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Exogenous Financing, State-Ownership Features and Enterprises Productivity—An Empirical Analysis on Listed Chinese Manufacturing Enterprises

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This study examines how the exogenous financing and state-ownership features affect the enterprises' productivity by observing the financing data of 1,481 Chinese listed enterprises over the period 2001-2016. The result shows that long-term loan has a positive impact on enterprises' productivity. Short-term loan and account payable have a negative impact on enterprises' productivity. Also, we find that state-ownership features have a negative impact on enterprises productivity. Moreover, this paper investigates the relationship between enterprises' productivity and the degree of regional economic development measured by GDP on provincial level. The result shows provincial economic development is positively related to the enterprises productivity. These findings are useful for both related authorities and enterprises for better understanding of the financial channels and constrains in China and the possible solutions to more diversified exogenous financing.

Keywords: exogenous financing, state-ownership features, enterprises productivity

Introduction

In recent years, China's economy is growing rapidly but still in the transition stage. The level of economic development in various regions is uneven. Therefore, there are huge differences in productivity between different enterprises as the main operating body of the market economy in China. As an important engine of economic growth, productivity is also the power source to realize the sustainable development of a country's economy. Hence, it is essential for us to explore what affects the productivity of enterprises to help to achieve the sustained growth of productivity, which is an important path to narrow the gap between the rich and the poor countries (Fan & Li, 2017).

The neo-classical growth theory (Romer, 1986) studied the problem of economic growth firstly. It assumed that technological progress was an exogenous variable. And the conclusion emphasized that capital accumulation is the key to creating economic growth in underdeveloped areas. Chinese scholars combined the neo-classical growth theory with the present situation of China's economic growth and made

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more thorough and detailed study. Qiu and Zheng (2006) established a comprehensive factors model of China's economic growth. The conclusion is that the increase of capital input is the most important source of China's economic growth and the contribution of the increase of labor input is relatively weak.

Recently, with the improvement of the availability of micro-enterprise data, domestic and foreign scholars have been paying attention to the study of productivity growth at a micro-perspective. From the micro-level, productivity growth comes from enterprises' productivity improvement and inter-firm element reconfiguration (Hsieh & Klenow, 2009; Brandt, Biesebroeck, & Zhang, 2012). Krugman (1994) pointed out that Asian economic growth mainly depends on capital investment which was not conductive to the sustained economic growth. And he also pointed out that total factor productivity (TFP) has a more lasting impact on economic growth. Zhang and Sun (2015), the Chinese scholars, also considered that the growth of TFP has made a great contribution to the economic growth of China, but China's economy growth still relied on the increase of capital investment. So, it is essential for us to study the productivity of enterprises from the aspect of capital investment.

In this paper, we will discuss how the exogenous financing affects the enterprises productivity. This paper contributes to existing research in the following ways. Firstly, we consider the effects of state-ownership features while exploring the influence of exogenous financing on enterprise productivity. Secondly, we also consider regional effect because the differences of economic development between various provinces may affect the productivity.

We obtain the key findings: First, we find that short-term loans can reduce enterprises' productivity while long-term loans affect enterprises' productivity positively. Second, state-ownership features have negative impact on enterprises' productivity. Third, regional economic development can promote enterprise productivity. The higher per capita GDP is, the higher productivity of local enterprises is.

Our samples are based on an unbalanced panel data for 1,481 enterprises over the period 2001-2016 which is collected from CSMAR database. It covers completed financial index of manufacture enterprises and can provide support for our findings.

The structure of the remainder is arranged as follows. In the second part, the econometric model of exogenous financing influencing enterprise productivity is constructed and the variables and data are explained. The third part reports the estimated results of the effects of exogenous financing on enterprise productivity and analyzes the regression results. Last part is the summary of this paper.

Literature Review

Factors affecting the enterprise productivity are classified into internal factors and external factors in existing literature. The literature of external factors mainly analyzes how to improve the enterprise productivity from the enterprise export behavior and political related aspects. Internal factors mainly include technological innovation and human capital. In this paper, we focus on the influence of exogenous financing on the productivity of enterprises. From the perspective of internal factors, if enterprises want to make technological innovation, improve the structure of human capital investment, and improve the quality of human capital, they will need a lot of financial support. Also, the risks of technological innovation are beyond the acceptable range of most enterprises. Therefore, smaller enterprises often lack technology development due to financial constraints, which hinders the increase of enterprise productivity. From an external condition of enterprises' productivity, for those enterprises with import and export trade, more financial support is often required to

overcome the additional costs, such as the transport costs of trade in international markets.

There are two main viewpoints in the literature on exogenous financing:

It is believed that exogenous financing can improve the productivity of enterprises. Brennan and Schwartzt (1978) corroborated the trade-off theory, namely, agency costs, tax, and bankruptcy costs result that better companies tend to have higher financial leverage ratio of the book value. Trade-off theory suggests that when the enterprises' profitability and performance are improved, their expected bankruptcy cost becomes smaller, so they can afford more interest of debt, which will lead to higher liabilities. Furthermore, high asset-liability ratio will generate a large volume of interest to be paid, which cannot only make enterprises obtain obvious tax effect, but also reduce the free cash flow of the enterprises to decrease the use of enterprises' funds by operators for self-serving projects. Agency problems also could be controlled effectively. There will be more debt financing with this result, so the relationship between debt ratio and performance is positive.

There are also some scholars through empirical analysis to support this conclusion. Frank and Goyalma (2003) found that financial leverage of book value is positively correlated with corporate performance, collateral, and inflation expectations by analyzing the huge data of nearly 10,000 observed variables from 1950 to 2000 in the United States. Using panel data from Belgian companies, Gatti and Love (2008) also concluded that the possibility of obtaining bank credit funds by enterprises positively affects the size of productivity. Some Chinese scholars have also obtained similar conclusion: Luo, Liu, and Cao (2016) stated that the impact of exogenous financing on the productivity of enterprises is positive, especially on the productivity of private enterprises. Yan and Chen's (2012) research shows that the decline in the degree of financing constraints faced by listed enterprises can significantly improve their performance. Wang (2003) did an empirical research on the data of Chinese listed companies from 1998 to 2000. Taking debt financing rate as the independent variable and Tobin's Q value as the dependent variable, he found that the enterprises' debt financing rate has a positive impact on strengthening enterprises governance and improving their value.

The result of the agency cost theory (Jensen & Meckling, 1976) is just the opposite. Agency cost theory holds that exogenous financing will reduce enterprise productivity. Agency cost theory decomposes capital structure into debt capital and equity capital, and then analyzes the problems from these two aspects. When enterprises finance by debt, the management of the enterprise directly affects the return of investment, so the investor will supervise the operation of managers. Because of the asymmetric information between investors and managers, behavior of investors supervising managers will incur lots of expenses and costs, and this kind of agency cost will reduce the total value of the enterprise. Moreover, there are more debts with the increase of external financing in enterprises. Furthermore, it will reduce the value of the enterprise to a greater extent.

Some scholars' empirical and theoretical explanations also support this theory. Wang and Zou (2015) found that debt financing is negatively correlated with enterprises' performance by using listed state-owned enterprises data. Liu (2012) considered the factors of growth and found that in terms of the correlation between the total debt level and the corporate performance, the high growth companies have a negative correlation, while the low growth companies have a positive correlation. In terms of the maturity of liabilities, the current liabilities of low growth companies are positively correlated with corporate performance, while the non-current liabilities are negatively correlated with it. For high-growth companies, the maturity of liabilities is negatively correlated with corporate performance.

Empirical Model, Data, and Variables

Empirical Model

Our empirical model is adopted from the model suggested by Xiang and Wei (2014) and we made some transformations. The specific model is as follows:

$$y_{it} = \alpha_1 L_{shorttermloan_{it}} + \alpha_2 L_{longtermloan_{it}} + \alpha_3 L_{accountpayable_{it}} + \alpha_4 CV_{it} + \varepsilon_{it}$$

In this case, i represents the enterprise, t represents time (years), Y_{it} represents the productivity of the ith-largest enterprise of year t, $L_{shorttermloan_{it}}$ represents the logarithm of ratio of short-term loans to total assets, $L_{longtermloan_{it}}$ represents the logarithm of ratio of long-term loans to total asset, $L_{accountpayable_{it}}$ represents the logarithm of ratio of accounts payable to total assets; CV_{it} is other control variables, ε_{it} is the random error term, and α_i is coefficient to be estimated.

Data

To test for possible external financing effects on direct investment, we used panel data for 1,481 enterprises over the period 2001-2016. The variables we chose to include in the empirical model are discussed in the following sections.

Dependent Variables

In this paper, the total factor productivity (TFP) and labor productivity are used to measure the enterprise productivity. The total factor productivity will be the main explanation object of this paper, while the labor productivity group will be used to test the robustness of results.

The first dependent variable is Log(TFP). Total factor productivity (TFP) is the most ideal index to measure enterprises' productivity, which generally indicates the efficiency of resource utilization. In calculation, TFP is surplus value that is equal to output minus the capital, labor, and land input. Therefore, TFP can reflect the average output with per unit of input in production, that is, the overall efficiency of inputs elements converted into final outputs. It can be said that the core of economic growth is the growth of total factor productivity (Wang, Gong, & Chen, 2006). In this paper, we use the LP method posted by Levinsohn and Petrin (2003).

In addition to total factor productivity, another parameter that is often used to describe the performance of an enterprise is labour productivity. In this paper, we calculate labor productivity using gross operating income minus total operating cost then divided by number of employees. So, it can reflect the average output per employee which is another embodiment of enterprise efficiency. And the logarithm of labor productivity—Log(productivity), is used to be the second dependent variable in our study.

Explanatory Variables

There are two kinds of financing methods: equity financing and debt financing. Equity financing mainly includes the equity and retained earnings of enterprises. Debt financing is external financing, including bank loans, business credit, corporate bonds, etc. However, because the Chinese corporate bond market is not completed enough and very few listed enterprises would like to issue bonds to obtain financing. In this paper, we only consider bank loans and commercial credit when selecting exogenous financing variables.

Myers and Majluf (1984) thought that the internal financing cost of enterprises is the smallest. Debt

financing is only used when internal financing of an enterprise cannot support its own development needs. Therefore, enterprises with better profitability are inclined to internal financing rather than debt financing, so we assume that debt ratio is negative related to enterprises' performance.

There are two types of bank loans for enterprises, including short-term loans and long-term loans. However, the difficulties for enterprises of obtaining long-term loans and short-term loans are different. Because banks cannot fully acquaint with the credit and operating conditions of enterprises when offer loans to them. In order to control the cost and risk of loans, banks tend to offer enterprises short-term loans with less risk. Hence, this paper will also measure the impact of bank loans on enterprises' productivity in terms of both long-term loans and short-term loans.

(1) Short-term loan—log(STL)

This paper takes the logarithm of the proportion of short-term loans to total assets to represent short-term loans variable.

(2) Long-term loan—log(LTL)

This paper takes the logarithm of the proportion of long-term loans to total assets to represent long-term loans variable.

(3) Account payable—log(AP)

In addition to bank loans, exogenous financing also includes commercial credit financing. Commercial credit generally refers to a financing means through sales on account and delayed payment which are provided by the upstream suppliers of enterprises. Commercial credit financing can provide flexible and convenient financial support to enterprises while the development of financial market is incomplete or tight monetary policy is implemented (Xiang & Wei, 2014). This paper uses the logarithm of proportion of accounts payable to total assets to represent commercial credit financing variable.

Other Control Variables

Endogenous financing refers to the funds produced by the results of the enterprises' operating activities, consisting of retained earnings and depreciation. As mentioned above, endogenous financing is closely negotiated with exogenous financing. Most of enterprises have tendency to choose endogenous financing as the primary financing channel. So, endogenous financing can influence the scale of exogenous financing relatively. This paper selects the following three enterprise endogenous financing factors as control variables.

Net cash flow—log(NCF). A visual expression of retained earnings is the net cash flow of the enterprise. Net cash flow represents the net increase or decrease of cash in a certain period of time. The amount of cash owned by an enterprise at the beginning of the year reflects the amount of money that can be used for enterprises' investment and management activities in that year. And enterprises with larger amount of the cash flow have stronger ability of endogenous financing (Guariglia & Mateut, 2006). So, we choose the net cash flow as control variable. To exclude the influence of firm size, the logarithm of the ratio of net cash flow to total assets as another index to describe the endogenous financing capability of enterprises.

Total asset turnover—log(TO). The turnover rate of total assets is calculated as sales income divided by total assets, which is an important index to comprehensively evaluate the management quality and utilization efficiency of all assets. The greater the turnover rate of total assets is, the stronger the turnover capacity of enterprises is. So, it is more likely for enterprises to obtain internal financing. Therefore, this paper chooses the logarithm of total assets turnover ratio as the index to describe the endogenous financing capability of enterprises.

Regional effect—log(GDP). The degree of economic development in different regions is varied. So, the resources available to enterprises are also unequal, which will have a certain impact on the performance of enterprises. This paper assumes that the regional economic development will have positive impact on local enterprises. We use the per capita GDP of the region in which the enterprise is located to represent the degree of economic development there. The GDP of this paper is calculated as follows: Take the logarithm of the average per capita GDP of the region in which the enterprise is located from 2001 to 2016.

State-ownership features—(state). W. F. Wu, C. F. Wu, & Rui (2008) took executive government background as a measure of political relevance; it is found that in regions where government intervention is serious, the local government background of executives can significantly improve enterprise performance and enterprise value. So, this paper divides enterprises into state-owned enterprises and non-state-owned enterprises, expressed by 0-1 variables. State-owned enterprises are expressed as 1 and non-state-owned enterprises are expressed as 0.

A summary of the variables we use in this paper is presented in Table 1. The descriptive statistics of the variables is reported in Table 2.

Table 1

Description of Variables

Variable	Description
Log(TFP)	Total factor productivity by LP method
Log(productivity)	Log((gross revenue-total operating cost)/employees)
Log(STL)	Log(short-term loan)
Log(LTL)	Log(long-term loan)
Log(AP)	Log(account payable)
Log(TO)	Log(turnover of total capital)
Log(NCF)	Log(net cash flow)
Log(GDP)	Log(per capita GDP)
State	State = 1, if an enterprise is state-owned; State = 0, if an enterprise is non-state owned;

Table 2

Descriptive Statistics of Variable

Variable	Obs	Mean	Std. Dev.	Min.	Max.
TFP	9,862	-3.966924	3.166817	-20.49215	2.961208
Labor productivity	15,164	2.887392	48.04586	-2101.433	3965.428
Log(STL)	13,307	-0.7040083	6.520603	-18.42855	12.45335
Log(LTL)	8,564	-3.920751	2.825337	-18.66208	3.738136
Log(AP)	15,747	-3.363045	2.852887	-17.69638	3.794677
Log(TO)	15,201	-0.5286475	0.6943025	-8.979229	2.471602
Log(NCF)	15,683	-1.44004	2.609118	-12.99219	0.0029239
Log(GDP)	14,683	10.35658	0.4403648	9.38949	11.15039

Estimation Procedure and Result Analysis

Estimation Procedure

In order to better reflect the role of exogenous financing on the productivity of enterprises, we will regress not all sample enterprises but the sub-samples of state-owned enterprises and non-state-owned

enterprises. The panel data used in this paper have the features that cross-sectional dimension is large and contains the variable of enterprise ownership which does not change with time. So, we choose feasible generalized least squares (FGLS) estimation method, a heteroscedastic error term. And ordinary least squares (OLS) method is also used as a robustness check. Finally, we add time dummies in order to increase the likelihood of no correlation across individuals in the idiosyncratic disturbance assumption. And the regression results are shown in Table 3.

Measurement Results and Analysis

Table 3

Regression Results Using FGLS and OLS

Variables	FGLS		OLS	
	(1)	(2)	(3)	(4)
	Log(productivity by TFP)	Log(productivity by valued)	Log(productivity by TFP)	Log(productivity by valued)
Log(STL)	-0.00388**	-0.00964***	-0.0117**	-0.0171**
	-0.00165	-0.0019	-0.00593	-0.00757
Log(LTL)	0.0416***	0.0322***	0.0358**	0.0179
	-0.00508	-0.00454	-0.0161	-0.0187
Log(AP)	-0.0560***	-0.354***	-0.0699	-0.338***
	-0.00817	-0.00848	-0.0536	-0.0505
Log(NCF)	0.0745***	0.0747***	0.0398**	0.0477**
	-0.00459	-0.00661	-0.019	-0.0207
Log(TO)	0.731***	0.654***	0.804***	0.713***
	-0.0188	-0.0123	-0.084	-0.0946
Log(GDP)	0.0715***	0.301***	0.0789	0.303***
	-0.0196	-0.0153	-0.0793	-0.104
state	-0.0385*	-0.0107	-0.130*	-0.0267
	-0.0197	-0.023	-0.0686	-0.0894
Constant	-2.372***	-2.582***	-2.450***	-2.581**
	-0.203	-0.165	-0.812	-1.078
Observations	2,557	2,456	2,557	2,456

Notes. Standard errors in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Short-Term Loan—Log(STL)

This paper focuses on the influence of exogenous financing on the TFP of enterprises. From the regression results in Table 3, Log(STL) is significant in all samples and the coefficient is negative, that is, short-term liabilities do not play a role in promoting enterprise performance. On the contrary, too much short-term loans for an enterprise restrain the improvement of its performance. From Table 4, the amount of the sample enterprises' short-term loan is much larger than the long-term loan amount; it means that the ratio of current liabilities is too high in these enterprises. And the reason is that banks have strict management of long-term credit and tend to offer enterprises short-term loans which have short maturities and less risk of losing principal and interest. Furthermore, there are some problems for enterprises themselves. For example, it is difficult for enterprises with poor operating performance and insufficient credit level to financing through long-term loan. They have to choose short-term loan. In a word, as the threshold of financing becomes higher, it is hard for some enterprises to obtain long-term loan, which will result in funding vacancy for long-term. So, they have to use short-term loans to meet long-term capital needs. So, it common for them that short-term loans are

occupied for long periods of time. But this will leads to higher transaction costs and negotiation costs which make against enterprises' TFP.

In addition, compared with commercial credit, bank loans control the cash flow of enterprises more strictly. And enterprises have to pay the interest of bank loan with strict time and amount requirement, which means bank loans are lack of flexibility. So, it is difficult for enterprises to invest according to their own plans. Besides, too much short-term loan makes the enterprise's investment decision-maker shortsighted. They will accelerate their investments by investing in projects with small net present value and short payback periods and abandoning projects with long payback periods and high net present value to avoid missing out better investment opportunities in the future, which can influence the profitability of the enterprises (R. Y. Zhang & A. W. Zhang, 2013).

Long-Term Loan—Log(LTL)

According to regression result from Table 3, Log(LTL) has a significant positive impact on the productivity of enterprises in all samples, that is, long-term loans can promote the productivity of enterprises. The long-term loans have a longer repayment period and higher stability compared with short-term liabilities. Long-term loans do not require enterprises to maintain sufficient cash flow to deal with the pressure of repayment of principal and interest. If manufacturing enterprises want to make more profits, they will invest in expanded reproduction. And these investments are usually long-term investments, such as plant construction, machinery, and equipment procurement. So, enterprises with much more long-term loans are more likely to improve productivity. In addition, because banks strictly scrutinize the solvency of the enterprises when offering long-term loans, enterprises with more long-term loans have higher credit and better operating conditions. Then, these enterprises have comparatively good performance. After offering enterprises long-term loans, banks also monitor enterprises' investment activities to restrain enterprises from over investment.

Commercial Credit—Log(AP)

Commercial credit financing is significantly negative in all samples from result in Table 3, that is, commercial credit financing will reduce enterprise productivity. Commercial credit financing is mainly obtained by credit and delayed payment, and its purpose is alleviating the temporary financial difficulties by negotiating with upstream supply enterprises when enterprises' capital is tight. That is to say, the short-term commercial credit financing is usually used in the case of a shortage of enterprises' funds. The more accounts payable are, the less optimistic the capital situation of the enterprise is. So, it will have a negative impact on the labor productivity of the enterprise.

Endogenous Financing

It is evident that the effect of endogenous financing on enterprise productivity is significantly positive, that is, enterprises with more endogenous financing have higher productivity. Because the cost of endogenous financing is relatively low and easier to obtain, enterprises with more endogenous financing can lower the cost of innovative activities to improve productivity. That is, endogenous financing can promote the level of enterprise productivity.

Regional Effect

According to the estimated results of Table 3, Log(GDP) is significant in all samples and its coefficient is positive, which demonstrates that provincial economic development can boost enterprises productivity. We

believe that these regions with better economic development cannot only attract more high-quality labor force, but also have more liquid capital. Therefore, local enterprises can get more credit, which can boost the productivity of enterprises in these regions.

State-Ownership Features

Table 4

Descriptive Statistics of Exogenous Financing Variable

Variables	All enterprises		State-owned enterprises		Non-state-owned enterprises	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Short-term loan	2.11E+08	9.88E+08	2.85E+08	1.13E+09	1.30E+08	5.96E+08
Long-term loan	30552.58	138646.8	51439.56	191200.1	11612.15	41582.36
Account payable	65784.12	251821.4	99359.15	339519.6	28259.99	74561.35

From Table 3, enterprise ownership has a significant impact on TFP and the coefficient is negative. From Table 4, the average of long-term loans from banks of state-owned enterprises is four times as many as non-state-owned enterprises generally because most of the loans to enterprises are provided by state-owned banks. And these banks provide more loans to state-owned enterprises because of government's support. Most of state-owned enterprises have easier access to credit markets to obtain funds, so they can gain more profit by expanding production scale. It is not essential for them to make innovation to get higher productivity.

Table 5

Regression Results of Sub-sample

Variables	FGLS				OLS			
	State-owned enterprises		Non-state enterprises		State-owned enterprises		Non-state-owned enterprises	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Log(producti-vity by TFP)	Log(productiv-ity by valued)	Log(producti-vity by TFP)	Log(produc-tivity by valued)	Log(producti-vity by TFP)	Log(producti-vity by valued)	Log(producti-vity by TFP)	Log(producti-vity by valued)
Log(STL)	-0.00325	-0.00783***	-0.0110***	-0.00374	-0.00699	-0.0119	-0.0184*	-0.0225*
	-0.00219	-0.00232	-0.00267	-0.00486	-0.00718	-0.00949	-0.0108	-0.013
Log(LTL)	0.0179*	0.0275***	0.0415***	0.015	0.0162	0.00346	0.0487*	0.0312
	-0.0098	-0.00939	-0.00858	-0.00915	-0.0217	-0.026	-0.0268	-0.0286
Log(AP)	-0.0934***	-0.404***	-0.0460***	-0.327***	-0.159*	-0.393***	-0.00245	-0.309***
	-0.0154	-0.0228	-0.0124	-0.0158	-0.0871	-0.087	-0.0653	-0.0586
Log(NCF)	0.0778***	0.0703***	0.0749***	0.0923***	0.0394	0.0563**	0.0414	0.0439
	-0.00899	-0.0131	-0.00859	-0.00951	-0.0271	-0.0287	-0.0264	-0.0288
Log(TO)	0.836***	1.015***	0.623***	0.328***	0.920***	1.021***	0.663***	0.366***
	-0.034	-0.0373	-0.0239	-0.0318	-0.109	-0.121	-0.125	-0.136
Log(GDP)	0.126***	0.349***	-0.0124	0.364***	0.0816	0.265*	0.0887	0.363**
	-0.0334	-0.0363	-0.029	-0.0346	-0.109	-0.143	-0.12	-0.152
Constant	-3.179***	-1.440***	-3.112***	-3.239***	-2.909***	-2.445*	-2.254	-3.266**
	-0.346	-0.312	-0.366	-0.385	-1.056	-1.263	-1.436	-1.603
Observations	1,441	1,116	1,362	1,094	1,441	1,116	1,362	1,094

Notes. Standard errors in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

To further investigate relationship between state-ownership feather, exogenous financing, and enterprises' productivity, we divide the enterprises to two state-owned enterprises sub-sample and non-state-owned enterprise sub-sample, then examine the relationship between exogenous financing and firm performance in two different sub-samples. And the results are shown in Table 5. Log(STL) is not significant in the sub-sample of state-owned enterprises. Although the effect of long-term loans on enterprise performance is significantly positive in the sub-sample of state-owned enterprises, the significance of coefficient is obviously lower than that of non-state-owned enterprises, and the value of coefficient is also smaller than that of non-state-owned enterprises. Therefore, the dependence of state-owned enterprises on exogenous financing is smaller than that of non-state enterprises, and the financing constraints faced by non-state enterprises are obviously greater than those of state-owned enterprises.

Conclusion

Based on panel data of 1,481 manufacturing enterprises from 2001 to 2016, this paper explores the impact of exogenous financing on enterprise productivity by using FGLS and OLS methods. The results show that the external financing of manufacturing enterprises mainly comes from bank short-term loans. And the leverage ratio is negatively correlated with enterprise productivity, that is, firms with more short-term loans have lower productivity levels. Long-term loans, because of its stability, can promote productivity growth in enterprises. The larger the proportion of long-term loans to total assets is, the higher the level of enterprise productivity is. Commercial credit is negatively correlated with enterprise productivity, that is, the more accounts payable is, the lower the productivity of the enterprise is.

And regional effect has a significant positive correlation with enterprise productivity; it means that provincial economic development can promote enterprise productivity. In terms of state-ownership features, it has negative impact on enterprise productivity. Although state-owned enterprises have more exogenous financing than non-state-owned enterprises, the promotion effect of long-term loans to state-owned enterprises is less than that of non-state-owned enterprises. Because of its state-owned nature, the state-owned enterprises do not have to worry about capital constraints though they do not use sufficient funds to improve their productivity. This is one of reasons why the level of total factor productivity (TFP) is still not ideal after Chinese banking sector has continuously injected liquidity into state-owned enterprises for many years.

Therefore, for the government, they should speed up the reform and innovation of the financial system and encourage financial institutions to provide credit funds to enterprises, especially private enterprises, to make development of the economy more stable. For the non-state-owned enterprises, they should maintain a good relationship with banks as far as possible to increase long-term loan holdings and balance debt maturity structure and give full play to the role of financial leverage.

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