	0.38	0.26	29.64	70.36
Brazil		1351	59.80	14.30	1.04	12.12	4.29	8.45	14.30	85.70
China		1342	63.82	20.37	1.84	1.03	12.39	0.55	20.37	79.63
India		92	51.49	33.48	0.75	0.43	4.33	9.52	33.48	66.52
Indonesia		291	68.42	16.34	6.74	5.49	1.34	1.67	16.34	83.66
Nigeria		145	64.69	29.76	0.34	1.07	2.59	1.55	29.76	70.24
Russian Federation		701	86.08	5.93	1.02	5.87	0.36	0.73	5.93	94.07
Across Regions										
Africa	15	2708	71.84	19.19	0.48	6.15	1.36	0.98	19.19	80.81
East Asia and Pacific (excluding China)	8	5307	40.84	31.87	1.23	3.30	21.38	1.37	31.87	68.13
East Europe and Central Asia	36	15489	73.34	12.86	0.71	7.87	4.20	1.01	12.86	87.14
Latin America and Caribbean	10	4001	60.47	21.22	0.76	10.79	3.13	3.63	21.22	78.78
Middle East and North Africa	5	2103	79.55	13.07	0.15	5.25	1.70	0.28	13.07	86.93
South Asia	5	1572	67.51	22.82	0.68	4.76	3.23	1.00	22.82	77.18
Across Income Groups										
Low Income	26	6913	66.67	17.42	0.94	3.23	10.43	1.30	17.42	82.58
Middle Income	45	21062	68.05	17.52	0.82	7.29	4.89	1.43	17.52	82.48
High Income OECD	7	3020	60.40	20.78	0.10	12.81	5.29	0.62	20.78	79.22

Table 2: Financing Patterns in China

This table presents financing patterns across different cities and regions in China and across different types of firms. In Panel A, Retained Earnings, Local Commercial Banks, Foreign Owned Commercial Banks, Equity, Operations Finance, Investment Funds, Loans from Family and Friends, Informal (eg: moneylender) and Other are financing proportions that stand for the proportion of new investments financed by each of these sources. Operations Finance consists of financing from leasing, trade credit and credit cards. Investment Funds includes funds from investment funds, development bank and other state services. In Panel B, we present two sets of aggregate financing patterns. The first set consists of Internal financing (Retained Earnings, Loans from Family and Friends and Other sources); Bank Financing (Local commercial banks and Foreign Owned commercial banks); Informal (informal sources such as moneylender or informal bank); Equity Financing, Operations Finance and Investment Funds. The second set consists of Bank Financing and Self Fund Raising (100-Bank Financing) as defined in Allen et al. (2005) to represent the proportion of new investments financed by all other sources except Bank Financing. The financing proportions are in percentages.

Panel A: Individual Financing Patterns

	Region	Province	Number of Firms	Retained Earnings	Local Commercial Banks	Foreign Owned Commercial Bank	Operations Finance	Family and Friends	Informal Sources	Equity	Investment Funds	Other
Across Cities in China												
Benxi	Northeast	Liaoning	89	7.96	33.81	0.00	0.00	9.56	5.43	14.03	1.12	28.09
Changchun	Northeast	Jilin	104	26.85	13.71	0.00	0.19	1.92	0.96	10.74	0.10	45.53
Changsha	Central	Hunan	55	15.56	29.91	0.36	0.00	4.84	4.55	6.96	0.64	37.18
Chongqing	Southwest	Chongqing	95	17.63	29.99	0.00	3.29	1.94	2.47	8.26	0.00	36.41
Dalian	Northeast	Liaoning	51	1.00	16.12	0.00	3.92	1.67	0.02	13.73	1.96	61.59
Guiyang	Southwest	Guizhou	57	8.93	30.12	0.00	0.09	0.61	0.00	9.54	0.32	50.39
Haerbin	Northeast	Heilongjiang	52	7.88	3.98	0.00	0.58	2.88	0.00	12.88	1.92	69.87
Hangzhou	Coastal	Zhejiang	78	24.96	25.53	0.19	1.03	1.41	0.00	22.91	0.00	23.97
Jiangmen	Coastal	Guangdong	70	4.29	35.13	1.57	2.26	5.13	1.14	8.31	1.86	40.31
Kunming	Southwest	Yunan	58	19.57	27.74	0.00	1.72	9.83	1.72	17.45	0.00	21.97
Lanzhou	Northwest	Gansu	27	11.85	15.11	0.00	0.00	11.48	1.48	16.67	0.00	43.41
Nanchang	Central	Jiangxi	135	18.01	15.39	0.00	0.89	8.22	1.07	10.64	0.19	45.59
Nanning	Southwest	Guangxi	48	15.23	9.92	0.00	0.83	11.15	4.85	28.23	0.00	29.79
Shenzhen	Coastal	Guangdong	78	12.49	9.59	0.00	1.92	0.00	0.00	5.71	0.00	70.29
Wenzhou	Coastal	Zhejiang	39	21.15	24.31	0.00	0.00	11.03	0.26	39.87	0.00	3.38
Wuhan	Central	Hubei	85	15.74	26.01	0.00	0.00	5.94	5.65	4.65	0.00	42.01
Xian	Northwest	Shaanxi	62	13.60	13.73	0.00	1.61	4.03	1.90	9.13	1.15	54.85
Zhengzhou	Central	Henan	104	16.08	9.20	0.00	0.10	9.69	0.96	8.83	0.05	55.10
Across Regions in China												
Central			379	16.61	18.18	0.05	0.34	7.62	2.57	8.26	0.17	46.18
Coastal			265	15.27	23.19	0.47	1.46	3.39	0.34	16.49	0.49	38.89
Northeast			296	13.38	18.46	0.00	0.84	4.34	1.97	12.62	1.05	47.33
Northwest			89	13.07	14.15	0.00	1.12	6.29	1.78	11.42	0.80	51.38
Southwest			258	15.70	25.78	0.00	1.78	5.13	2.20	14.33	0.07	35.02

Region	Province	Number of Firms	Retained Earnings	Local Commercial Banks	Foreign Owned Commercial Bank	Operations Finance	Family and Friends	Informal Sources	Equity	Investment Funds	Other
Across All Firms		1287	15.16	20.52	0.11	1.03	5.41	1.85	12.39	0.46	43.07
Across Firm Sizes											
Micro		250	11.41	15.06	0.00	0.48	13.54	2.58	12.78	0.84	43.31
Small		249	14.20	14.82	0.04	1.14	6.70	1.59	13.97	0.10	47.45
Medium		249	16.50	21.89	0.46	0.60	4.62	1.49	11.14	0.94	42.36
Large		249	17.04	21.35	0.00	1.10	2.79	1.99	12.14	0.14	43.45
Very Large		249	17.02	30.13	0.08	1.61	0.08	1.81	11.25	0.29	37.73
Legal Status											
Publicly Listed Company		37	9.00	33.32	0.00	0.00	0.00	0.00	36.11	0.00	21.57
Privately held Company		490	18.11	20.54	0.03	0.98	10.00	2.21	14.14	0.26	33.75
Cooperatives		165	15.92	17.59	0.00	0.55	5.33	0.99	10.65	0.06	48.92
Across Firm Ownership (>50%)											
State		288	11.69	25.90	0.00	0.02	0.79	1.47	6.36	0.59	53.18
Domestic Private		901	16.23	19.60	0.14	1.10	7.30	2.00	14.16	0.36	39.12
Foreign Private		108	16.19	14.56	0.19	3.36	1.67	1.39	13.64	0.93	48.08
Age											
Less than 5 years		262	14.83	20.53	0.00	0.73	10.29	2.61	16.33	0.52	34.18
Between 5 and 20 years		735	16.67	18.16	0.20	1.45	4.85	1.52	13.53	0.62	43.01
Greater than 20 years		290	11.67	26.51	0.00	0.24	2.40	1.99	5.96	0.00	51.23

Panel B: Aggregate Financing Patterns

| | | | Number of | | | | | | | Aggregate Financing Patterns | Allen et al. (2005)'s Categorization | |
	Region	Province	firms	Internal	Bank Financing	Informal	Operations Finance	Equity	Investment Funds	Bank Financing	Self Fund Raising
Across Cities in China											
Benxi	Northeast	Liaoning	89	45.61	33.81	5.43	0.00	14.03	1.12	33.81	66.19
Changchun	Northeast	Jilin	104	74.30	13.71	0.96	0.19	10.74	0.10	13.71	86.29
Changsha	Central	Hunan	55	57.58	30.27	4.55	0.00	6.96	0.64	30.27	69.73
Chongqing	Southwest	Chongqing	95	55.98	29.99	2.47	3.29	8.26	0.00	29.99	70.01
Dalian	Northeast	Liaoning	51	64.25	16.12	0.02	3.92	13.73	1.96	16.12	83.88
Guiyang	Southwest	Guizhou	57	59.93	30.12	0.00	0.09	9.54	0.32	30.12	69.88
Haerbin	Northeast	Heilongjiang	52	80.63	3.98	0.00	0.58	12.88	1.92	3.98	96.02
Hangzhou	Coastal	Zhejiang	78	50.35	25.72	0.00	1.03	22.91	0.00	25.72	74.28
Jiangmen	Coastal	Guangdong	70	49.73	36.70	1.14	2.26	8.31	1.86	36.70	63.30
Kunming	Southwest	Yunan	58	51.36	27.74	1.72	1.72	17.45	0.00	27.74	72.26
Lanzhou	Northwest	Gansu	27	66.74	15.11	1.48	0.00	16.67	0.00	15.11	84.89
Nanchang	Central	Jiangxi	135	71.82	15.39	1.07	0.89	10.64	0.19	15.39	84.61
Nanning	Southwest	Guangxi	48	56.17	9.92	4.85	0.83	28.23	0.00	9.92	90.08
Shenzhen	Coastal	Guangdong	78	82.78	9.59	0.00	1.92	5.71	0.00	9.59	90.41
Wenzhou	Coastal	Zhejiang	39	35.56	24.31	0.26	0.00	39.87	0.00	24.31	75.69
Wuhan	Central	Hubei	85	63.69	26.01	5.65	0.00	4.65	0.00	26.01	73.99
Xian	Northwest	Shaanxi	62	72.48	13.73	1.90	1.61	9.13	1.15	13.73	86.27
Zhengzhou	Central	Henan	104	80.87	9.20	0.96	0.10	8.83	0.05	9.20	90.80
Across Regions in China											
Central			379	70.41	18.23	2.57	0.34	8.26	0.17	18.23	81.77
Coastal			265	57.55	23.66	0.34	1.46	16.49	0.49	23.66	76.34
Northeast			296	65.05	18.46	1.97	0.84	12.62	1.05	18.46	81.54
Northwest			89	70.74	14.15	1.78	1.12	11.42	0.80	14.15	85.85
Southwest			258	55.85	25.78	2.20	1.78	14.33	0.07	25.78	74.22
Across All Firms			1287	63.64	20.63	1.85	1.03	12.39	0.46	20.63	79.37
Across Firm Sizes											
Micro			250	68.27	15.06	2.58	0.48	12.78	0.84	15.06	84.94
Small			249	68.35	14.86	1.59	1.14	13.97	0.10	14.86	85.14
Medium			249	63.47	22.35	1.49	0.60	11.14	0.94	22.35	77.65
Large			249	63.27	21.35	1.99	1.10	12.14	0.14	21.35	78.65
Very Large			249	54.84	30.21	1.81	1.61	11.25	0.29	30.21	69.79
Legal Status											
Publicly Listed Company			37	30.57	33.32	0.00	0.00	36.11	0.00	33.32	66.68
Privately held Company			490	61.86	20.57	2.21	0.98	14.14	0.26	20.57	79.43
Cooperatives			165	70.16	17.59	0.99	0.55	10.65	0.06	17.59	82.41

				Aggregate Financing Patterns					Allen et al. (2005)'s Categorization	
Region	Province	Number of firms	Internal	Bank Financing	Informal	Operations Finance	Equity	Investment Funds	Bank Financing	Self Fund Raising
Across Firm Ownership (>50%)										
State		288	65.66	25.90	1.47	0.02	6.36	0.59	25.90	74.10
Domestic Private		901	62.65	19.74	2.00	1.10	14.16	0.36	19.74	80.26
Foreign Private		108	65.94	14.75	1.39	3.36	13.64	0.93	14.75	85.25
Age										
Less than 5 years		262	59.29	20.53	2.61	0.73	6.36	0.59	20.53	79.47
Between 5 and 20 years		735	64.53	18.35	1.52	1.45	14.16	0.36	18.35	81.65
Greater than 20 years		290	65.30	26.51	1.99	0.24	13.64	0.93	26.51	73.49

Table 3: Summary Statistics and Correlations

Panel A presents summary statistics. Panel B presents the correlations between the financing variables and firm performance. Bank Dummy takes the value 1 if the firm said it had a loan from a bank or financial institution and 0 if the firm said it had no bank loan and had no overdraft facility or line of credit. Access Dummy is a dummy variable that takes the value 1 if the firm had access to a bank loan in any year prior from 1990-2001 and 0 otherwise. Bank Financing Dummy takes the value 1 if the firm said it had a loan from a bank or financial institution AND (bank financing of new investments was greater than 50% OR bank financing of working capital was greater than 50%).Bank Financing takes the value 0 if (the firm said it had no loan from a bank or financial institution OR said it had no overdraft facility or line of credit) AND (bank financing of new investments was equal to 0% AND bank financing of working capital was equal to 0%). Self Financing1 takes the value 1 if the sum of informal financing and other financing of new investments was greater than 50% OR the sum of informal financing and other financing of working capital was greater than 50%. Self Financing1 takes the value 0 if the sum of informal and other financing of new investments is equal to 0 % AND the sum of informal and other financing of working capital is equal to 0%. Self Financing2 takes the value 1 if the sum of internal, informal, family, and other financing of new investments was greater than 50% OR the sum of internal, informal, family and other financing of working capital was greater than 50%. Self Financing2 takes the value 0 if the sum of internal, informal, family and other financing of new investments is equal to 0 % AND the sum of internal, informal, family and other financing of working capital is equal to 0%.Sales Growth is defined as the log change in total sales and is computed from 2001 to 2002 and from 1999 to 2002. Labor Productivity Growth is defined as the log change in labor productivity where labor productivity is (Sales-Total Material Costs)/Total Number of Workers. Productivity Growth is computed from 2001 to 2002 and from 1999 to 2002. Reinvestment Rate is the share of net profits re-invested in the establishment in 2002. Firm Size Dummies are quintiles of total firm sales in 1999. Age is the age of the company in 2003. Corporation Dummy takes the value 1 if the firm is organized as a corporation (public or private) and 0 otherwise. Cooperatives/Collectives Dummy takes the value 1 if the firm is organized as a Cooperative or a Collective. State Ownership Dummy takes the value 1 if the state owns more than 50% of the company. Competition takes values 1 to 5 for 1-3 competitors, 4- 6 competitors. 7- 15 competitors, 16-100 competitors and over 100 competitors respectively for the number of competitors in its main business line in the domestic Market.

Panel A: Summary Statistics

Variable	N	Mean	Standard Deviation	Minimum	Maximum
Financing					
Bank Dummy	2326	0.2309	0.4215	0	1
Access Dummy	2400	0.2858	0.4519	0	1
Bank Financing	941	0.2721	0.4452	0	1
Self Financing1	1446	0.6023	0.4896	0	1
Self Financing2	1502	0.8302	0.3756	0	1
Firm Performance					
Sales Growth [2001-2002]	2370	0.0563	0.7072	-7.44	7.13
Reinvestment Rate [2001]	2115	0.1761	0.3230	0	1
Sales Growth [1999-2002]	2559	0.1349	0.3890	-2.36	2.71
Labor Productivity Growth [2001-2002]	1558	0.0045	0.8132	-6.68	8.02
Labor Productivity Growth [1999-2002]	1486	0.0810	0.3397	-1.97	3.28
Growth in TFP [2001-2002]	693	-0.0192	0.9521	-4.84	6.31
Firm Characteristics					
Size Dummies	2283	2.9991	1.4145	1	5
Age	2400	15.9862	14.3902	3	53
Corporation Dummy	2400	0.4046	0.4909	0	1
Cooperatives Dummy	2400	0.1612	0.3678	0	1
State Ownership Dummy	2399	0.2213	0.4152	0	1
Competition Dummies	2326	3.8224	1.3535	1	5

	Sales Growth [2001-2002]	Reinvestment Rate	Labor Productivity Growth [2001-2002]	Sales Growth [1999-2002]	Productivity Growth [1999-2002]	Bank Dummy	Access Dummy	Bank Financing	Self Financing1
Reinvestment Rate	0.074[a]								
Labor Productivity Growth [2001-2002]	0.6536[a]	-0.0111							
Sales Growth [1999-2002]	0.5072[a]	0.1171[a]	0.2982[a]						
Labor Productivity Growth [1999-2002]	0.4238[a]	0.0488[c]	0.4682[a]	0.7298[a]					
Bank Dummy	0.037[c]	0.132[a]	0.0058	0.0671[a]	0.0573[b]				
Access Dummy	0.0003	-0.0076	-0.0332	-0.0613[a]	-0.0601[b]	0.0914[a]			
Bank Financing	0.0366	0.1664[a]	0.0279	0.074[a]	0.0878[a]	1[a]	0.0767[a]		
Self Financing1	-0.0077	-0.0923[a]	0.0639[b]	-0.0491[b]	0.0016	-0.1174[a]	-0.0854[a]	-0.1762[a]	
Self Financing2	0.0009	-0.0672[a]	0.0746[a]	-0.0229	0.0111	-0.1281[a]	-0.0801[a]	-0.1861[a]	0.9303[a]

[c] significant at 10%; [b] significant at 5%; [a] significant at 1%

Table 4: Bank Financing and Firm Performance – Partial Correlations

The estimated model is: Sales Growth/Reinvestment Rate/Productivity Growth = α + β₁BankDummy+ β₂Small + β₃ Medium + β₄Large + β₅Very Large + β₆ Mid-Age + β₇ Old + β₈Corporations + β₉Collectives + β₁₀State Ownership + β₁₁Competition Dummies + β₁₂City Dummies.

Sales Growth is defined as the log change in total sales and is computed from 2001 to 2002 and from 1999 to 2002. Labor Productivity Growth is defined as the log change in productivity where productivity is (Sales-Total Material Costs)/Total Number of Workers. Labor Productivity Growth is computed from 2001 to 2002 and from 1999 to 2002. Growth in Total Factor Productivity (TFP) is computed from 2001-2002 where TFP is calculated as the residual from a regression of value added on labor and fixed assets, allowing for industry-specific coefficients for each variable. Reinvestment Rate is the share of net profits re-invested in the establishment in 2002. Bank Dummy takes the value 1 if the firm said it had a loan from a bank or financial institution and 0 if the firm said it had no bank loan and had no overdraft facility or line of credit. Firm Size Dummies are quintiles of total firm sales in 1999. Small, Medium, Large and Very Large dummies take the value 1 if the firm is in the second, third, fourth or fifth quintile respectively of firm sales. Mid-Age is a dummy variable that takes the value 1 if the firm is between 5 and 20 years of age and Old is a dummy variable that takes the value 1 if the firm is greater than 20 years old. The omitted age dummy is less than 5 years. Corporation Dummy takes the value 1 if the firm is organized as a corporation (public or private) and 0 otherwise. Cooperatives/Collectives Dummy takes the value 1 if the firm is organized as a Cooperative or a Collective. State Ownership Dummy takes the value 1 if the state owns more than 50% of the company. 4 to 6 Competitors, 7 to 15 Competitors, 16 to 100 Competitors and Over 100 Competitors are dummy variables that take the value 1 if the firm has the corresponding number of competitors in its main business line in the domestic market. The omitted category is 1 to 3 Competitors. Columns 1 to 5 present results for the full sample and columns 6 to 10 present results for a sample of firms that don't include firms registered as publicly traded firms and state owned enterprises. We use OLS regressions with robust standard errors.

	Full Sample						Drop Public Corporations and State Owned Companies					
	1	2	3	4	5	6	7	8	9	10	11	12
	Sales Growth [2001-2002]	Profit Reinvestment rate in 2002	Labor Productivity Growth [2001-2002]	Growth in TFP [2001-2002]	Sales Growth [1999-2002]	Productivity Growth [1999-2002]	Sales Growth [2001-2002]	Profit Reinvestment rate in 2002	Labor Productivity Growth [2001-2002]	Growth in TFP [2001-2002]	Sales Growth [1999-2002]	Productivity Growth [1999-2002]
Bank Dummy	0.075[b]	0.078[a]	-0.002	0.052	0.115[a]	0.058[a]	0.068[c]	0.086[a]	-0.004	0.051	0.120[a]	0.066[b]
	[0.034]	[0.020]	[0.051]	[0.084]	[0.019]	[0.022]	[0.040]	[0.024]	[0.057]	[0.098]	[0.024]	[0.026]
Small	-0.121[b]	0.057[b]	-0.064	-0.051	-0.195[a]	-0.085[b]	-0.127[b]	0.077[a]	-0.09	-0.061	-0.205[a]	-0.097[b]
	[0.057]	[0.023]	[0.079]	[0.253]	[0.031]	[0.038]	[0.064]	[0.026]	[0.084]	[0.258]	[0.034]	[0.043]
Medium	-0.136[b]	0.071[a]	0.007	-0.138	-0.258[a]	-0.136[a]	-0.146[b]	0.086[a]	-0.007	-0.186	-0.289[a]	-0.168[a]
	[0.056]	[0.024]	[0.080]	[0.239]	[0.031]	[0.038]	[0.065]	[0.028]	[0.088]	[0.247]	[0.035]	[0.043]
Large	-0.160[a]	0.047[b]	-0.088	-0.357	-0.298[a]	-0.187[a]	-0.169[a]	0.058[b]	-0.123	-0.347	-0.319[a]	-0.202[a]
	[0.057]	[0.023]	[0.081]	[0.247]	[0.032]	[0.040]	[0.066]	[0.027]	[0.089]	[0.252]	[0.037]	[0.046]
Very Large	-0.230[a]	0.075[a]	-0.086	-0.431[c]	-0.359[a]	-0.184[a]	-0.221[b]	0.108[a]	-0.086	-0.343	-0.398[a]	-0.220[a]
	[0.072]	[0.026]	[0.087]	[0.250]	[0.036]	[0.043]	[0.094]	[0.034]	[0.101]	[0.257]	[0.044]	[0.053]
Mid-Age	0.001	-0.007	-0.038	-0.113	-0.143[a]	-0.090[a]	-0.006	-0.027	-0.04	-0.175	-0.163[a]	-0.098[a]
	[0.041]	[0.021]	[0.059]	[0.104]	[0.024]	[0.029]	[0.047]	[0.024]	[0.063]	[0.118]	[0.026]	[0.032]
Old	-0.064	-0.048[b]	0.03	-0.091	-0.208[a]	-0.046	-0.035	-0.086[a]	0.064	-0.086	-0.210[a]	-0.06
	[0.049]	[0.024]	[0.075]	[0.146]	[0.027]	[0.035]	[0.064]	[0.032]	[0.083]	[0.195]	[0.035]	[0.040]
Corporations	-0.03	0.083[a]	-0.027	-0.097	-0.012	-0.038[c]	-0.066	0.106[a]	-0.047	-0.096	-0.043[b]	-0.041
	[0.035]	[0.019]	[0.057]	[0.086]	[0.018]	[0.022]	[0.043]	[0.022]	[0.069]	[0.099]	[0.021]	[0.026]
Cooperative	-0.116[b]	0.033	-0.024	0.011	-0.143[a]	-0.098[a]	-0.169[a]	0.057[b]	-0.05	0.006	-0.184[a]	-0.098[a]
	[0.053]	[0.022]	[0.068]	[0.128]	[0.025]	[0.027]	[0.065]	[0.028]	[0.081]	[0.140]	[0.030]	[0.032]
State	-0.01	-0.022	0.053	-0.024	-0.037[c]	-0.033	-0.002	-0.02	-0.019	0.149	0.01	-0.019

	Full Sample						Drop Public Corporations and State Owned Companies					
	1	2	3	4	5	6	7	8	9	10	11	12
	Sales Growth [2001-2002]	Profit Reinvestment rate in 2002	Labor Productivity Growth [2001-2002]	Growth in TFP [2001-2002]	Sales Growth [1999-2002]	Productivity Growth [1999-2002]	Sales Growth [2001-2002]	Profit Reinvestment rate in 2002	Labor Productivity Growth [2001-2002]	Growth in TFP [2001-2002]	Sales Growth [1999-2002]	Productivity Growth [1999-2002]
	[0.041]	[0.019]	[0.062]	[0.162]	[0.020]	[0.026]	[0.076]	[0.035]	[0.115]	[0.296]	[0.039]	[0.046]
4-6 Competitors	0.012	0.053	-0.049	-0.181	0.011	-0.029	-0.017	0.092^b	-0.004	-0.116	0.021	-0.02
	[0.055]	[0.033]	[0.086]	[0.157]	[0.033]	[0.038]	[0.070]	[0.039]	[0.104]	[0.191]	[0.043]	[0.047]
7-15 Competitors	0.015	0.004	0.011	0.055	-0.031	-0.03	0.019	0.033	0.075	0.003	-0.007	0
	[0.062]	[0.029]	[0.097]	[0.169]	[0.034]	[0.042]	[0.080]	[0.035]	[0.126]	[0.199]	[0.043]	[0.053]
16-100 Competitors	-0.053	0.022	-0.043	-0.053	-0.063^b	-0.077^b	-0.051	0.063^c	-0.023	-0.032	-0.06	-0.074^c
	[0.049]	[0.027]	[0.078]	[0.157]	[0.029]	[0.036]	[0.063]	[0.032]	[0.096]	[0.198]	[0.038]	[0.045]
>100 Competitors	-0.125^b	0.02	-0.073	-0.052	-0.091^a	-0.081^b	-0.107^c	0.046	-0.029	0.012	-0.083^b	-0.073^c
	[0.050]	[0.025]	[0.075]	[0.141]	[0.027]	[0.034]	[0.061]	[0.029]	[0.091]	[0.174]	[0.036]	[0.043]
Changchun	-0.024	0.178^a	-0.03	0.392^b	0.149^a	0.059	-0.05	0.186^a	-0.003	0.257	0.159^b	0.135^b
	[0.091]	[0.039]	[0.144]	[0.183]	[0.049]	[0.053]	[0.125]	[0.052]	[0.155]	[0.210]	[0.064]	[0.064]
Changsha	-0.024	0.083^b	-0.083	0.107	0.048	-0.034	-0.079	0.095^b	-0.213	-0.007	0.07	0.017
	[0.089]	[0.032]	[0.130]	[0.199]	[0.044]	[0.046]	[0.121]	[0.045]	[0.153]	[0.227]	[0.055]	[0.056]
Chongqing	0.034	0.089^b	0.12	0.176	0.093^b	0.077^c	-0.022	0.055	0.001	0.172	0.121^b	0.099^c
	[0.086]	[0.038]	[0.125]	[0.206]	[0.044]	[0.046]	[0.118]	[0.048]	[0.139]	[0.250]	[0.057]	[0.056]
Dalian	-0.108	0.031	0.023	0.463	0.043	0.035	-0.127	0.032	-0.13	0.38	0.088	0.074
	[0.124]	[0.038]	[0.130]	[0.299]	[0.058]	[0.054]	[0.123]	[0.052]	[0.144]	[0.344]	[0.069]	[0.066]
Guiyang	0.031	0.064^c	-0.049	0.244	0.069	-0.008	0.111	0.089^c	-0.191	0.407	0.155^b	0.027
	[0.108]	[0.037]	[0.129]	[0.536]	[0.054]	[0.053]	[0.155]	[0.054]	[0.160]	[0.647]	[0.073]	[0.062]
Haerbin	-0.146	0.081^b	-0.156	-0.136	0.054	-0.039	-0.122	0.094^c	-0.203	-0.197	0.077	0.013
	[0.096]	[0.038]	[0.135]	[0.260]	[0.055]	[0.055]	[0.124]	[0.048]	[0.153]	[0.298]	[0.066]	[0.066]
Hangzhou	0.06	0.118^a	-0.034	0.380^b	0.147^a	0.052	0.035	0.130^b	-0.071	0.206	0.184^a	0.150^b
	[0.105]	[0.044]	[0.164]	[0.193]	[0.051]	[0.059]	[0.133]	[0.056]	[0.156]	[0.223]	[0.062]	[0.063]
Jiangmen	0.061	0.094^b	-0.031	0.336^c	0.045	-0.042	0.002	0.087^c	-0.119	0.192	0.048	0.014
	[0.106]	[0.040]	[0.145]	[0.195]	[0.048]	[0.056]	[0.140]	[0.048]	[0.161]	[0.225]	[0.060]	[0.065]
Kunming	0.003	0.112^a	0.047	0.17	0.005	-0.022	-0.078	0.124^b	-0.087	-0.001	0.006	0.017
	[0.099]	[0.036]	[0.121]	[0.231]	[0.048]	[0.048]	[0.135]	[0.048]	[0.144]	[0.270]	[0.063]	[0.060]
Lanzhou	0.011	0.089^a	-0.092	0.415	0.003	-0.065	-0.059	0.078^c	-0.181	0.185	-0.013	-0.046
	[0.101]	[0.035]	[0.147]	[0.309]	[0.050]	[0.054]	[0.130]	[0.047]	[0.175]	[0.430]	[0.066]	[0.073]
Nanchang	0.114	0.191^a	-0.08	0.014	0.113^b	0.042	0.069	0.227^a	-0.184	-0.192	0.136^b	0.087
	[0.091]	[0.038]	[0.143]	[0.239]	[0.047]	[0.056]	[0.128]	[0.053]	[0.173]	[0.286]	[0.064]	[0.074]

	Full Sample						Drop Public Corporations and State Owned Companies					
	1	2	3	4	5	6	7	8	9	10	11	12
	Sales Growth [2001-2002]	Profit Reinvestment rate in 2002	Labor Productivity Growth [2001-2002]	Growth in TFP [2001-2002]	Sales Growth [1999-2002]	Productivity Growth [1999-2002]	Sales Growth [2001-2002]	Profit Reinvestment rate in 2002	Labor Productivity Growth [2001-2002]	Growth in TFP [2001-2002]	Sales Growth [1999-2002]	Productivity Growth [1999-2002]
Nanning	-0.113	0.076[b]	-0.161	-0.131	0.025	-0.086	-0.147	0.086[c]	-0.330[c]	-0.103	0.074	-0.037
	[0.116]	[0.036]	[0.144]	[0.193]	[0.056]	[0.054]	[0.158]	[0.051]	[0.170]	[0.206]	[0.074]	[0.067]
Shenzhen	0.223[c]	0.048	0.151	-0.009	0.185[a]	0.116	0.215	0.05	0.033	-0.179	0.235[a]	0.173
	[0.131]	[0.042]	[0.236]	[0.302]	[0.057]	[0.084]	[0.183]	[0.057]	[0.295]	[0.370]	[0.077]	[0.115]
Wenzhou	0.108	0.123[a]	-0.107	0.208	0.155[a]	0.031	0.068	0.101[b]	-0.186	0.162	0.192[a]	0.073
	[0.104]	[0.046]	[0.156]	[0.241]	[0.052]	[0.058]	[0.131]	[0.051]	[0.170]	[0.261]	[0.063]	[0.064]
Wuhan	-0.181[c]	0.081[b]	-0.182	0.054	0.027	-0.001	-0.261[c]	0.059	-0.318[c]	0.025	0.026	0.028
	[0.097]	[0.033]	[0.137]	[0.208]	[0.045]	[0.051]	[0.134]	[0.045]	[0.163]	[0.224]	[0.059]	[0.066]
Xian	-0.008	0.085[b]	-0.044	0.082	0.067	0.035	-0.06	0.102[b]	-0.236	0.018	0.099	0.086
	[0.108]	[0.033]	[0.155]	[0.209]	[0.050]	[0.047]	[0.147]	[0.046]	[0.183]	[0.242]	[0.064]	[0.060]
Zhengzhou	-0.011	0.144[a]	0.037	0.264	0.027	-0.045	-0.061	0.125[a]	-0.077	0.223	0.02	-0.025
	[0.085]	[0.039]	[0.118]	[0.189]	[0.046]	[0.051]	[0.116]	[0.048]	[0.137]	[0.222]	[0.059]	[0.061]
Constant	0.288[a]	-0.022	0.151	0.231	0.489[a]	0.349[a]	0.360[a]	-0.071	0.246	0.283	0.519[a]	0.319[a]
	[0.099]	[0.036]	[0.144]	[0.281]	[0.052]	[0.061]	[0.136]	[0.048]	[0.166]	[0.301]	[0.067]	[0.074]
Observations	2145	1905	1456	643	2135	1423	1534	1363	1099	519	1527	1072
R-squared	0.036	0.072	0.017	0.054	0.175	0.071	0.037	0.087	0.023	0.049	0.195	0.083

[c] significant at 10%; [b] significant at 5%; [a] significant at 1%

Table 5: Bank Financing and Firm Performance – Selection Model

A two-step selection model is used to estimate the effect of the endogenous Bank Dummy (binary treatment) on Firm Performance.

In Panel A: The first step is: Bank Dummy = α_0 + β_1 Collateral + β_2 Small + β_3 Medium + β_4 Large + β_5 Very Large + β_6 Mid-Age + β_7 Old + β_8 Corporations + β_9 Collectives + β_{10} State Ownership + β_{11} Competition Dummies + β_{12} City Dummies. The second step is: Sales/Reinvestment Rate/Productivity Growth = α_1 + γ_1 BankDummy + γ_2 Small + γ_3 Medium + γ_4 Large + γ_5 Very Large + γ_6 Mid-Age + γ_7 Old + γ_8 Corporations + γ_9 Collectives + γ_{10} State Ownership + γ_{11} Competition Dummies + γ_{12} City Dummies.

Sales Growth is defined as the log change in total sales and is computed from 2001 to 2002. Labor Productivity Growth is defined as the log change in productivity where productivity is (Sales-Total Material Costs)/Total Number of Workers. Labor Productivity Growth is computed from 2001 to 2002. Reinvestment Rate is the share of net profits re-invested in the establishment in 2002. Bank Dummy takes the value 1 if the firm said it had a loan from a bank or financial institution and 0 if the firm said it had no bank loan and had no overdraft facility or line of credit. The identifying variable is Collateral which is a dummy variable that takes the value 1 if the financing required a collateral or a deposit and 0 if the financing did not require collateral or if the firm did not apply for a loan because of stringent collateral requirements or if the firm was rejected for a loan because of the lack of collateral. Firm Size Dummies are quintiles of total firm sales in 1999. Small, Medium, Large and Very Large dummies take the value 1 if the firm is in the second, third, fourth or fifth quintile respectively of firm sales. Mid-age is a dummy variable that takes the value 1 if the firm is between 5 and 20 years of age and Old is a dummy variable that takes the value 1 if the firm is greater than 20 years old. The omitted age dummy is less than 5 years. Corporation Dummy takes the value 1 if the firm is organized as a corporation (public or private) and 0 otherwise. Cooperatives/Collectives Dummy takes the value 1 if the firm is organized as a Cooperative or a Collective. State Ownership Dummy takes the value 1 if the state owns more than 50% of the company. 4 to 6 Competitors, 7 to 15 Competitors, 16 to 100 Competitors and Over 100 Competitors are dummy variables that take the value 1 if the firm has the corresponding number of competitors in its main business line in the domestic market. The omitted category is 1 to 3 Competitors. Columns 1 to 6 present results for the full sample and columns 7 to 12 present results for a sample of firms that don't include firms registered as publicly traded firms and state owned enterprises. Hazard Lambdas are reported for each of the second stages.

	1	2	3	4	5	6	7	8	9	10	11	12
	Full Sample						Drop Public Corporations and State Owned Companies					
	Sales Growth [2001-2002]	Selection Equation	Profit Reinvestment rate in 2002	Selection Equation	Labor Productivity Growth [2001-2002]	Selection Equation	Sales Growth [2001-2002]	Selection Equation	Profit Reinvestment rate in 2002	Selection Equation	Labor Productivity Growth [2001-2002]	Selection Equation
Bank Dummy	0.310[a]		0.183[a]		0.116		0.244[b]		0.156[b]		0.068	
	[0.116]		[0.058]		[0.147]		[0.124]		[0.063]		[0.143]	
Collateral		0.968[a]		0.964[a]		0.941[a]		1.120[a]		1.102[a]		1.103[a]
		[0.076]		[0.080]		[0.089]		[0.095]		[0.099]		[0.107]
Small	-0.229[a]	0.101	0.075[b]	0.081	-0.101	-0.044	-0.219[a]	0.01	0.093[a]	-0.018	-0.129	-0.131
	[0.062]	[0.147]	[0.031]	[0.154]	[0.088]	[0.182]	[0.067]	[0.163]	[0.034]	[0.171]	[0.089]	[0.199]
Medium	-0.274[a]	0.240[c]	0.065[b]	0.224	-0.062	0.101	-0.276[a]	0.139	0.082[b]	0.142	-0.11	0.01
	[0.062]	[0.141]	[0.031]	[0.147]	[0.085]	[0.171]	[0.069]	[0.159]	[0.035]	[0.167]	[0.087]	[0.187]
Large	-0.289[a]	0.401[a]	0.03	0.363[b]	-0.147[c]	0.215	-0.284[a]	0.281[c]	0.06	0.262	-0.190[b]	0.085
	[0.065]	[0.140]	[0.032]	[0.146]	[0.086]	[0.168]	[0.073]	[0.161]	[0.037]	[0.167]	[0.088]	[0.186]
Very Large	-0.420[a]	0.850[a]	0.042	0.860[a]	-0.12	0.700[a]	-0.386[a]	0.742[a]	0.080[c]	0.714[a]	-0.116	0.610[a]
	[0.076]	[0.144]	[0.038]	[0.150]	[0.099]	[0.173]	[0.089]	[0.173]	[0.045]	[0.181]	[0.105]	[0.200]
Mid Age	-0.001	-0.042	-0.007	-0.06	-0.097	-0.15	-0.022	-0.051	-0.014	-0.059	-0.1	-0.129
	[0.049]	[0.104]	[0.024]	[0.108]	[0.065]	[0.123]	[0.054]	[0.117]	[0.027]	[0.122]	[0.066]	[0.137]
Old	-0.033	-0.02	-0.061[b]	-0.075	-0.052	-0.177	-0.018	-0.184	-0.105[a]	-0.173	0.024	-0.314
	[0.061]	[0.129]	[0.030]	[0.135]	[0.080]	[0.154]	[0.077]	[0.169]	[0.039]	[0.174]	[0.092]	[0.194]
Corporations	-0.036	0.170[c]	0.070[a]	0.139	-0.06	0.147	-0.065	-0.026	0.111[a]	-0.023	-0.084	-0.064
	[0.044]	[0.089]	[0.022]	[0.094]	[0.055]	[0.102]	[0.050]	[0.108]	[0.025]	[0.113]	[0.060]	[0.123]

	1	2	3	4	5	6	7	8	9	10	11	12
	Full Sample						Drop Public Corporations and State Owned Companies					
	Sales Growth [2001-2002]	Selection Equation	Profit Reinvestment rate in 2002	Selection Equation	Labor Productivity Growth [2001-2002]	Selection Equation	Sales Growth [2001-2002]	Selection Equation	Profit Reinvestment rate in 2002	Selection Equation	Labor Productivity Growth [2001-2002]	Selection Equation
Cooperative	-0.150[a]	-0.02	0.024	0.003	-0.01	0.05	-0.207[a]	-0.063	0.061[c]	-0.046	-0.044	-0.052
	[0.056]	[0.124]	[0.028]	[0.130]	[0.072]	[0.144]	[0.066]	[0.148]	[0.034]	[0.154]	[0.079]	[0.166]
State	-0.032	0.062	-0.01	0.102	0.066	0.097						
	[0.049]	[0.102]	[0.025]	[0.108]	[0.067]	[0.126]						
4 to 6 Competitors	0.015	0.446[a]	0.032	0.462[a]	-0.079	0.412[b]	-0.021	0.554[a]	0.062	0.545[a]	-0.059	0.610[a]
	[0.080]	[0.161]	[0.040]	[0.170]	[0.099]	[0.182]	[0.095]	[0.200]	[0.048]	[0.207]	[0.109]	[0.220]
7 to 15 Competitors	-0.011	0.203	-0.004	0.236	-0.097	0.245	-0.034	0.276	0.014	0.317	-0.072	0.392[c]
	[0.074]	[0.155]	[0.037]	[0.163]	[0.092]	[0.175]	[0.090]	[0.198]	[0.045]	[0.204]	[0.104]	[0.217]
16 to 100 Competitors	-0.055	0.232	0.003	0.269[c]	-0.1	0.201	-0.059	0.291	0.041	0.249	-0.122	0.297
	[0.068]	[0.145]	[0.034]	[0.153]	[0.085]	[0.164]	[0.082]	[0.185]	[0.041]	[0.190]	[0.093]	[0.201]
Over 100 Competitors	-0.146[b]	0.141	0.007	0.155	-0.153[c]	0.173	-0.134[c]	0.237	0.02	0.231	-0.143	0.308
	[0.064]	[0.140]	[0.032]	[0.147]	[0.083]	[0.161]	[0.078]	[0.177]	[0.039]	[0.183]	[0.091]	[0.197]
Hazard Lambda	-0.146[b]		-0.068[c]		-0.095		-0.122		-0.042		-0.059	
	[0.072]		[0.036]		[0.092]		[0.078]		[0.039]		[0.090]	
Observations	1549	1549	1397	1397	1089	1089	1110	1110	1004	1004	819	819

[c] significant at 10%; [b] significant at 5%; [a] significant at 1%

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Table 6: Bank Financing and Firm Performance – Selection Model Robustness

In Panels A and B, a two-step selection effects model is used to estimate the effect of the endogenous Bank Dummy (binary treatment) on Firm Performance. In Panel C, average treatment effects on the treated are reported using Propensity Score Matching.

In Panel A: The first step is: Bank Dummy = $\alpha_0 + \beta_1$ Collateral + β_2Small + β_3 Medium + β_4Large + β_5Very Large + β_6 Middle-Age + β_7 Old + β_8Corporations + β_9Collectives + β_{10}State Ownership + β_{11}Competition Dummies + β_{12}City Dummies + β_{13} Bank Corruption + β_{14} Government Help dummy + β_{15}Loan from Group or Holding Company + β_{16}Loan Guarantee Program + β_{17} Located in Export Processing Zone+ β_{18} Property Rights + β_{19}Dispute Resolution in Courts + β_{20}CEO Education Level + β_{21}Politically Connected CEO. The second step is: Sales/Reinvestment Rate/Productivity Growth = $\alpha_1 + \gamma_1$BankDummy+ γ_2Small + γ_3 Medium + γ_4Large + γ_5Very Large + γ_6 Middle-Age + γ_7 Old + γ_8Corporations + γ_9Collectives + γ_{10}State Ownership + γ_{11}Competition Dummies + γ_{12}City Dummies + γ_{13} Bank Corruption + γ_{14} Government Help dummy + γ_{15}Loan from Group or Holding Company + γ_{16}Loan Guarantee Program +γ_{17} Located in Export Processing Zone+ γ_{18} Property Rights + γ_{19}Dispute Resolution in Courts + γ_{20}CEO Education Level + γ_{21}Politically Connected CEO.

In Panel B: The first step is: Access Dummy = $\alpha_0 + \beta_1$ Collateral + β_2Small + β_3 Medium + β_4Large + β_5Very Large + β_6 Middle-Age + β_7 Old + β_8Corporations + β_9Collectives + β_{10}State Ownership + β_{11}Competition Dummies + β_{12}City Dummies. The second step is: Sales/Reinvestment Rate/Productivity Growth = $\alpha_1 + \gamma_1$Access Dummy+ γ_2Small + γ_3 Medium + γ_4Large + γ_5Very Large + γ_6 Middle-Age + γ_7 Old + γ_8Corporations + γ_9Collectives + γ_{10}State Ownership + γ_{11}Competition Dummies + γ_{12}City Dummies.

Sales Growth is defined as the log change in total sales and is computed from 2001 to 2002. Labor Productivity Growth is defined as the log change in productivity where labor productivity is (Sales-Total Material Costs)/Total Number of Workers. Labor Productivity Growth is computed from 2001 to 2002. Reinvestment Rate is the share of net profits re-invested in the establishment in 2002. Bank Dummy takes the value 1 if the firm said it had a loan from a bank or financial institution and 0 if the firm said it had no bank loan and had no overdraft facility or line of credit. Access Dummy is a dummy variable that takes the value 1 if the firm had access to a bank loan in any year prior from 1990-2001 and 0 otherwise. The identifying variable is Collateral which is a dummy variable that takes the value 1 if the financing required a collateral or a deposit and 0 if the financing did not require collateral or if the firm did not apply for a loan because of stringent collateral requirements or if the firm was rejected for a loan because of the lack of collateral. Firm Size Dummies are quintiles of total firm sales in 1999. Small, Medium, Large and Very Large dummies take the value 1 if the firm is in the second, third, fourth or fifth quintile respectively firm sales. Middle-age is a dummy variable that takes the value 1 if the firm is between 5 and 20 years of age and Old is a dummy variable that takes the value 1 if the firm is greater than 20 years old. Corporation Dummy takes the value 1 if the firm is organized as a corporation (public or private) and 0 otherwise. Cooperatives/Collectives Dummy takes the value 1 if the firm is organized as a Cooperative or a Collective. State Ownership Dummy takes the value 1 if the state owns more than 50% of the company. 4 to 6 Competitors, 7 to 15 Competitors, 16 to 100 Competitors and Over 100 Competitors are dummy variables that take the value 1 if the firm has the corresponding number of competitors in its main business line in the domestic market. The omitted category is 1 to 3 Competitors. Bank Corruption is a dummy variable that takes the value 1 if the firm reported that a gift or informal payment was expected in its dealing with bank officials and loan officers and 0 otherwise. Government Help dummy takes the value 1 if a government agency or official assisted the firm in obtaining bank financing. Loan from Group or Holding Company takes the value 1 if the firm was a member of a group or a holding company that provided loan to the firm and 0 otherwise. Loan Guarantee Program takes the value 1 if the firm benefited from a loan guarantee program offered by loan guarantee companies. Located in Export Processing Zone takes the value 1 if the firm is located in an industrial park, science park or export processing zone and 0 otherwise. Property Rights Protection is the likelihood that the legal system will uphold the firm's contract and property rights in business disputes. CEO Education Level takes the values 1 to 4, 1 if the CEO had no education, 2 if the CEO had high-school, secondary school or primary school education, 3 if the CEO had an undergraduate education at home or abroad and 4 if the CEO had postgraduate education at home or abroad. Politically Connected CEO takes the value 1 if the CEO was a party secretary, deputy party secretary, party committee member or executive member or a party member and 0 if the CEO is not a party member. Columns 1 to 6 present results for the full sample and columns 7 to 12 present. Hazard Lambdas are reported for each of the second stages.

Panel A: Expanded Selection Model

	1	2	3	4	5	6	7	8
	Sales Growth [2001-2002]	Selection Equation	Sales Growth [2001-2002]	Selection Equation	Profit Reinvestment rate in 2002	Selection Equation	Labor Productivity Growth [2001-2002]	Selection Equation
Bank Dummy	0.278[c]		0.328[b]		0.242[a]		0.073	
	[0.145]		[0.144]		[0.075]		[0.191]	
Collateral		0.869[a]		0.860[a]		0.849[a]		0.827[a]
		[0.088]		[0.089]		[0.092]		[0.104]
Sales Growth [1999-2001]			-0.278[a]	0.368[a]				
			[0.045]	[0.098]				
Bank Corruption	-0.058	-0.199	-0.066	-0.182	0.017	-0.204	0.087	-0.07

	1	2	3	4	5	6	7	8
	Sales Growth [2001-2002]	Selection Equation	Sales Growth [2001-2002]	Selection Equation	Profit Reinvestment rate in 2002	Selection Equation	Labor Productivity Growth [2001-2002]	Selection Equation
	[0.066]	[0.144]	[0.065]	[0.145]	[0.034]	[0.150]	[0.082]	[0.163]
Government Help Dummy	0.003	0.324[a]	0.016	0.307[a]	0.04	0.311[a]	-0.026	0.393[a]
	[0.054]	[0.100]	[0.053]	[0.101]	[0.027]	[0.104]	[0.068]	[0.114]
Loan from Group/Holding Co.	0.013	0.272[c]	0.04	0.243	-0.086[b]	0.282[c]	0.028	0.309[c]
	[0.076]	[0.147]	[0.075]	[0.148]	[0.039]	[0.157]	[0.099]	[0.175]
Loan Guarantee Program	-0.024	0.127	-0.019	0.112	-0.013	0.105	0.017	0.059
	[0.054]	[0.111]	[0.053]	[0.112]	[0.027]	[0.116]	[0.067]	[0.129]
Located in an Export Processing	-0.036	0.237[b]	-0.01	0.193[c]	0.039	0.219[b]	-0.077	0.299[a]
	[0.048]	[0.100]	[0.048]	[0.101]	[0.025]	[0.104]	[0.061]	[0.114]
Property Rights Protection	0	0	0	0	0	0	0	0.002
	[0.001]	[0.001]	[0.001]	[0.001]	[0.000]	[0.001]	[0.001]	[0.001]
CEO Education Level	0.012	0.047	0.036	0.017	-0.005	0.065	-0.054	0.04
	[0.036]	[0.077]	[0.036]	[0.078]	[0.019]	[0.082]	[0.048]	[0.093]
Politically Connected CEO	-0.051	0.1	-0.046	0.099	0.029	0.086	0.016	0.098
	[0.045]	[0.100]	[0.045]	[0.101]	[0.023]	[0.104]	[0.058]	[0.115]
Small	-0.187[a]	0.148	-0.294[a]	0.293	0.056	0.109	-0.105	0.047
	[0.071]	[0.176]	[0.073]	[0.185]	[0.036]	[0.181]	[0.102]	[0.225]
Medium	-0.229[a]	0.261	-0.356[a]	0.450[b]	0.044	0.229	-0.027	0.212
	[0.071]	[0.170]	[0.074]	[0.182]	[0.036]	[0.174]	[0.098]	[0.210]
Large	-0.235[a]	0.481[a]	-0.385[a]	0.692[a]	0.011	0.442[b]	-0.071	0.338
	[0.076]	[0.169]	[0.081]	[0.184]	[0.038]	[0.173]	[0.101]	[0.206]
Very Large	-0.386[a]	0.818[a]	-0.566[a]	1.060[a]	0.022	0.803[a]	-0.092	0.728[a]
	[0.087]	[0.176]	[0.095]	[0.193]	[0.045]	[0.180]	[0.116]	[0.216]
Medium	0.014	-0.053	-0.036	0.021	0.004	-0.047	-0.146[b]	-0.134
	[0.053]	[0.117]	[0.053]	[0.120]	[0.027]	[0.121]	[0.069]	[0.139]
Old	-0.001	0.062	-0.067	0.145	-0.059[c]	0.055	-0.119	-0.001
	[0.068]	[0.148]	[0.069]	[0.151]	[0.035]	[0.154]	[0.089]	[0.178]
Corporations	-0.031	0.146	-0.027	0.144	0.062[b]	0.123	-0.031	0.125
	[0.048]	[0.101]	[0.047]	[0.101]	[0.024]	[0.106]	[0.061]	[0.116]
Cooperative	-0.179[a]	0.011	-0.215[a]	0.066	0.01	0.038	-0.012	0.155
	[0.063]	[0.143]	[0.062]	[0.145]	[0.032]	[0.148]	[0.082]	[0.170]
State	-0.016	0.062	-0.032	0.084	-0.007	0.115	0.032	0.1
	[0.055]	[0.117]	[0.055]	[0.118]	[0.029]	[0.124]	[0.074]	[0.144]
4 to 6 Competitors	0.07	0.433[b]	0.061	0.427[b]	0.052	0.471[b]	-0.144	0.438[b]
	[0.086]	[0.180]	[0.085]	[0.181]	[0.044]	[0.189]	[0.106]	[0.203]
7 to 15 Competitors	-0.004	0.329[c]	-0.031	0.362[b]	0.021	0.368[b]	-0.154	0.448[b]
	[0.081]	[0.175]	[0.081]	[0.176]	[0.042]	[0.183]	[0.102]	[0.199]

	1	2	3	4	5	6	7	8
	Sales Growth [2001-2002]	Selection Equation	Sales Growth [2001-2002]	Selection Equation	Profit Reinvestment rate in 2002	Selection Equation	Labor Productivity Growth [2001-2002]	Selection Equation
16 to 100 Competitors	-0.038	0.25	-0.071	0.278[c]	0.021	0.295[c]	-0.133	0.256
	[0.074]	[0.162]	[0.073]	[0.163]	[0.038]	[0.171]	[0.092]	[0.186]
Over 100 Competitors	-0.136[c]	0.236	-0.157[b]	0.256	0.026	0.247	-0.230[b]	0.322[c]
	[0.071]	[0.158]	[0.070]	[0.159]	[0.036]	[0.167]	[0.092]	[0.185]
Hazard Lambda	-0.107		-0.028		-0.116[b]		-0.061	
	[0.089]		[0.078]		[0.046]		[0.117]	
Observations	1229	1229	1225	1225	1118	1118	874	874

[c] significant at 10%; [b] significant at 5%; [a] significant at 1%

Panel B: Access to finance

	1	2	3	4	5	6
	Sales Growth [2001-2002]	Selection Equation	Profit Reinvestment rate in 2002	Selection Equation	Labor Productivity Growth [2001-2002]	Selection Equation
Access Dummy	0.842[b]		0.652[b]		0.618	
	[0.403]		[0.262]		[0.455]	
Collateral		0.263[a]		0.221[a]		0.289[a]
		[0.072]		[0.076]		[0.085]
Small	-0.172[b]	-0.165	0.120[a]	-0.185	-0.083	-0.06
	[0.073]	[0.123]	[0.045]	[0.130]	[0.094]	[0.163]
Medium	-0.251[a]	-0.008	0.065	0.047	-0.078	0.068
	[0.069]	[0.122]	[0.042]	[0.128]	[0.092]	[0.157]
Large	-0.226[a]	-0.086	0.064	-0.078	-0.127	-0.074
	[0.070]	[0.123]	[0.041]	[0.129]	[0.090]	[0.157]
Very Large	-0.283[a]	-0.177	0.127[a]	-0.163	-0.064	-0.135
	[0.074]	[0.129]	[0.044]	[0.136]	[0.094]	[0.164]
Medium	-0.087	0.290[a]	-0.063	0.287[a]	-0.171[b]	0.267[b]
	[0.066]	[0.098]	[0.040]	[0.102]	[0.080]	[0.120]
Old	-0.136	0.363[a]	-0.133[a]	0.353[a]	-0.132	0.310[b]
	[0.085]	[0.120]	[0.051]	[0.125]	[0.098]	[0.147]
Corporations	0.022	-0.132	0.109[a]	-0.136	-0.024	-0.147
	[0.050]	[0.083]	[0.030]	[0.087]	[0.060]	[0.098]
Cooperative	-0.157[b]	0.04	0.012	0.045	-0.012	0.023

	1	2	3	4	5	6
	Sales Growth [2001-2002]	Selection Equation	Profit Reinvestment rate in 2002	Selection Equation	Labor Productivity Growth [2001-2002]	Selection Equation
	[0.064]	[0.108]	[0.038]	[0.114]	[0.077]	[0.129]
State	-0.042	0.048	-0.012	0.041	0.05	0.064
	[0.057]	[0.094]	[0.034]	[0.100]	[0.074]	[0.119]
4 to 6 Competitors	0.108	-0.168	0.101^c	-0.19	-0.04	-0.131
	[0.089]	[0.151]	[0.054]	[0.158]	[0.104]	[0.174]
7 to 15 Competitors	0.013	-0.01	0.023	-0.068	-0.1	0.111
	[0.083]	[0.142]	[0.050]	[0.149]	[0.099]	[0.163]
16 to 100 Competitors	-0.02	-0.042	0.036	-0.062	-0.082	-0.037
	[0.076]	[0.130]	[0.045]	[0.137]	[0.091]	[0.152]
Over 100 Competitors	-0.096	-0.124	0.046	-0.138	-0.133	-0.049
	[0.074]	[0.124]	[0.044]	[0.131]	[0.089]	[0.148]
Hazard Lambda	-0.523^b		-0.4^b		-0.413	
	[0.244]		[0.158]		[0.276]	
Observations	1566	1566	1413	1413	1102	1102

^{c} significant at 10%; ^{b} significant at 5%; ^{a} significant at 1%

Table 7: Bank Financing and Firm Performance – Additional Robustness

In Panel A, we report estimators from Propensity Score matching. The variables used to determine the propensity score are Size Dummies, Age Dummies, City Dummies, Corporation dummy, Collectives dummy and State Ownership dummy. The standard errors reported are bootstrapped standard errors from 50 replications. Columns 1-3 report Average Treatment Effects on the Treated (ATT) from the radius matching estimator and columns 4-6 report ATT from the kernel matching estimators.

In Panel B., in column 1 we report OLS regressions similar to column 1 of Table 4 but for a reduced sample of firms which report no government help in obtaining bank finance. In columns 2-4, 2-stage Instrumental Variable regressions are used. The first stage regression is: Bank Dummy = $\alpha_0 + \beta_1$ Collateral + β_2 Government Help dummy + β_3Small + β_4Medium + β_5Large + β_6Very Large + β_7Middle-Age + β_8 Old + β_9Corporations + β_{10}Collectives + β_{11}State Ownership + β_{12}Competition Dummies + β_{13}City Dummies + e. The second stage is: Sales Growth = $\alpha_1 + \gamma_1$BankDummy (predicted value from the first stage) + γ_2Small + γ_3 Medium + γ_4Large + γ_5Very Large + γ_6 Middle-Age + γ_7 Old + γ_8Corporations + γ_9Collectives + γ_{10}State Ownership + γ_{11}Competition Dummies + γ_{12}City Dummies + u.

In Panel C, we report OLS regressions similar to Table 4 using the following specification: Sales Growth = $\alpha_1 + \gamma_1$Did Not Apply for a Bank Loan+ γ_2Small + γ_3 Medium + γ_4Large + γ_5Very Large + γ_6 Middle-Age + γ_7 Old + γ_8Corporations + γ_9Collectives + γ_{10}State Ownership + γ_{11}Competition Dummies + γ_{12}City Dummies + u.

Sales Growth is defined as the log change in total sales and is computed from 2001 to 2002. Reinvestment Rate is the share of net profits re-invested in the establishment in 2002. Labor Productivity Growth is defined as the log change in productivity where labor productivity is (Sales-Total Material Costs)/Total Number of Workers. Labor Productivity Growth is computed from 2001 to 2002. Bank Dummy takes the value 1 if the firm said it had a loan from a bank or financial institution and 0 if the firm said it had no bank loan and had no overdraft facility or line of credit. The identifying variables are Collateral which is a dummy variable that takes the value 1 if the financing required a collateral or a deposit and 0 if the financing did not require collateral or if the firm did not apply for a loan because of stringent collateral requirements or if the firm was rejected for a loan because of the lack of collateral; and Government Help dummy which takes the value 1 if a government agency or official assisted the firm in obtaining bank financing. Firm Size Dummies are quintiles of total firm sales in 1999. Small, Medium, Large and Very Large dummies take the value 1 if the firm is in the second, third, fourth or fifth quintile respectively of firm sales. Middle-age is a dummy variable that takes the value 1 if the firm is between 5 and 20 years of age and Old is a dummy variable that takes the value 1 if the firm is greater than 20 years old. Corporation Dummy takes the value 1 if the firm is organized as a corporation (public or private) and 0 otherwise. Cooperatives/Collectives Dummy takes the value 1 if the firm is organized as a Cooperative or a Collective. State Ownership Dummy takes the value 1 if the state owns more than 50% of the company. 4 to 6 Competitors, 7 to 15 Competitors, 16 to 100 Competitors and Over 100 Competitors are dummy variables that take the value 1 if the firm has the corresponding number of competitors in its main business line in the domestic market. The omitted category is 1 to 3 Competitors. Did Not Apply for a Bank Loan takes the value 1 if the firm reported not applying for a bank loan and 0 if the firm reported it had a bank loan

Panel A: Propensity Score Matching.

	1	2	3	4	5	6
	Radius Matching			Kernel Matching		
	Sales Growth [2001-2002]	Profit Reinvestment rate in 2002	Labor Productivity Growth [2001-2002]	Sales Growth [2001-2002]	Profit Reinvestment rate in 2002	Labor Productivity Growth [2001-2002]
Average Treatment Effect on the Treated (ATT)	0.060[c]	0.098[a]	0.001	0.065[c]	0.075[a]	0.005
	[0.036]	[0.021]	[0.049]	[0.035]	[0.020]	[0.052]

[c] significant at 10%; [b] significant at 5%; [a] significant at 1%

Panel B: Government Help

	OLS Drop firms that report government help	Instrumental Variables Full Sample		
	1	2	3	4
	Sales Growth [2001-2002]	Sales Growth [2001-2002]	Sales Growth [2001-2002]	Sales Growth [2001-2002]
Instruments	-	*Collateral*	*Government Help*	*Collateral and Government Help*
Bank Dummy	0.100[b]	0.324[a]	0.080	0.296[b]
	[0.0398]	[2.675]	[0.398]	[2.527]
Observations	1799	1549	2117	1531
R-squared	0.033			
Durbin-Wu-Hausman Chi-Sq Test		4.2825 (0.0385)	0.0003 (0.9851)	3.5129 (0.0609)
First Stage F Stat		157.63 (0.000)	50.67 (0.0000)	87.55 (0.0000)
Overidentification Test:		-	-	0.662 (0.4157)
Conditional LR (CI, p-value)		[.0871, .5726] (0.0074)	[-.3283, .4895] (0.6930)	[.0656, .5358] (0.0119)

[c] significant at 10%; [b] significant at 5%; [a] significant at 1%

Panel C: Firms that did not apply for a Bank Loan

	1	2	3	4	5	6
	Sales Growth [2001-2002]	Profit Reinvestment rate in 2002	Labor Productivity Growth [2001-2002]	Sales Growth [2001-2002]	Profit Reinvestment rate in 2002	Labor Productivity Growth [2001-2002]
	Full Sample			Drop Public Corporations and State Owned Companies		
Did Not Apply for a Bank Loan	-0.084[b]	-0.074[a]	0.017	-0.076[c]	-0.079[a]	-0.001
	(0.043)	(0.024)	(0.066)	(0.044)	(0.029)	(0.072)
Observations	1432	1271	945	1048	922	736
R-squared	0.046	0.078	0.032	0.054	0.101	0.050

[c] significant at 10%; [b] significant at 5%; [a] significant at 1%

Table 8: Financing Proportions of New Investments and Working Capital – Bank Financing versus Informal Financing

The estimated model is: Sales Growth/Reinvestment Rate/Productivity Growth = α + β_1Bank Financing or Self Financing1 or Self Financing2 + β_2Small + β_3 Medium + β_4Large + β_5Very Large + β_6 Mid-Age + β_7Old + β_8Corporations + β_9Collectives + β_{10}State Ownership + β_{11}Competition Dummies + β_{12}City Dummies.

Sales Growth is defined as the log change in total sales and is computed from 2001 to 2002. Labor Productivity Growth is defined as the log change in productivity where labor productivity is (Sales-Total Material Costs)/Total Number of Workers. Labor Productivity Growth is computed from 2001 to 2002. Reinvestment Rate is the share of net profits re-invested in the establishment in 2002. Bank Financing Dummy takes the value 1 if the firm said it had a loan from a bank or financial institution AND (bank financing of new investments was greater than 50% OR bank financing of working capital was greater than 50%). Bank Financing takes the value 0 if (the firm said it had no loan from a bank or financial institution OR said it had no overdraft facility or line of credit) AND (bank financing of new investments was equal to 0% AND bank financing of working capital was equal to 0%). Self Financing1 takes the value 1 if the sum of informal financing and other financing of new investments was greater than 50% OR the sum of informal financing and other financing of working capital was greater than 50%. Self Financing1 takes the value 0 if the sum of informal and other financing of new investments is equal to 0 % AND the sum of informal and other financing of working capital is equal to 0%. Self Financing2 takes the value 1 if the sum of internal, informal, family, and other financing of new investments was greater than 50% OR the sum of internal, informal, family and other financing of working capital was greater than 50%. Self Financing2 takes the value 0 if the sum of internal, informal, family and other financing of new investments is equal to 0 % AND the sum of internal, informal, family and other financing of working capital is equal to 0%. Firm Size Dummies are quintiles of total firm sales in 1999. Small, Medium, Large and Very Large dummies take the value 1 if the firm is in the second, third, fourth or fifth quintile respectively of firm sales. Mid-age is a dummy variable that takes the value 1 if the firm is between 5 and 20 years of age and Old is a dummy variable that takes the value 1 if the firm is greater than 20 years old. Corporation Dummy takes the value 1 if the firm is organized as a corporation (public or private) and 0 otherwise. Cooperatives/Collectives Dummy takes the value 1 if the firm is organized as a Cooperative or a Collective. State Ownership Dummy takes the value 1 if the state owns more than 50% of the company. 4 to 6 Competitors, 7 to 15 Competitors, 16 to 100 Competitors and Over 100 Competitors are dummy variables that take the value 1 if the firm has the corresponding number of competitors in its main business line in the domestic market. The omitted category is 1 to 3 Competitors. We use OLS regressions with robust standard errors.

Panel A: Bank Financing

	1	2	3	4	5	6
	Full Sample			Drop Public Corporations and State Owned Companies		
	Sales Growth [2001-2002]	Profit Reinvestment rate in 2002	Labor Productivity Growth [2001-2002]	Sales Growth [2001-2002]	Profit Reinvestment rate in 2002	Labor Productivity Growth [2001-2002]
Bank Financing Dummy	0.092[c]	0.07[b]	0.045	0.052	0.074[c]	0.06
	[0.056]	[0.031]	[0.076]	[0.058]	[0.038]	[0.077]
Observations	895	809	621	659	592	480
R-squared	0.063	0.099	0.039	0.068	0.103	0.058

[c] significant at 10%; [b] significant at 5%; [a] significant at 1%

Panel B: Self Financing

	1	2	3	4	5	6	7	8	9	10	11	12
				Full Sample					Drop Public Corporations and State Owned Companies			
	Sales Growth [2001-2002]	Sales Growth [2001-2002]	Profit Reinvestment rate in 2002	Profit Reinvestment rate in 2002	Labor Productivity Growth [2001-2002]	Labor Productivity Growth [2001-2002]	Sales Growth [2001-2002]	Sales Growth [2001-2002]	Profit Reinvestment rate in 2002	Profit Reinvestment rate in 2002	Labor Productivity Growth [2001-2002]	Labor Productivity Growth [2001-2002]
Self Financing1 (Informal+Other)	-0.04		-0.126[a]		0.092		-0.026		-0.127[a]		0.084	
	[0.039]		[0.020]		[0.059]		[0.050]		[0.024]		[0.064]	
Self Financing2 (Informal+Other+ Internal+Family)		-0.015		0.045[c]		0.154[b]		0.006		0.043		0.151[b]
		[0.048]		[0.024]		[0.072]		[0.058]		[0.030]		[0.075]
Observations	1363	1372	1203	1207	952	956	984	992	874	877	719	722
R-squared	0.056	0.055	0.110	0.103	0.041	0.042	0.06	0.058	0.111	0.104	0.048	0.05

[c] significant at 10%; [b] significant at 5%; [a] significant at 1%