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# Market Facilitation by Local Government and Firm Efficiency

## Evidence from China

*Robert Cull*
*Lixin Colin Xu*
*Xi Yang*
*Li-An Zhou*
*Tian Zhu*

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## Abstract

This paper uses data from a large survey of Chinese firms to investigate whether local government efforts to facilitate market development improve firm efficiency. Both government provision of information about products, markets, and innovation and government assistance in arranging loans are positively associated with firm efficiency. Those private firms with weak access to and knowledge of financial, input, and product markets benefit most from such assistance. These patterns are robust across multiple estimation approaches. Case studies of specific types of market facilitation by local governments are provided. The evidence is consistent with the notion that government facilitation can help some firms overcome market failures in the early stages of development. The paper argues that changing fiscal dynamics that forced local governments to become increasingly self-reliant in generating revenue and a government promotion system based on local economic performance compelled these efforts at market facilitation.


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The authors may be contacted at at lxu1@worldbank.org or rcull@worldbank.org.

# Market Facilitation by Local Government and Firm Efficiency: Evidence from China[1]

**Robert Cull**

**Lixin Colin Xu**

**Xi Yang**

**Li-An Zhou**

**Tian Zhu**

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The affiliations of the authors: Robert Cull and L. Colin Xu, World Bank; Xi yang, John Hopkins University; Li-An Zhou, Peking University; Tian Zhu, China Europe International Business School.

## 1. Introduction

The great divergence in economic performance among developing and transition economies in the past several decades has invigorated the debates on the proper role of the government in economic development, especially in the context of the so-called East Asian miracle (Wade, 1990; World Bank, 1993; Page, 1994; Aoki, et al., 1996; Stiglitz, 1996, 2003; Shleifer, 1997; Stiglitz and Yusuf, 2001; Easterly, 2001; Rodrik, 2008a and 2008b; Brown et al., 2009; Lin and Monga, 2010). As Rodrik (2008b) points out, in theory there is ample room for governments to correct the rampant market failures in a developing country, but identifying the conditions under which government intervention is likely to improve economic performance remains an open empirical issue.

A vast literature on the role of government in economic development focuses mostly on national level government policies. However, in this paper we look at the issue of local government activism in economic development. Using data from a large survey of Chinese firms, we investigate what determines local government activism, and whether or when it contributes to firm efficiency. We focus on two specific roles that local Chinese governments have played in supporting local businesses. The first is an informational role in which local governments provide firms with helpful contacts or information on products, technologies or market opportunities. This role likely requires little extra cost for the government because much of the information supplied can be a side product of routine functions.

The second is a financial role in which the local government helps businesses to secure bank loans. This second role may be more controversial because a bank loan for one firm might be allocated more efficiently to another firm in the absence of government intervention. In China's case, bank loan decisions became more centralized after the Asian financial crisis in 1998, and thus the influence of local governments on loan decisions has waned. Local governments cannot dictate that a state-owned national bank lend to a specific firm, but only act as a go-between or as a guarantor for the firm. Local government facilitation may help secure loans for firms that may have promising businesses but cannot get sufficient credit, perhaps due to the lack of collateral or rigid national level bank policies that are poorly adapted to local situations. On the other hand, it may also prop up inefficient firms, especially SOEs. And indeed,

direct interventions in credit markets by governments have generally not been a reliable means of improving firm efficiency.[2] Therefore, it remains an empirical question whether loan facilitation by local governments in China improved firm efficiency.

In a nutshell, we find that both forms of local government activism were associated with higher firm productivity in our sample period, and the effects varied with local income level, industry and firm ownership. Specifically, we find that government activism was helpful in relatively poorer regions and in industries that sold more to the domestic market, but that also relied heavily on innovation. Bank loan facilitation was also especially useful for non-state firms. These are the types of firms that were likely to have poor access to financial, product, and input markets, and thus stood to benefit most from such forms of market facilitation. These results are therefore consistent with a conditional proposition that government activism can help mitigate market failures when and where they are severe.

Our study is also closely related to the large literature on the role of local governments in the rapid growth of China's collectively owned township-village enterprises (TVEs) in the 1980s and early 1990s. Many authors (Byrd and Lin, 1990; Chang and Wang, 1994; Che and Qian, 1998a, 1998b; Jin and Qian, 1998; Li, 1996; Nee, 1992; Song and Du, 1990; Walder, 1995a and 1995b) argue that local governments contributed critical inputs, such as land, initial collective assets, political connections and human capital to these collective enterprises, helped in securing loans from state-owned banks and sometimes provided political protection for these firms against the predatory behavior of the state.

Even after the mass privatization of TVEs and small state-owned enterprises in the mid-1990s, local governments remained active players in China's local economies (Xu, 2011; Zhou , 2009). Many attribute China's local government activism to the fiscal policy reforms that provided strong financial incentives for local governments to promote economic growth (Wong, 1992, 1997; Oi, 1992, 1999; Weingast et al., 1995; Li, 1998; Berkowitz and Li, 2000). Several authors have characterized the Chinese government as a "helping hand" to business firms in contrast to the Russian government as the "grabbing hand" during the transition from planned to market economy (Frye and Shleifer, 1997; Li, 1998; Brown et al., 2009). By and large, this literature has viewed the

[2] See World Bank (2008) for an overview of the evidence.

role of local governments in a positive light given the strong record of Chinese GDP growth. But firm-level micro-econometric studies on whether and how local governments aided economic development are rare, in part because it is difficult to identify and measure specific government interventions at the local level and to uncover firm-level information on when and how those interventions provided assistance. Ours is, therefore, the first micro-level study to our knowledge of China that attempts to link specific forms of market facilitation by local governments to firm-level efficiency.

The rest of the paper is organized as follows. Section 2 describes the data and variables, while Section 3 presents the main analysis and results. Although the associations we find are strong ones, and the patterns indicate that the firms least equipped to access formal markets benefited most from these local government interventions, the plausibility of our interpretation should not rest on regressions alone. In Section 4, therefore, we provide detailed case study descriptions of how a handful of local government initiatives – both informational and financial – functioned during this period. Section 5 concludes.

## 2. Data and Variables

Our data come from a survey of firms for the period between 2000 and 2002, conducted in early 2003 by the World Bank on the investment climate in China. Firms were drawn from 18 cities that were selected to achieve balanced representation across five regions: Northeast (including Benxi, Changchun, Dalian, and Harbin), coastal (including Hangzhou, Jiangmen, Shenzhen, and Wenzhou), central (including Changsha, Nanchang, Wuhan, and Zhenzhou, southwest (including Chongqing, Guiyang, Kunming, and Nanning), and northwest (including Langzhou and Xi'an). The total sample is composed of 2,400 firms, 100 or 150 from each city.

The questionnaire has two parts. Part one, based on interviews with the manager of a firm, contains questions on general information about the firm and the manager, innovation, market environment, relationships with clients and suppliers, location of manufacturing plant, relations with government, and international trade. Part two is based on interviews with the firm's accountant and personnel manager, who provided quantitative information on production, costs, employee training, schooling, and wages. While most of the qualitative questions pertained only to the year 2002, many quantitative questions also requested information for 2000 to 2002.

Therefore, in the regressions the qualitative variables are time-invariant, while quantitative ones vary over 2000-2002.

Firms were sampled randomly subject to a few constraints. First, the survey sampled only the following industries: for manufacturing, apparel and leather goods, electronic equipment, electronic components, consumer products, and vehicles and vehicle parts; for services, accounting and related services, advertising and marketing, business logistics services, communication services, and information technology services.[3] Second, the size restriction of firms as measured by number of employees was pre-specified.[4] Once these constraints were roughly satisfied, the surveyors randomly drew the required number of firms from an electronic list of firms in that city. The data contain domestic private firms, foreign firms, and state-owned enterprises. State-owned firms are those firms with a positive share of state ownership,[5] foreign firms are those with positive foreign ownership, and domestic private firms constitute the rest of the sample.

The two key variables for government activism are: *Info Facilitation*, which is based on the answer to the survey question regarding whether the firm obtained information on product and technology advances from the government, and *Loan Help*, which is based on the answer to the question regarding whether the government offered assistance in obtaining bank loans. We call these government facilitation variables throughout.

We have a series of variables that act as proxies for the local institutional environment, which may be correlated with both government facilitation and firm efficiency. We need to control for these variables in order to better isolate the effect of government help on firm efficiency. Following Acemoglu and Johnson (2003), we separate the property rights variables into two groups: those that measure the risk of government expropriation and those that measure the ease and reliability of contract enforcement.[6] *First*, for contract enforcement, we have *the*

[3] In certain cities, a few additional industries were included because of the inability to sample a sufficient number of firms.

[4] For manufacturing (service) firms, the minimum number of employees is 20 (15) employees. When there were not sufficient firms from a particular sector in a city, the size constraint was loosened.

[5] The results based on a 50% cutoff in state ownership are almost identical. Only 3% of the firms in the sample had state ownership greater than zero but less than 50%.

[6] Acemouglu and Johnson (2005) unbundle institutions into "property rights institutions" and "contracting institutions." Property rights institutions capture how much private property is secure from the "grabbing hand" of the state, for example through outright expropriation or bribe extraction. Contracting institutions capture the effectiveness of institutions that are used to resolve disputes between private contracting parties, such as the courts and the judicial system. Based on cross-country evidence, they find that property rights institutions tend to be more

*property rights protection index*, which is based on a firm's answer to the following question: Of all the commerce or other conflicts that the company has experienced, what is the likelihood that its contractual or property rights are protected by the legal system? This variable ranges from 0 to 1, with a higher value implying better protection of property rights. A related measure is court development, proxied by the share of a firm's disputes that are resolved by the court system. A higher value of *court development* implies a stronger legal system and better protection of property rights. As a proxy for corruption and government expropriation, we rely on the share of entertainment and travelling costs over sales (ETC). Cai, Fang and Xu (2011) provide evidence that this is a good proxy for corruption in China: ETC is higher in regions that feature higher tax burdens and worse government services, presumably because it was spent to reduce tax burdens and to improve government services; the average ETC level in a locality also has a negative relationship with firm efficiency, but the effect differs across regions, with less pronounced negative effects in regions with higher taxes and worse government services.

Since the efficiency of government bureaucracy may also affect firm efficiency, we include three additional control variables. We use three variables to measure local government efficiency.[7] *Government Efficient Services* is an index that reflects the manager's assessment about the share of government officials that offer efficient services. *Official Ability* is an index that reflects the manager's assessment of the share of government officials that are competent. *Official Helping Firms* is an index that reflects the manager's assessment of the share of government officials that help rather than hinder firm development. Finally, leadership turnover has been frequent in Chinese local governments—the typical party secretary, the top leader of a locality, only has a 3 to 4 year tenure. This may have an effect on local economic development (Lu and Liu 2013). To the extent that longer horizons for local government leaders may lead to more efficient government policies and actions that internalize the benefits of current efforts or investments, or alternatively behave as "stationary bandits" in the words of Mansur Olson (Olson 2000), it may be important to capture the time horizon of local party secretaries. We thus create

important than contracting institutions in facilitating economic development. Their interpretation is that it is easier for private parties to use alternative mechanisms to get around the contracting issues, but it is harder to avoid government expropriation.

[7] All three variables are based on direct survey questions posed in the survey.

a measure, *PS Long Tenure*, a dummy variable that equals one if the current party secretary has held his/her position for three or more years.[8]

In our main regression, we also control for variables measuring a locality's financial development because, presumably, government help with loans as well as information may be more useful for firms in a locality or industry that has poor access to finance. There is a large literature on the linkages between access to finance and economic development (see Levine 1997, 2005). While most of this literature focuses on access to formal finance such as bank loans and overdraft facilities, there is a growing literature that examines the impact of access to informal finance (Allen, Qian and Qian 2005; Cull and Xu 2005, Cull, Xu and Zhu 2011). Following this literature, we include access to both formal and informal finance, and investigate whether they have different effects on firm efficiency. Access to formal finance is measured as the city-industry share of firms with access to bank loans. Access to informal finance is measured as the city-industry average of trade credits granted to other firms. Trade credit by itself provides short-term financing for working capital. Some observers of the Chinese economy suggest that trade credit is an indirect means of channeling bank loans to profitable firms (Allen, Qian and Qian 2005; Cull, Xu and Zhu 2011).

One might expect little variation in survey responses in an authoritarian country such as China. However, the means and standard deviations reported in Table 2 indicate wide variation in our key variables. About 16 percent of private firms received loan help, and 35 percent of firms received government information facilitation. About 64 percent of firms view property rights protection in conflict resolution as reasonable, but only 8 percent of disputes are resolved in the court. The majority of disputes are therefore settled without resorting to the formal legal system. On average, entertainment and travelling costs account for 3.1 percent of sales, with a standard deviation of 2.4 percentage points. There are indications that firm managers on average have reservations about the quality of the state machinery: roughly 35% of managers think the government offers efficient services; 51% of the government officials they have encountered are thought competent; and only 34% of government officials are viewed as helping rather than hindering firm development.

State owned firms comprise 22.7% of the sample, domestic private, 36.8%, and foreign, 40.5%. This diversity in ownership allows us to examine whether government facilitation

[8] The default is thus that the party secretary has held his/her position for one to two years.

differentially affects the efficiency of different types of firms. State and non-state firms differed on several dimensions (see Table 3). For example, state firms were significantly less productive, with a disadvantage in labor productivity of 35 log points. State firms were more likely to receive government assistance in securing loans (16.8% vs. 15.3%), and substantially more likely to receive information facilitation (42% vs. 32.8%). They also had a stronger sense of property rights protection: they spent less on ETC, had higher self-reported scores on the index of property rights protection, and used courts substantially more (10.5% vs. 7.2%). Interestingly, and perhaps surprisingly, in judging the efficiency of the state machinery, the state and the non-state sectors reached similar conclusions based on the indices of government efficiency, official ability, and officials helping.

Since we have a keen interest in understanding how the role of government facilitation differs in poor and rich regions, Table 4 reports the summary statistics for these two types separately. Firms in the poor regions were substantially less productive, with labor productivity lagging behind on average by 71 percentage points. They received slightly less loan assistance, but a similar amount of information facilitation. They spent more on ETC and found government officials to be less helpful. In contrast, firms in the poor and rich regions reported similar property rights protection, had similar tendencies to use the courts, and judged official efficiency and capacity similarly.

## 3. **Empirical Specifications, hypotheses, and results**

In this section, we first examine the key determinants of government facilitation to shed light on why the local governments supply (and firms demand) government facilitation. We then proceed to examine the relationship between government facilitation and firm efficiency.

### **Determinants of government facilitation**

While our ultimate purpose is to investigate the possible effect of government activism on firm efficiency, it is useful to understand what motivates governments to provide information and loan facilitation. To this end, we present a linear probability model in Table 5 that links *Loan Help* and *Information Facilitation* to (i) firm characteristics and industry dummies, (ii) CEO

characteristics, (iii) the local income level, (iv) the local institutional environment, and (v) the efficiency of government bureaucracy.[9]

At the simplest level, we can classify three possible theories of government facilitation. The first is *random facilitation* in which the local government facilitates loans and provides information randomly (and firms randomly seek such assistance). If this theory is true, we would expect no significant patterns in the relationship between government facilitation and the list of determinants mentioned earlier. A second theory is *facilitation in exchange for rents*. Similar to the capture theory (Stigler 1971, Peltzman 1976), this theory suggests that government grants information facilitation and loan help to firms that can provide more rents to the government. It would predict that government facilitation is more likely for larger firms because they can most affect employment (a key goal of the government), for state-owned firms in order to protect less efficient firms and due to their long-run relationships with the government, and in places with more corruption and worse institutions. The third theory is *facilitation for efficiency,* which posits that government facilitation is more likely where efficiency gains are likely to be greater. It implies a greater likelihood of government facilitation for younger firms who likely need more assistance, for non-state firms who tend to have less established relationships with state-owned banks, for larger firms in which the same facilitation may yield a larger benefit due to scale economies, for firms with stronger CEO leadership in which the same facilitation may yield a larger benefit, and in locations with better institutions since those institutions constrain government officials and channel government facilitation into more efficient activities.

Both the conjecture of facilitation in exchange for rents and that for efficiency imply that local leaders' tenure in their positions matters. Since local party secretaries tend to have short tenures, on average 3 to 4 years on the job (Lu and Liu 2013), more experienced secretaries may be better able to provide that facilitation. At the same time, party secretaries with longer tenures are also more likely to behave like stationary bandits to internalize the benefits of such facilitation (Olsen 2000). Under either scenario, government facilitation should be more likely in locations with longer-serving party secretaries.

The results in table 5 are mostly consistent with the facilitation-for-efficiency conjecture. Many variables related to firm characteristics and the local political and institutional environment are statistically significant, which refutes the random facilitation hypothesis.

[9] The results based on probit are very similar.

Consistent with the facilitation for efficiency conjecture, but inconsistent with the rent-seeking hypothesis, government facilitation is more likely for young, non-state firms that have stronger CEO incentives (such as managerial ownership and longer CEO tenure, that is, the number of years that the CEO has held his position), and are located in areas with better-developed court systems and longer-serving party secretaries. However, we also find that in locations with higher ETC expenditures—which are presumably more corrupt places (Cai, Fang and Xu 2011), or places with wiggle room for making deals between the government and firms (Hallward-Dreimier et al. 2010) —government facilitation is also more likely, which is consistent with the rent-seeking facilitation hypothesis. But this could also be consistent with the efficiency hypothesis if one adopts the "grease payment" argument that only the more efficient firms can afford to pay bribes to get the necessary government facilitation, and thus bribes represent an efficient mechanism for allocating government facilitation (Lui 1985; Bardhan 1997). Consistent with both the rent-seeking and the efficiency hypotheses, firms located in cities with party secretaries serving longer terms tend to receive more loan facilitation.

**The base regression specification and related empirical issues**

We now examine whether government facilitation is associated with improved firm efficiency. We rely on the following reduced form equation

$$\ln(LP_{ijt}) = \alpha + \delta_j + \beta_1' FIRM_{it} + \beta_2' \ln GDPPC_{it} + \beta_3 OWN_i + \beta_4' Z_{it} + \beta_5 InfoFacilitation_i + \beta_6' LoanHelp_i + \varepsilon_{it} \quad (1)$$

The subscripts *i, j* and *t* represent firm, industry and time, respectively. The dependent variable is log labor productivity (i.e., value added per capita). Since in many specifications we also include industry dummies and their interaction with log firm size and log capital-labor ratio, we are essentially using total factor productivity (TFP) as the dependent variable. The key variables are *Loan Help* and *Info Facilitation*. In the base specification, we control for industry dummies, firm characteristics including log firm age, log firm size, state and foreign ownership, log GDP per capita (at the city level), and a dummy variable indicating whether the local party secretary has had a lengthy tenure (i.e., three or more years). In sensitivity checks (discussed later), we control for more covariates, to test whether the estimates of our main coefficients remain robust.

A key empirical issue is that firm-level *Loan Help* and *Info Facilitation* may be endogenous. That is, firms that receive active government facilitation may differ systematically

from those that do not. A natural way to identify their effects is to find good instruments that are correlated with the two facilitation variables but are otherwise not determinants of firm efficiency, but unfortunately we were unable to find good candidates. Instead, we address the potential endogeneity of the two facilitation variables in several alternative ways.[10]

First, we do not directly use firm-level measures. Instead, we rely on city-industry averages of firms' answers to the relevant questions to gauge the local level of government facilitation. This city-industry mean based measure is less subject to the reverse causality issue associated with firm-level answers, and its effect on firm productivity should be viewed as resulting from the level of government activism within a particular industry in a locality, not necessarily from the direct government information or loan help received by the firm.

Second, to check for possible omitted variables, we control for additional determinants of firm efficiency, including CEO characteristics, local-level institutions, access to finance, and firm-level assessment of the efficiency of state machinery, and show that our key results remain robust.

Third, we conduct sub-sample analysis, and examine whether the effects of government facilitation are stronger in certain subsamples in which market failures are supposed to be more debilitating. Confirmation of that conjecture would render support for our basic hypothesis that active government facilitation may help firms in overcoming relevant market failures.

Finally, we rely on the Rajan-Zingales methodology to further ensure that the government facilitation effects are not due to omitted variables (Rajan and Zingales, 1998). Specifically, by controlling for city and industry dummy variables, we investigate whether the effects of government facilitation are more pronounced in industries that would be expected to benefit more from government facilitation. Those city and industry dummies are included to control for all time-invariant factors specific to the local and the industry level, such as human capital, culture, and governance. Our identification therefore comes from comparing firms in the same industry, but in different cities that feature distinct levels of government facilitation.

However, with observational data, endogeneity concerns can never be completely dismissed. This can be especially problematic when potential instruments are correlated through other channels in the residual of the performance equation (Bazzi and Clemens 2010; Morck and

[10] See also Dollar et al. 2006, Aterido et al. forthcoming; Xu 2011.

Yeung 2011). We thus rely on a large number of robustness checks, and try to offer a coherent argument to tie various findings together.

**Base results**

Table 6 presents the base results. Columns (1) and (2) use firm-level government facilitation variables directly; but our preferred results are in columns (3) and (4), because they use city-industry average values of the facilitation variables which, as pointed out earlier, are less subject to endogeneity concerns. Columns (1) and (3) report the labor productivity regressions. Columns (2) and (4) report TFP regressions: log labor productivity remains the dependent variable, but those models also control for industry dummies and their interaction with log capital-labor ratio and log labor. For columns (3) and (4), we cluster the standard errors at the city-industry level to avoid overstating the precision of our estimates (Moulton 1990).

The results consistently show that government facilitation is associated with higher productivity. In general, the results for labor productivity and TFP are qualitatively similar, though magnitudes for the facilitation variables are smaller in the TFP results, especially for Loan Help. This makes sense since Loan Help likely would affect capital intensity, and part of the effect of Loan Help on labor productivity is due to changes in capital intensity. Interestingly, the coefficients for the city-industry average government facilitation are much larger than for the firm-level government facilitation. This indicates that firm-level government facilitation is negatively correlated with determinants of productivity, and government facilitation is similar to a compensatory program in which the government picks lower productivity (but presumably high-potential) firms when allocating limited government facilitation resources. The magnitudes are large: in model 4, increasing local Loan Help by one standard deviation would increase TFP by 16 log points, and increasing local Info Facilitation by one standard deviation would increase TFP by 12 log points.

Since the results based on labor productivity and TFP tend to be qualitatively similar, and those based on TFP perhaps are more defensible (because TFP is net of input changes), we focus on TFP results in the rest of this paper. But the results in general are similar when using labor productivity. Since our focus is on government facilitation, we just briefly note here that the coefficients for our control variables indicate that total factor productivity tends to be higher in larger, younger firms, non-state (including foreign) firms, and in richer regions.

**Omitted Variable Bias**

As with any observational study, a concern is that the estimated coefficients for our key variables may merely reflect the effects of omitted variables. To consider this possibility, we first examine the robustness of our key results as we add more controls for CEO characteristics, access to finance, the institutional environment, and the efficiency of state machinery. The results are in Table 7.

Adding CEO characteristics has almost no effect on our estimates for the government facilitation variables (column 1). The coefficient for Loan Help changes from 1.142 to 1.141 and that for Info Facilitation from 0.61 to 0.60. Adding access to finance again changes the coefficients little (column (2)). The coefficient for Loan Help goes from 1.14 to 1.06; that of Info Facilitation from 0.61 to 0.58. Adding controls for the quality of the institutional environment and government efficiency reduces the coefficient for Loan Help to 0.95, and that for Info Facilitation to 0.46. We find some evidence that government efficiency in offering services improves firm efficiency, as shown in column (3) in Table 7. Adding all 3 new groups of variables (Model 4) changes the coefficient for Loan Help to 0.91, that of Info Facilitation to 0.39. In all cases, the two key variables remain statistically significant at the 10 percent level or better. The stability of our estimates is a good sign that our key variables likely reflect independent sources of variation, not the influence of omitted variables.

**Government facilitation and ownership**

Active government help may have differential effects based on firm ownership. State, domestic private, and foreign firms differ in many aspects, which may alter the costs and benefits of this assistance. SOEs, for instance, likely have more interaction with local governments based on previous relationships, and can also conceivably contribute more to the government's agenda for political stability by preserving more jobs (Shleifer 1998; Megginson and Netter 2001). SOEs also have better access to finance, and thus an efficiency-oriented government may render more loan facilitation services to non-state firms. Domestic private firms, on other hand, are shown in the literature to have stronger financial constraints and worse access to finance (Cull et al. 2013). Foreign firms, in contrast, may have more information problems in finding out what to produce. To understand how government facilitation affects firms of different ownership types,

we thus run separate productivity regressions for each type (Table 8). We use the most stringent specification, based on the last column of Table 7, which includes the full set of controls. Again, we only report the TFP regressions, but the results based on labor productivity are very similar.

Loan Help is positively associated with productivity for all three types of firms. The magnitude is largest for domestic private firms at 1.68, followed by foreign firms at 1.03, and SOEs at 0.73. This order is roughly consistent with the degree of financial constraints across those ownership types. Indeed, domestic private firms have less access to finance in China (Brandt and Li 2003; Huang, 2003, Bai et al. 2006; Li et al. 2008; Cull, Xu and Zhu 2009). Our results suggest that government's help in matching up borrowers and lenders has been especially useful in easing the relatively severe financial constraints faced by some ownership types. Info Facilitation is also associated with productivity positively and significantly, but only for SOEs and foreign firms, and not for domestic private firms. An interpretation is that local governments are eager to provide information useful to the firms closest to them (i.e., SOEs), or to firms that the government is eager to lure to attract investment. Indeed, Huang (2003) provides evidence that local governments often provide preferential treatment for foreign firms for this purpose.

**Development level and the effectiveness of government facilitation**

China is a large country with tremendous regional disparities in economic development. In 2002, the GDP per capita of the city of Dongguan in Guandong Province was more than 17 times that of Tianshui in Gansu Province. Survey evidence indicates that variation in the quality of regional governance is also quite large (Cull and Xu 2005; Long 2010; Wang, Xu and Zhu 2012). Some recent studies have suggested that countries at different stages of development face distinct binding constraints and thus should have different optimal policies (Kremer 1993; Hausman et al. 2005).[11]

Substantial regional variation also affords us an opportunity to examine how the effectiveness of government facilitation differs across levels of development. Here, other confounding factors such as the legal system and culture are held constant. *A priori*, firms in poor regions are likely more constrained in their development potential. Firms there tend to have less experience in long-distance, arms-length trade and less information about market demand, products that are likely to sell well, and the technology frontier. The local information

[11] A summary of recent empirical support for this argument is found in Xu (2011).

environment for lending also is likely to be more opaque, due to less demand for information infrastructure (such as credit and collateral registries), which in turn reduces the economic viability of information service providers. Thus we expect that the local government has a stronger potential role to play in poor areas in reducing information asymmetries regarding products, technology, and between lenders and borrowers.

To see how the role of the government differs by income levels, and to test the conjecture that contracting institutions become more important as an economy develops (McMillan and Woodruff 2002), we divided our 18 sampled cities into two groups by GDP per capita, with poor cities defined to be those with average GDP per capita lower than the sample median (12,467 yuan), and the rich the rest of the cities. We report results for both the pooled sample and the subsamples by ownership type (Table 9).

There are strong differences between the poor and the rich regions. For the rich regions, both facilitation variables are insignificant. In sharp contrast, for the poor regions government information facilitation regarding product and technology advances is strongly associated with firm productivity. Increasing this variable by one standard deviation (0.2) is associated with a productivity improvement of 21 log points. This is consistent with the notion that poor firms suffer from the lack of information about products and technology, perhaps due to too little exposure to mature markets and too little local human capital. Similarly, government help in obtaining loans is positively related to productivity in poor cities. Increasing this by one standard deviation (0.136) is associated with a boost in productivity of 25 log points. This is consistent with the notion that information asymmetry is more severe in poor regions, and thus government facilitation of loans particularly effective.

Further analyzing the data by ownership types, we find that government facilitation continues to play a stronger role in poor regions. SOEs do not benefit from government information facilitation in either poor or rich regions. For domestic private firms in poor regions, the benefits of loan help appear to be substantial. A one standard deviation increase is associated with a productivity gain of 52 log points. This is in sharp contrast to the smaller magnitude and statistical insignificance for this variable in the rich region. Info Facilitation is not significantly associated with the productivity of domestic private firms in either region.

Foreign firms seem to benefit more from government facilitation in poor regions than in rich ones. Increasing Loan Help to those firms by one standard deviation is associated with a

productivity gain of 20 log points in poor regions, 13 log points in rich regions. Increasing Info Facilitation by one standard deviation is associated with a productivity boost for foreign firms of 37 log points in the poor region, but there is no significant effect for these firms in the rich region. Thus in poor regions foreign firms and, especially, domestic firms appear to benefit much from loan help, and foreign firms in addition from information facilitation. In richer regions, only foreign firms appear to benefit from loan help, and in a more limited way.

**Industry Thirst for Government Facilitation and the Effectiveness of Government Facilitation**

Rajan and Zingales (1998) investigate how industry-level growth rates vary with both dependence on external sources of financing and the level of financial sector development in a country. We adapt this framework for our analysis by focusing on how firm productivity varies with both government facilitation efforts and industry features that are likely to be particularly conducive to the effectiveness of government facilitation. We assume that in certain types of industries, costs associated with the lack of government coordination and facilitation may be particularly high. Industries that rely more on inter-provincial trade, export markets, and technological innovation are likely to be in need of government facilitation to overcome information problems and obtain external financing. We therefore construct three industry-level variables: the average export/sales ratio, the average share of firm sales to other provinces, and the average innovation index (see Table 1 for definitions), and use them as proxies for industry thirst for government facilitation. Our conjecture is that government facilitation should be particularly effective in boosting productivity in facilitation-thirsty industries. The specification we adopt is as follows:

$$lnLP_{ijct} = \alpha + \beta_j + \gamma_c + X_{ijct}\theta + \delta\, FACILITATION_c * THIRST_j + \varepsilon_{ijct}\,, \qquad (2)$$

In the specification, as usual, we control for firm characteristics, the local income level, CEO characteristics, and industry dummies. More importantly, we control for city dummies, and thus essentially hold constant all city level variables, which include the local business environment, the political environment, leadership characteristics, culture, and endowments. The potential for omitted variable bias is thus substantially reduced relative to other types of regressions. The key parameter is the interaction between the government facilitation variables

at the city-industry level and Thirst at the industry level. Since the interaction varies at the city-industry level, the standard error is clustered at that level as well.

Panel A considers the pooled sample. We confirm that in industries that need more government facilitation—that is, those with a strong export orientation and need for a large domestic market, and those that rely heavily on innovation—facilitation is more strongly associated with productivity. In the case of loan help, its interaction with industries' tendencies to export, reliance on a large market, and on technological innovation are all significant. In the case of Info Facilitation, the interaction terms are significant for reliance on large markets and innovation, but not for the tendency to export.

To better understand the magnitudes of these coefficients, we classify an industry as "high" if its average (taken across firms in that industry) for a given characteristic ranks one standard deviation above the median industry on that same measure. Similarly, we call the government facilitation level high if the average for that facilitation variable (across firms in a city) is one standard deviation above the median city on that measure. Using those definitions, in a "highly" export-oriented industry, the difference in firm efficiency between areas characterized by high versus average *Loan Help* is 16 log points higher than the same difference (i.e., high versus average Loan Help) in an industry with the average tendency to export.[12] Relative to the mean large-market-reliant industry, the productivity differential between high and the mean Loan Help locations is 11 log points higher in highly large-market-reliant industries. Similarly, relative to an industry at the mean level of innovation intensity, the productivity differential between high and mean Loan Help locations is 10 log points higher in a highly innovation-intensive industry.

Similar results are found for the *Information Facilitation* variable. Relative to the mean large-market-reliant industry, the productivity differential between high and mean Info Facilitation locations is 6 log points higher in highly large-market-reliant industries. Finally, relative to the mean innovation-intensive industry, the productivity differential between high and mean Info Facilitation locations is 5 log points higher in highly innovation-intensive industries. In short, these magnitudes tend to be large.

Panel B presents the estimation results for each ownership type. Here, SOEs in large-market-reliant or innovation-intensive industries benefit more from government loan help; but

[12] That is, 12.733*0.09*0.136, where 12.733 is the coefficient of the interaction term, 0.09 is the standard deviation of industry-level export tendency, and 0.136 is the standard deviation of local Loan Help.

the impact of government information facilitation does not hinge on industry characteristics. For domestic private firms, both loan help and information facilitation have stronger effects in industries that have greater need for government facilitation. For foreign firms, government loan help is particularly useful in export-oriented industries, but there are no significant relationships for other industry characteristics.

Panel C presents the results for the poor and the rich regions separately. Again, the effect of government facilitation is much more keenly felt in facilitation-thirsty industries in poor cities, as five of the six interaction terms are statistically significant. In contrast, only two of the six interaction terms are significant for the rich region, and then only at the 10 percent level, and the magnitudes of those coefficients are many times smaller.

Before closing this section, we note that the three industry characteristics, export orientation, large market reliance, and innovation, are all strongly related to firm productivity. Table 11 shows strong correlations between firm efficiency and each of these three variables (measured at firm level). This is not surprising. From Adam Smith through the current endogenous growth literature, the key importance of large markets and innovation for productivity through channels such as specialization and the development of growth-supporting institutions have been emphasized (Jones and Romer 2009). Thus, our finding that government facilitation is especially useful for export-oriented, long-distance-trade-oriented, and innovation-intensive industries implies that such facilitation has been conducive to the development of an especially productive part of the local economy.

## 4. Case Studies of Local Government Market Facilitation

*Case 1: The Role of Local Governments in Development Zones in China*

The facilitating role of local governments in China can be best illustrated by the critical importance of development zones in promoting China's economic growth and trade expansion in the past 30 years. Inspired by the success of export-processing zones in some East Asian countries, China opened its four Special Economic Zones in 1980, including Shenzhen, Zhuhai, and Shantou in Guangdong province and Xiamen in Fujian province. These zones enjoyed special privileges in attracting FDI, developing foreign trade, and experimenting with innovative

institutional reforms and polices. The establishment of special economic zones turned out to be an immediate success, which led the central government to authorize the opening of economic and technology development zones in coastal areas in 1984. Similar economic and technology zones emerged in interior and less developed regions during 1984-1988. Since then, the number and economic significance of development zones in China have grown exponentially.[13] Besides the central government, different levels of local government, from provinces to prefectural cities and even counties, started to establish development zones with great enthusiasm. The strategic focus and function of the development zones expanded from investment and trade promotion, such as special economic zones and export-processing zones, to a high-tech innovation orientation, as reflected in science parks in Beijing, Shanghai, Shenzhen, and many other cities. Development zones spread all over the country proved to be a key vehicle to facilitate investment and trade, and to achieve industrial upgrading, economic agglomeration and innovation. According to one account, the total number of development zones at all levels reached over 1,500 in 2006, and contributed to an astounding 68 percent of China's GDP and 87 percent of its exports in that year (Zhang, 2011).

By establishing and managing development zones, local governments provide critical help to Chinese private enterprises, especially small and medium sized ones. A development zone is located at a geographically delimited area (typically at the edge of an urban area) with a single administration. To attract investment, the local governments build infrastructure for the development zones, such as paved roads and utility connections for water, electricity and telecommunications, and also raise funds to construct freeways, airports, ports and the like to facilitate the expansion of the zones. Good infrastructure inside and outside development zones substantially lowers transportation costs for firms located in those zones. More important, development zones create a business-friendly climate and relatively efficient administration.

As is well known, heavy state regulation and inefficient bureaucracy inflict serious costs on private firms (especially SMEs) in developing and transition countries (Frye and Shleifer, 1997). Our empirical findings in previous section also provide evidence that government efficiency is important for improving firm performance. Development zones in China have their own semi-autonomous and streamlined administrative committees, which usually commit to

[13] See Zeng (2010) for a comprehensive and historical account of China's development zones in the past 30 years.

providing services in the way of "one-building" (all government agencies are located inside one building), "one-station" (a complete range of administrative services a firm may require are processed in the administration center), and "one-window open" (a firm only needs to submit the application materials for approval through one window and does not need to deal with each relevant agency separately). In many zones, there is a time requirement on the administration committee to handle applications or requests from firms and give them a formal reply in a pre-specified period of time. These procedural and institutional arrangements, by streamlining and reconstructing government services in development zones, help reduce the costs of the "grabbing hand" which may deter entry of new firms or make it harder for existing firms to survive. The commitment of local governments to efficient service delivery is largely credible because there has been intensive regional competition for investment among Chinese local governments due to the underlying fiscal incentives and to a political promotion scheme based on economic performance (Qian and Weingast, 1997; Jin, Qian and Weingast, 2005; Li and Zhou, 2005; Xu, 2011). The increased competition between and across development zones has been a salient phenomenon in China's economic success (Zhang, Li, and Schoonhoven, 2009; Zhang, 2011).

One of the key roles played by the development zones is to provide financial incentives to attract more entrants. Firms located in development zones enjoy preferential policies that include reduced taxes and cheap land use. For instance, new entrants to technology and development zones typically enjoy a policy called the "first three years of tax waiver and next three years of tax reductions." In years four through six, firms pay an income tax of 15 percent, which is less than half the normal tax rate of 33 percent. In 1999, additional preferential policies were granted by the government, such as enlarging the scope of the tax waiver and deductions (e.g., reduction of sales taxes on technological transfers, consulting and services, and R&D expenditures). Intensified competition across development zones drives down land-leasing prices, sometimes to zero even though the combined cost of building infrastructure and seizing land from farmers is high.

More critical help from local government comes from easier access to finance for private firms located in development zones. Accessing finance is a major obstacle for SMEs in developing countries since the financial market in those countries is typically underdeveloped, and SMEs usually have no tangible assets to pledge as collateral for bank loans. This is especially the case for SMEs in high-tech industries where innovation requires sizable, up-front

investment in R&D, and commercialization of patents takes time and may not bear fruit. As in other developing countries, SMEs in China tend to rely on informal financing channels and new technology ventures develop slowly due to credit constraints. However, development zones have come up with multiple ways to better meet those challenges. The administrative committees, or companies funded and run by administrative committees, often provide firms located in zones guarantees on their loans, or provide subsidies on the interest payments on bank loans received by those firms. They also strive to facilitate the applications for specific government funding from ministries (such as Ministry of Science and Technology) for firms that meet the funding requirements.

In the late 1990s, China began cultivating a venture capital industry in order to promote innovation and entrepreneurship in development zones. While continuing to attract and support large manufacturing firms, local governments at different levels have made substantial efforts to adapt the financing channel to nurture R&D-oriented, small-sized ventures in high-tech industries, by encouraging VC firms to invest in R&D-oriented SMEs located in development zones or by establishing their own VC firms to make equity investments in technology ventures. For instance, the Caohejing Hi-Tech Park, the earliest national-level science park in Shanghai, established the Center for Technological Entrepreneurship in 1997, whose main purpose was to incubate small, innovative firms by offering consulting and financing services (including equity investment from the government). During 1997-2008, the center incubated 357 firms with a survival rate of 91 percent.[14] Shenzhen City government set up a VC company in 1999, Shenzhen Innovation Investment Group, which specialized in investing in R&D projects and technology ventures. Zhongguancun Science Park established "Zhongguancun Guidance Funds for Venture Capital" in 2002 which aimed to make staged investment in high-tech ventures.

As emphasized in the previous section, the motivation for local governments to set up government-sponsored VC firms and finance technology ventures is not rent-seeking but efficiency-enhancing. In these investments, local governments do not take controlling shareholdings and deliberately avoid intervening in firm (VC) decisions, mainly providing guidance and support. Drawing lessons from the inefficient management of SOEs, they decentralize decision-making power to hired professional management teams. Local government typically pays a certain percent (e.g., 2% ) of the fund size as management fees to those teams,

[14] http://www.stcsm.gov.cn/jdbd/xwryia/cxgfwe/9240.htm.

and any dividends accruing to local government are distributed to the non-government shareholders.

Equity investments by governments target young private technology ventures since there is a gaping unmet demand for external finance among these firms, which is consistent with the main findings in this paper. As a minimum financing requirement, local government typically invests at least 30 % of the project size of SMEs, and the staged investment largely occurs in the early stage of firm growth, which is also the most risky stage for investment.

More importantly, as shown in our empirical section, equity investment by local government helps solve the coordination failure in financing risky, innovative projects. If government engages in the early and possibly most risky stages of development of these ventures, it signals strong support which is critical for business success in China, and also increases chances of success by relaxing credit constraints. Early stage equity investment in venture R&D can also help leverage additional investment from private investors. In this case, development zones are like a platform that pools together the technology ventures that need financing and potential financiers of these ventures (VC firms), while the local government acts like a platform manager who aims to stimulate entry of new ventures and VC firms by offering financial support for the entry and early development of these technology ventures (Rochet and Tirole, 2003, 2006; Armstrong, 2006).

*Case 2: The Role of Local Governments in Building Specialized Marketplaces*

A market economy requires a network of efficiently functioning markets. How to match a large number of sellers and buyers that are geographically dispersed is a serious challenge for developing countries like China that tend to have underdeveloped wholesale and retail markets in the early stages of development. In the 1980s and early 1990s, China was in the slow process of transforming from a planned economy to a market one. At that time, wholesale and retail channels were largely controlled by the planning process, and the distribution of goods followed an administrative hierarchy from provinces, to prefectural cities, to counties and townships.

Some local governments in China made breakthroughs in developing specialized markets as a way of overcoming the institutional and transportation barriers. The first specialized market appeared spontaneously in Wenzhou, Zhejiang province in the 1970s. Wenzhou was a place

well-known for its strong private business in China's early years of economic reform. Beginning in the 1980s, specialized markets expanded rapidly from Wenzhou to other regions of Zhejiang province, due to the gradual liberalization of the Chinese economy as well as strong support from the local government. Between 1978 and 2003, the total number of marketplaces in Zhejiang province, including specialized markets, rose from 1,332 to 4,036.[15] Specialized markets enticed a large number of buyers to come on site and, by pooling a large set of diverse demands, made it profitable to produce specifically for those markets. By feeding a large number of producers who cluster in the neighborhood of the markets and specifically target those markets for their sales, the expansion of specialized markets contributed substantially to the emergence and growth of industrial clusters in Zhejiang province. According to one account, in 2002, the total sales from products manufactured by 53 industrial clusters in Zhejiang accounted for over 30 percent of China's total retail volume (Ke, 2012, p. 32).

There is a consensus among scholars of specialized markets in China that a crucial feature is the supporting and facilitating role played by the local government. In 1998, Zhejiang had 43 well-functioning specialized markets with available information on their historical origins, and 38 of them were established and managed by local governments ranging from city- to village-level governments (Ke, 2012, p. 41). The facilitating role of local governments is also illustrated by the development of specialized markets in Yiwu, Zhejiang province, which has the best-known specialized markets in China.

Yiwu is a county-level city located in the middle part of Zhejiang province. It was a poor agriculturally-dominated region in the late 1970s. However, Yiwu had a long tradition of peddling even under strict regulations against engaging in commerce during the planning regime, partly due to the tacit endorsement of those activities by the village and township governments. The establishment of Yiwu Market in 1982 was a conscious response to the grass-roots initiatives for market trade, as well as a focused government initiative to become a leader in specialized markets. Initially small in scale (about 700 booths), Yiwu Market's rapid growth made it China's No.1 market for industrial products by 1991, a position it has maintained ever

[15] See Ke (2012) for an excellent review and analysis of the development of specialized markets in Zhejiang province. Zheng (2003) and Wang and Lu (2008) also provide detailed documentation and analysis of specialized markets in Zhejiang province. We draw heavily from these sources on specialized markets of Zhejiang province in general and the specialized markets of Yiwu in particular.

since. By 2006, Yiwu Market was home to 58,000 booths with total sales of over 30 billion RMB, attracting businessmen from all over the world.

In the successful story of specialized markets in Yiwu, the local government played a key role in coordinating and enabling by providing initial capital to build physical structures for markets, lowering entry barriers for small, inexperienced booth keepers, and maintaining law and order to deter fraud. Construction of specialized markets required land and capital investment, which was well beyond the financial capacity of any private enterprise at that time. Some of these specialized markets occupied 100,000 to 500,000 square meters, and construction of each specialized market typically cost 10-50 million RMB in 1998. As the trading volume of these markets rapidly increased, older specialized markets had to be relocated and expanded. In the process of establishing and expanding specialized markets, local governments repeatedly provided necessary funding and other support.

As in the case of development zones, the role of local government in the evolution of specialized markets can be characterized as that of a platform builder and facilitator. In order to maximize the number of sellers and buyers meeting in the marketplaces, the local government levied very low taxes and fees on booth-keepers compared to general tax rates in China. According to Ke (2012, p.45), the overall rate of taxes and fees as a percentage of sales in Zhejiang specialized markets was about 1 percent, while the turnover tax rate was about 5 percent of sales. This suggests strongly that local governments were not rent-seekers or 'grabbing hands' with respect to specialized markets, consistent with our main findings from the regressions. In addition, the local government provided information facilitation by creating a price index for each product category which reduced search costs for buyers. Reputation ratings were also provided for booth-keepers in the marketplace to reward reputable sellers and punish cheaters. Yiwu Market's reputation monitoring evaluation system classifies the nearly 60,000 booths into six levels. The administrative agency in that marketplace also fights counterfeit products and encourages product upgrading. In 2002, the Yiwu government also launched a pro-poor policy by helping peasants in remote areas to develop business relationships with Yiwu Market, such as delivering materials to peasant households for processing and then selling the processed products in the market.

## 5. Conclusions

We have presented a variety of evidence consistent with the notion that market facilitation by local governments has been associated with improved efficiency for some Chinese firms. Even if one takes those results and our interpretations at face value, natural questions arise about why some firms benefit more than others, why local governments are compelled to provide such assistance, and whether such results are replicable in other contexts. The pattern of our results indicates strongly that those private firms with weak access to and knowledge of financial, input, and product markets benefit most, which suggests that facilitation by local governments was a deliberate attempt to resolve market failures stemming primarily from information asymmetries. Our explanation of why local governments pursued such policies is rooted in the changing fiscal dynamics that forced those governments to become increasingly self-reliant in generating revenue. The tax-sharing reform in 1994 dramatically decentralized the provision of basic social services to the local government level without providing corresponding fiscal revenues, forcing local governments to rely on the development of their local economies to finance the provision of public goods. The government also imposed coherent incentives that tie the promotion of local government officials to local economic performance (Li and Zhou 2005), again reinforcing the incentives of local governments to development their economies.

A deep understanding of the contexts in which such benefits are replicable is beyond the scope of this paper, but we note that the market facilitation strategies used in China mirror those in industrialized countries more than a century before. For example, credit cooperatives in Germany in the 19th century harnessed local information flows by inducing members who knew each other well to monitor each other's borrowing to incentivize repayment (Guinnane, 1997, 2001, 2002). In the United States, credit reporting agencies emerged to collect information using a network of local correspondents throughout the country. This information was sold to businesses that were seeking to extend trade credit to firms in other parts of the country (Madison, 1974; Olegario, 2001, 2003). As in the Chinese case, innovations made it possible to gather and use local information to expand credit to borrowers that otherwise would have had to rely on their own (or local) funds to grow. The distinction is that the local governments have played a more active role in the Chinese context than in 19th century Germany or the United States, where local and state governments were generally permissive of such activities though not active facilitators of loans (Cull et al., 2006).

There is also precedent in Germany for local governments to provide infrastructure to assist markets. Savings Banks called Sparkessen sprung up throughout the late 19th century that enabled people with low income to save small sums of money in a safe place and thus to support some needs for credit in local businesses. But many local governments chartered Sparkessen during this period in order to create a market for their own bonds. Government debt held by Sparkessen was often issued to finance infrastructural improvements that reduced transportation costs and thus facilitated market development (Guinnane, 2002). Though the mechanism was less direct than in the Chinese case, the end results were similar.

Given the right incentives, based on local fiscal self-reliance and a system of political promotion that rewards economic performance, our results suggest that local government could conceivably play a role in harnessing local information to facilitate credit market development and in providing infrastructure that enables markets to work better and grow, though the historical record from developed economies suggests that most of these activities were left to private interests.

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**Table 1. Variable definitions**

| Variables | Definition |
|---|---|
| ln(LP) | Firm-level log labor productivity, as measured by value added (in constant value) per worker. |
| loan help | A dummy variable indicating whether the government offered help in obtaining bank loans (based on a survey question). |
| Info facilitation | A dummy variable indicating whether the firm gets its information from the government on product and technology advances (based on a survey question). |
| ETC | Entertainment and travelling expenditure over sales, as a proxy of corruption. |
| Property rights protection | A firm's answer to the following question: of all the commerce or other conflicts that the company has experienced, what's the likelihood that the contractual or property rights are protected by the legal system? |
| share of disputes by courts | The share of a firm's disputes being resolved by the court system. |
| Gov efficient services | The manager's assessment about the share of government officials that offer efficient services. |
| Official ability | The manager's assessment about the share of government officials that are competent. |
| Official helping firms | The manager's assessment about that share of government officials that are helping rather then hindering firm development. |
| PS_longTenure | The dummy variable of city party secretary staying on current job for 3 years or above. The default is one to two years. |
| CEO schooling | The number of years of schooling that the CEO attained. |
| CEO tenure | The number of years that the CEO had held the current CEO position. |
| CEO ownership | The share of firm ownership by the CEO of the firm. |
| ln(firm age) | Logarithm of firm age. |
| ln(L) | Logarithm of the number of employees of a firm. |
| state | The ownership share accounted for by the state. |
| foreign | The ownership share accounted for by foreign owners., |
| sell to other province | A dummy variable indicating that the firm sells its product to other provinces. |
| Ln(GDP per capita) | Logarithm of GDP per capita at the city level (in RMB). |
| Export/sales | The ratio of export value over sales by a firm. |
| innovation index | In the questionnaire, a firm is asked whether it has introduced innovation in the following aeras: (1) new product or services; (2) entry into new industries; (3) new technological innovation or techniques; (4) new management methods; (5) new quality control methods. This index is the summation of the five dummy variables (for affirmative answers) divided by 5. |

**Table 2. Summary Statistics**

| | Observations | Mean | S.D. | Median | Minimum | Maximum |
|---|---|---|---|---|---|---|
| lngdppc | 7,194 | 9.475 | 0.408 | 9.422 | 8.547 | 10.745 |
| PS_longTenure | 9,569 | 0.219 | 0.413 | 0.000 | 0.000 | 1.000 |
| ln(LP) | 9,334 | 4.161 | 1.583 | 4.181 | -4.255 | 16.454 |
| loan help | 9,569 | 0.157 | 0.363 | 0.000 | 0.000 | 1.000 |
| Info facilitation | 6,478 | 0.351 | 0.477 | 0.000 | 0.000 | 1.000 |
| loan help, city-ind avg | 9,569 | 0.157 | 0.136 | 0.126 | 0.000 | 0.700 |
| Info facilitation, city-ind avg | 6,478 | 0.351 | 0.201 | 0.323 | 0.000 | 1.000 |
| ETC | 9,266 | 0.031 | 0.024 | 0.024 | 0.002 | 0.163 |
| Property rights protection | 8,246 | 0.640 | 0.163 | 0.629 | 0.000 | 1.000 |
| share of disputes by courts | 9,281 | 0.081 | 0.078 | 0.069 | 0.000 | 0.500 |
| Gov efficient services | 8,646 | 0.355 | 0.138 | 0.343 | 0.018 | 0.800 |
| Official ability | 8,900 | 0.509 | 0.113 | 0.513 | 0.116 | 0.900 |
| Official helping firms | 8,876 | 0.344 | 0.125 | 0.337 | 0.020 | 0.853 |
| ln(firm age) | 9,569 | 2.211 | 0.983 | 2.079 | 0.000 | 3.970 |
| ln(L) | 9,512 | 4.806 | 1.552 | 4.673 | 0.000 | 11.358 |
| domestic private | 9,565 | 0.368 | 0.465 | 0.000 | 0.000 | 1.000 |
| state | 9,565 | 0.227 | 0.408 | 0.000 | 0.000 | 1.000 |
| foreign | 9,565 | 0.405 | 0.471 | 0.000 | -0.000 | 1.000 |
| CEO schooling | 9,498 | 14.639 | 2.403 | 15.000 | 0.000 | 18.000 |
| CEO tenure | 9,506 | 5.767 | 4.260 | 5.000 | 0.000 | 33.000 |
| CEO ownership | 9,486 | 9.792 | 21.683 | 0.000 | 0.000 | 100.000 |
| Exp/sales, ind avg | 9,569 | 0.082 | 0.090 | 0.038 | 0.000 | 0.273 |
| Sell to other province, ind avg | 9,569 | 0.562 | 0.220 | 0.632 | 0.141 | 0.944 |
| Innovation index, ind avg | 9,569 | 0.406 | 0.119 | 0.408 | 0.230 | 0.601 |
| sell to other province | 9,379 | 0.574 | 0.495 | 1.000 | 0.000 | 1.000 |
| Export/sales | 9,348 | 0.082 | 0.251 | 0.000 | 0.000 | 1.000 |
| innovation index | 9,397 | 0.407 | 0.357 | 0.400 | 0.000 | 1.000 |

**Table 3. Summary statistics by state and non-state ownership**

| | State | | | | Non-State | | | |
|---|---|---|---|---|---|---|---|---|
| | N | mean | sd | p50 | N | mean | sd | p50 |
| lngdppc | 1,803 | 9.429 | 0.359 | 9.412 | 5,388 | 9.491 | 0.422 | 9.422 |
| PS_longTenure | 2,435 | 0.256 | 0.437 | 0.000 | 7,130 | 0.206 | 0.404 | 0.000 |
| ln(LP) | 2,379 | 3.900 | 1.458 | 3.960 | 6,955 | 4.250 | 1.614 | 4.283 |
| loan help | 2,435 | 0.168 | 0.374 | 0.000 | 7,134 | 0.153 | 0.360 | 0.000 |
| info facilitation | 1,632 | 0.420 | 0.494 | 0.000 | 4,846 | 0.328 | 0.469 | 0.000 |
| loan help, city-ind avg | 2,435 | 0.156 | 0.130 | 0.145 | 7,130 | 0.157 | 0.138 | 0.126 |
| info facilitation, city-ind avg | 1,632 | 0.357 | 0.194 | 0.327 | 4,842 | 0.349 | 0.203 | 0.320 |
| ETC | 2,369 | 0.025 | 0.063 | 0.011 | 6,897 | 0.033 | 0.076 | 0.011 |
| Property rights protection | 2,136 | 0.677 | 0.370 | 0.800 | 6,110 | 0.627 | 0.395 | 0.800 |
| share of disputes by courts | 2,375 | 0.105 | 0.262 | 0.000 | 6,906 | 0.072 | 0.231 | 0.000 |
| ceoS | 2,391 | 14.897 | 2.002 | 15 | 7,103 | 14.552 | 2.519 | 15 |
| ceoTenure | 2,405 | 5.177 | 4.248 | 4 | 7,097 | 5.968 | 4.246 | 5 |
| ceoown | 2,414 | 1.384 | 7.945 | 0 | 7,068 | 12.669 | 24.020 | 0 |
| govEffCI | 2,184 | 0.349 | 0.138 | 0.332 | 6,462 | 0.357 | 0.138 | 0.352 |
| govAbilityCI | 2,263 | 0.505 | 0.110 | 0.510 | 6,633 | 0.510 | 0.115 | 0.515 |
| govHelpCI | 2,243 | 0.337 | 0.112 | 0.336 | 6,629 | 0.346 | 0.129 | 0.337 |
| sell to other province | 2,354 | 0.640 | 0.480 | 1 | 7,021 | 0.551 | 0.497 | 1 |
| ln(firm age) | 2,435 | 2.841 | 0.972 | 3.045 | 7,134 | 1.996 | 0.889 | 1.946 |
| ln(L) | 2,419 | 5.574 | 1.654 | 5.565 | 7,093 | 4.544 | 1.424 | 4.419 |
| domestic private | 2,435 | 0.044 | 0.161 | 0.000 | 7,130 | 0.479 | 0.483 | 0.300 |
| state | 2,435 | 0.891 | 0.246 | 1.000 | 7,130 | 0.000 | 0.000 | 0.000 |
| foreign | 2,435 | 0.065 | 0.184 | 0.000 | 7,130 | 0.521 | 0.483 | 0.700 |
| Export/sales | 2,379 | 0.032 | 0.143 | 2,379.000 | 6,965 | 0.099 | 0.276 | 0.000 |
| innovation index | 2,365 | 0.395 | 0.348 | 0.400 | 7,032 | 0.410 | 0.360 | 0.400 |

**Table 4. Summary statistics by income level**

| | **Poor** Observations | mean | S.D. | Median | rich observations | mean | S.D. | Median |
|---|---|---|---|---|---|---|---|---|
| lngdppc | 3,444 | 9.204 | 0.249 | 9.262 | 3,750 | 9.724 | 0.365 | 9.602 |
| PS_longTenure | 4,573 | 0.294 | 0.456 | 0.000 | 4,996 | 0.150 | 0.357 | 0.000 |
| ln(LP) | 4,406 | 3.786 | 1.623 | 3.851 | 4,928 | 4.495 | 1.469 | 4.470 |
| loan help | 4,573 | 0.147 | 0.354 | 0.000 | 4,996 | 0.166 | 0.372 | 0.000 |
| info facilitation | 2,963 | 0.350 | 0.477 | 0.000 | 3,515 | 0.352 | 0.478 | 0.000 |
| loan help, city-ind avg | 4,573. | 0.147 | 0.139 | 0.088 | 4,996 | 0.166 | 0.133 | 0.157 |
| info facilitation, city-ind avg | 2,963 | 0.350 | 0.204 | 0.325 | 3,515 | 0.352 | 0.198 | 0.314 |
| ETC | 4,353 | 0.037 | 0.087 | 0.013 | 4,913 | 0.025 | 0.057 | 0.010 |
| Property rights protection | 3,890 | 0.636 | 0.392 | 0.800 | 4,356 | 0.644 | 0.387 | 0.800 |
| share of disputes by courts | 4,309 | 0.084 | 0.246 | 0.000 | 4,972 | 0.078 | 0.235 | 0.000 |
| ceoS | 4,545 | 14.605 | 2.274 | 15 | 4,953 | 14.670 | 2.516 | 15 |
| ceoTenure | 4,531 | 5.610 | 4.193 | 5 | 4,975 | 5.909 | 4.314 | 5 |
| ceoown | 4,518 | 9.054 | 21.193 | 0 | 4,968 | 10.463 | 22.099 | 0 |
| govEffCI | 4,034 | 0.346 | 0.154 | 0.313 | 4,612 | 0.363 | 0.123 | 0.366 |
| govAbilityCI | 4,224 | 0.502 | 0.119 | 0.501 | 4,676 | 0.515 | 0.108 | 0.518 |
| govHelpCI | 4,160 | 0.318 | 0.125 | 0.300 | 4,716 | 0.366 | 0.121 | 0.371 |
| sell to other province | 4,455 | 0.542 | 0.498 | 1 | 4,924 | 0.602 | 0.490 | 1 |
| ln(firm age) | 4,573 | 2.296 | 1.033 | 2.197 | 4,996 | 2.133 | 0.928 | 2.079 |
| ln(L) | 4,522 | 4.722 | 1.571 | 4.505 | 4,990 | 4.882 | 1.531 | 4.787 |
| domestic private | 4,569 | 0.343 | 0.459 | 0.000 | 4,996 | 0.392 | 0.469 | 0.000 |
| state | 4,569 | 0.255 | 0.426 | 0.000 | 4,996 | 0.201 | 0.388 | 0.000 |
| foreign | 4,569 | 0.402 | 0.472 | 0.000 | 4,996 | 0.408 | 0.470 | 0.000 |
| Export/sales | 4,416 | 0.043 | 0.183 | 0.000 | 4,932 | 0.117 | 0.294 | 0.000 |
| innovation index | 4,445 | 0.388 | 0.359 | 0.400 | 4,952 | 0.423 | 0.355 | 0.400 |

**Table 5. Determinants of Government Facilitation**

| | **Loan help** | **Info facilitation** |
|---|---|---|
| Ln(firm age) | -0.028*** | -0.042*** |
| | (0.009) | (0.012) |
| Ln(L) | 0.052*** | 0.050*** |
| | (0.008) | (0.010) |
| State | -0.056* | 0.054 |
| | (0.030) | (0.036) |
| Foreign | -0.051** | -0.035 |
| | (0.021) | (0.034) |
| Ln(GDP per capita) | -0.015 | 0.019 |
| | (0.031) | (0.057) |
| PS long tenure | -0.010 | 0.114*** |
| | (0.030) | (0.031) |
| Entertainment & travelling costs/sales, city-ind avg | 0.778** | 0.477 |
| | (0.307) | (0.626) |
| Property rights, city-ind avg | 0.121 | -0.079 |
| | (0.078) | (0.103) |
| Share of disputes through the court, city-ind avg | 0.116 | 0.529** |
| | (0.097) | (0.224) |
| Gov efficient services, city-ind avg | 0.202*** | 0.192 |
| | (0.070) | (0.198) |
| Official ability, city-ind avg | 0.153 | -0.062 |
| | (0.138) | (0.219) |
| Official helping firms, city-ind avg | -0.090 | -0.033 |
| | (0.128) | (0.216) |
| CEO schooling | 0.006 | 0.000 |
| | (0.004) | (0.008) |
| CEO tenure | 0.005* | -0.003 |
| | (0.003) | (0.003) |
| CEO ownership share | 0.000 | 0.001* |
| | (0.000) | (0.000) |
| Industry dummies | Yes | Yes |
| R squared | 0.082 | 0.079 |
| Number of observations | 5,944 | 4,080 |

Note. *, ** and *** represent statistical significance at the 10, 5 and 1 percent, respectively. White-heteroskedasticity-corrected standard errors clustered at the city level in parentheses.

**Table 6. Firm Efficiency and Government Facilitation: Base Results**

| | **lnlp** | **lnlp** | **lnlp** | **lnlp** |
|---|---|---|---|---|
| | LProd style | TFP style | LProd style | TFP style |
| ln(firm age) | -0.451*** | -0.430*** | -0.460*** | -0.437*** |
| | (0.047) | (0.045) | (0.052) | (0.046) |
| ln(L) | 0.083*** | 0.143 | 0.077*** | 0.196 |
| | (0.029) | (0.215) | (0.029) | (0.161) |
| state | 0.005 | -0.330*** | 0.039 | -0.295*** |
| | (0.114) | (0.107) | (0.108) | (0.105) |
| foreign | 0.313*** | 0.067 | 0.337*** | 0.085 |
| | (0.091) | (0.084) | (0.087) | (0.084) |
| Ln(GDP per capita) | 0.633*** | 0.405*** | 0.661*** | 0.419*** |
| | (0.077) | (0.071) | (0.107) | (0.070) |
| PS long tenure | -0.066 | -0.012 | -0.090 | -0.048 |
| | (0.100) | (0.096) | (0.111) | (0.097) |
| loan help | 0.440*** | 0.283*** | | |
| | (0.086) | (0.075) | | |
| info facilitation | 0.149** | 0.126** | | |
| | (0.072) | (0.064) | | |
| loan help, city-ind avg | | | 1.700*** | 1.142*** |
| | | | (0.384) | (0.340) |
| info facilitation, city-ind avg | | | 0.661*** | 0.613*** |
| | | | (0.239) | (0.209) |
| Industry dummies | Yes | Yes | Yes | Yes |
| industry dummies * (ln(K/L), lnL) | No | Yes | No | Yes |
| r2_a | 0.181 | 0.351 | 0.192 | 0.358 |
| N | 4,817 | 4,709 | 4,817 | 4,709 |

Note. *, ** and *** represent statistical significance at the 10, 5 and 1 percent, respectively. White-heteroskedasticity-corrected standard errors clustered at the firm level in parentheses.

**Table 7. Firm Efficiency and Government Facilitation: Adding Other Local Controls**

| | **lnlp** | **lnlp** | **lnlp** | **lnlp** |
|---|---|---|---|---|
| loan help, city-ind mean | 1.141*** | 1.055*** | 0.953*** | 0.909** |
| | (0.339) | (0.350) | (0.330) | (0.353) |
| info facilitation, city-ind mean | 0.596*** | 0.576** | 0.456*** | 0.389* |
| | (0.213) | (0.230) | (0.175) | (0.199) |
| PS long tenure | -0.028 | 0.044 | 0.024 | 0.054 |
| | (0.098) | (0.101) | (0.103) | (0.105) |
| Bank loan, city-ind mean | | 0.106 | | 0.272 |
| | | (0.148) | | (0.179) |
| Trade credit, city-ind mean | | 1.598*** | | 1.328*** |
| | | (0.425) | | (0.496) |
| Entertainment, travelling/sales, city-ind mean | | | -2.154 | -2.791 |
| | | | (2.678) | (2.716) |
| Property rights protection, city- ind mean | | | 0.436 | 0.518 |
| | | | (0.304) | (0.347) |
| Share of dispute resolved by courts, city-ind mean | | | 0.416 | 0.058 |
| | | | (0.506) | (0.505) |
| Gov efficient services, city-ind avg | | | 0.774** | 0.559 |
| | | | (0.390) | (0.406) |
| Official ability, city-ind avg | | | -0.235 | 0.170 |
| | | | (0.594) | (0.631) |
| Official helping firms, city-ind avg | | | -0.323 | -0.836* |
| | | | (0.472) | (0.505) |
| ind dummies * ln(K/L), lnL | Yes | Yes | Yes | Yes |
| Ind dummies | Yes | Yes | Yes | Yes |
| Firm characteristics, log(GDP per capita) | Yes | Yes | Yes | Yes |
| CEO characteristics | Yes | No | No | Yes |
| r2_a | 0.366 | 0.370 | 0.363 | 0.370 |
| N | 4,647 | 4,484 | 3,806 | 3,649 |

*, ** and *** represent statistical significance at the 10, 5 and 1 percent, respectively. White-heteroskedasticity-corrected standard errors, clustered at the city-industry level, in parentheses.

CEO characteristics include CEO education, whether the CEO was educated abroad, CEO tenure as the CEO of the firm, CEO ownership of the firm, and whether CEO is also the chairman of the firm.

The results based on labor-productivity-styled regressions are similar.

**Table 8. Firm Efficiency and Government Facilitation: By Ownership Type**

| | **State** | **Domestic private** | **Foreign** |
|---|---|---|---|
| | TFP style | TFP style | TFP style |
| loan help, city-industry-ownership mean | 0.729* | 1.684*** | 1.033*** |
| | (0.436) | (0.496) | (0.321) |
| info facilitation, city-industry-ownership mean | 0.738** | 0.135 | 0.453* |
| | (0.373) | (0.191) | (0.267) |
| Ln(firm age) | -0.337*** | -0.430*** | -0.492*** |
| | (0.065) | (0.107) | (0.073) |
| Ln(L) | 0.236* | -0.775 | -0.153 |
| | (0.136) | (0.786) | (0.138) |
| lngdppc | 0.373** | 0.456*** | 0.528*** |
| | (0.157) | (0.110) | (0.105) |
| PS long tenure | 0.080 | -0.004 | 0.080 |
| | (0.185) | (0.147) | (0.137) |
| CEO characteristics, access to finance, institutional environment, efficiency of state machinery, | Yes | Yes | Yes |
| ind dummies * ln(K/L), lnL | Yes | Yes | Yes |
| ind dummies | Yes | Yes | Yes |
| r2_a | 0.391 | 0.368 | 0.424 |
| N | 926 | 1,133 | 1,753 |

Note. *, ** and *** represent statistical significance at the 10, 5 and 1 percent, respectively. White-heteroskedasticity-corrected standard errors, clustered at the city-industry-ownership level, in parentheses.

The results based on labor productivity styled regressions are similar (except that market link is statistically significant).

**Table 9. Firm Efficiency and Government Facilitation: By Income Level**

| | **Poor** | | | | **Rich** | | | |
|---|---|---|---|---|---|---|---|---|
| | **Pooled** | **State** | **Domestic private** | **foreign** | **Pooled** | **State** | **Domestic private** | **foreign** |
| loan help, city-ind mean | 1.837*** | 1.548 | 3.824*** | 1.483** | 0.702 | 0.089 | 0.973 | 0.943* |
| | (0.496) | (1.361) | (1.010) | (0.643) | (0.464) | (1.277) | (0.667) | (0.544) |
| info facilitation, City-ind mean | 1.048** | -1.084 | 0.542 | 1.847** | 0.124 | -1.351 | 0.161 | 0.228 |
| | (0.409) | (0.680) | (0.550) | (0.795) | (0.254) | (0.824) | (0.333) | (0.441) |
| Ln(firm age) | -0.488*** | -0.290** | -0.574** | -0.515*** | -0.385*** | -0.265*** | -0.352*** | -0.471*** |
| | (0.090) | (0.127) | (0.289) | (0.106) | (0.068) | (0.087) | (0.114) | (0.110) |
| Ln(L) | -0.276 | -0.405** | -0.431 | -0.572 | 0.064 | 3.664*** | -0.491*** | 0.162** |
| | (0.349) | (0.182) | (0.898) | (0.783) | (0.039) | (0.074) | (0.180) | (0.075) |
| state | -0.329 | -0.691 | | 0.074 | -0.345** | -1.062** | | -1.033* |
| | (0.268) | (0.638) | | (0.789) | (0.149) | (0.427) | | (0.530) |
| foreign | 0.105 | 0.658 | | -0.114 | -0.035 | -1.214** | | -0.399* |
| | (0.211) | (0.665) | | (0.417) | (0.115) | (0.563) | | (0.242) |
| Ln(GDP per capita) | 1.173*** | 1.290*** | 1.239*** | 1.379*** | 0.576*** | 0.656* | 0.560** | 0.547*** |
| | (0.198) | (0.374) | (0.350) | (0.354) | (0.148) | (0.337) | (0.221) | (0.203) |
| PS long tenure | -0.046 | 0.606 | 0.214 | -0.145 | 0.184 | 0.114 | 0.090 | 0.214 |
| | (0.200) | (0.539) | (0.370) | (0.248) | (0.138) | (0.248) | (0.198) | (0.177) |
| CEO characteristics, access to finance, institutional environment, efficiency of state machinery, | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| ind dummies * ln(K/L), lnL | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| r2_a | 0.370 | 0.541 | 0.532 | 0.368 | 0.384 | 0.383 | 0.349 | 0.484 |
| N | 1,532 | 408 | 434 | 764 | 2,117 | 519 | 699 | 990 |

*, ** and *** represent statistical significance at the 10, 5 and 1 percent, respectively. White-heteroskedasticity-corrected standard errors, clustered at the city-industry level, in parentheses.

Rich cities are defined to be those with average GDP per capita above 12467 Yuan (i.e., the median) in 2005, and poor cities are the rest of our sample. Rich cities include Changchun, Changsha, Dalian, Hangzhou, Jiangmen, Kunming, Shenzhen, Wenzhou, Wuhan, Zhengzhou. Poor cities include Benxi, Chongqing, Guiyang, Haerbin, Lanzhou, Nanchang, Nanning, Xi'an.

The results based on labor productivity styled regressions are similar.

**Table 10. Firm Efficiency and Government Facilitation: The RZ-style Estimates**

| **Panel A. Pooled sample** | Industry characteristics: | | |
|---|---|---|---|
| | $export_{ind}$ | $Large\_mkt_{ind}$ | $Innovate_{ind}$ |
| Loan $help_c$ * industry $char_{ind}$ | 12.733*** | 3.666** | 6.212*** |
| | (4.467) | (1.543) | (2.278) |
| R squared | 0.353 | 0.353 | 0.353 |
| Info $facilitation_c$ * industry $char_{ind}$ | 0.867 | 1.299** | 1.961** |
| | (3.164) | (0.636) | (0.942) |
| R squared | 0.351 | 0.352 | 0.352 |
| observations | 6,739 | 6,739 | 6,739 |

| **Panel B. By ownership:** | **state** | | | **Domestic private** | | | **Foreign** | | |
|---|---|---|---|---|---|---|---|---|---|
| | $export_{ind}$ | $Large\_mkt_{ind}$ | $Innovate_{ind}$ | $export_{ind}$ | $Large\_mkt_{ind}$ | $Innovate_{ind}$ | $export_{ind}$ | $Large\_mkt_{ind}$ | $Innovate_{ind}$ |
| Loan $help_c$ * industry $char_{ind}$ | 12.279 | 5.056* | 10.551** | 8.132 | 5.612** | 6.440** | 15.376*** | 2.381 | 4.085 |
| | (9.324) | (2.780) | (4.449) | (5.113) | (2.296) | (3.096) | (5.413) | (1.862) | (2.630) |
| R squared | 0.361 | 0.363 | 0.366 | 0.283 | 0.287 | 0.285 | 0.421 | 0.419 | 0.419 |
| Info $facilitation_c$ * industry $char_{ind}$ | -1.370 | 1.869 | 3.089 | 5.193** | 2.101*** | 3.060*** | -3.126 | 0.739 | 0.833 |
| | (6.419) | (1.721) | (2.470) | (2.413) | (0.688) | (1.037) | (3.248) | (0.743) | (1.026) |
| R squared | 0.359 | 0.361 | 0.362 | 0.284 | 0.288 | 0.288 | 0.419 | 0.419 | 0.418 |
| observations | 1,694 | 1,694 | 1,694 | 2,188 | 2,188 | 2,188 | 3,139 | 3,139 | 3,139 |

| **Panel C. By income level** | **poor** | | | **rich** | | |
|---|---|---|---|---|---|---|
| | $export_{ind}$ | $Large\_mkt_{ind}$ | $Innovate_{ind}$ | $export_{ind}$ | $Large\_mkt_{ind}$ | $Innovate_{ind}$ |
| Loan $help_c$ * industry $char_{ind}$ | 21.818*** | 8.944*** | 20.226*** | 4.416 | -0.096 | 0.159 |
| | (4.652) | (3.207) | (5.604) | (4.130) | (1.499) | (2.141) |
| R squared | 0.310 | 0.311 | 0.314 | 0.368 | 0.368 | 0.368 |
| Info $facilitation_c$ * industry $char_{ind}$ | 0.450 | 6.108*** | 11.300*** | 3.187 | 0.947* | 1.541* |
| | (7.698) | (1.630) | (2.559) | (2.333) | (0.564) | (0.809) |
| R squared | 0.304 | 0.314 | 0.316 | 0.369 | 0.369 | 0.369 |
| observations | 3,158 | 3,158 | 3,158 | 3,581 | 3,581 | 3,581 |

Note. In each column within two lines, we report the results on the term "government facilitation * industry characteristics", with government facilitation being either loan facilitation or information facilitation, and industry characteristics being either export tendency, large domestic market tendency, or innovation tendency. **We also control for** firm characteristics (Ln(firm age), ln(L), ownership), the interaction term of industry dummies with log(K/L) and log(L), CEO characteristics, **industry dummies and city dummies**.

*, ** and *** represent statistical significance at the 10, 5 and 1 percent, respectively. White-heteroskedasticity-corrected standard errors, clustered at the city-industry level, in parentheses.

**Table 11. Firm Efficiency and the Three Characteristics**

| | Pooled | State | Dom private | Foreign | Poor | Rich |
|---|---|---|---|---|---|---|
| Export/sales | 0.673*** | 1.219*** | 0.671*** | 0.461*** | 0.774*** | 0.521*** |
| | (0.118) | (0.279) | (0.217) | (0.155) | (0.195) | (0.143) |
| Sell to other provinces | 0.333*** | 0.542*** | 0.221* | 0.296*** | 0.377*** | 0.242*** |
| | (0.073) | (0.129) | (0.123) | (0.112) | (0.110) | (0.093) |
| Innovation index | 0.628*** | 0.433** | 0.426*** | 0.667*** | 0.697*** | 0.540*** |
| | (0.096) | (0.186) | (0.156) | (0.145) | (0.146) | (0.125) |
| Firm char (size, age, ownership), ln(GDP per capita) | | | | | | |
| CEO characteristics, institutional environment, efficiency of state machinery, access to finance | Yes | Yes | Yes | Yes | Yes | Yes |
| ind dummies * ln(K/L), lnL | Yes | Yes | Yes | Yes | Yes | Yes |
| r2_a | 0.287 | 0.326 | 0.243 | 0.357 | 0.286 | 0.291 |
| N | 5,027 | 1,239 | 1,652 | 2,362 | 2,184 | 2,843 |

*, ** and *** represent statistical significance at the 10, 5 and 1 percent, respectively.
White-heteroskedasticity-corrected standard errors clustered at the firm level are in parentheses.