

## The Impact of Private Finance on Industrial Gross Output Value of Non-State Owned Enterprises in Wenzhou: An Empirical Analysis

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**Abstract.** This study aims to identify the impact of private finance on gross production value of Non-state owned enterprises (Non-SOEs) in Wenzhou. The paper investigated the impact of private finance on Non-SOEs using the annual data over the period 1999-2011 and OLS estimator after stabilizing test by ADF. The results of regression suggest that Wenzhou private finance has a significantly positive influence on the gross production value of Non-SOEs in the long term. Therefore, to promote the healthy and sustainable development of private economy in Wenzhou, the polices maker not only should take many measures to increase private finance products, create some new financial organizations with policy guidance normally, but also expand private finance in supply channels and deepen financial reforms in all around for pushing the development of Wenzhou private financial ecological healthy.

### Introduction

On March 28, 2012, the executive meeting of the state council approved the implementation of the overall scheme of Wenzhou financial comprehensive reform experimental area, which was determined by normalizing the development of private financing, as while as speeding up the development of new financial organizations. Wenzhou government is also actively to build the private capital management companies and service center for private lending registration used for exploring the normalized operating of private lending, which creates a positive policy environment for the development of private financial. With the development of the private finance in Wenzhou, that's had a significant effect on the Non-SOEs and economy, which made it become a hot spot in research literatures. Theoretically, using the theory of information superiority, Lin and Li (1997) demonstrated the advantage of information of private financial institutions on financing for the small and medium enterprise, and put forward that the normalization of the private financial has a crucial function on the improvement of output value of the small and medium enterprises [1]. Shi and YE (2001) has shown that private financing is still an important channel acquiring fund for the small and medium enterprises in Wenzhou [2]. Guo and Liu (2002) pointed that there existed the relationship of mutual benefit between private financial and output value of private enterprise [3]. Yang and Wang (2005) considered the negative effects of private financial in Wenzhou, and examined suggest that private financial in Wenzhou may face with high interest rates risks, financial disputes risks, and so on[4].

Take Hangzhou for an example, Yu and Li (2007) analyzed the symbiotic relationship between folk financial and private enterprises [5]. Lin (2012) pointed that, some problems were produced by private financial restricted the industrial upgrading of the small and medium private enterprises in Wenzhou, which had a negative effect on the improvement of private enterprise output value[6].

Empirically, based on the estimation of the scale of private financial, Cheng (2004) suggest that private finance in Wenzhou city supported the development of private enterprises by regression analysis [7]. Li (2005) measured the scale of underground financial including underground net financial investment, underground capital scale of cross-border flows, underground monetary funds, and underground credit scale [8]. Zhu (2007) showed that the scale

of private financial in Wenzhou city plays a vital role in the improvement of output value of Non-SOEs by empirical analysis [9]. Using the Cob-Douglas production function, the technology of correlation analysis and the least squares method, Li (2013) showed that mutual restriction relationship between private finance and small & medium private enterprises respectively[10].

Although above literatures illustrated the impact of private finance on the output value of small and medium private enterprises in difference angles, there are always two aspects needing to be improved: on the one hand, the scholars rarely analyze the impact of private finance on gross value of industrial output of Non-SOEs in Wenzhou city and not considering the imbalance of supply and demand of private finance; on the other hand, the existence research about the impact of private finance on industrial gross output value of the Non-SOEs in Wenzhou city are lacks of any empirical analysis.

Based on these defects, the paper analyzes that from the angle of supply and demand of private finance, and seeks to examine the how and what the private finance influences on the gross output value of Non-SOEs by using an econometric model and finally put forward some suggests for the development of the private finance of Wenzhou according to the empirical results.

### **Demand of Private Finance for Non-State Owned Enterprises**

The 95% of main economic actors in Wenzhou are Non-SOEs, which are mainly composed of small and medium enterprise. Since the reform and opening of China, the Non-SOEs in Wenzhou have experienced a vigorous development and the demand of capital also has been rising. However, traditional finance institutions are not reluctant to lend money to the Non-SOEs; Hence, the supply of capital is not more enough and become the common phenomenon of credit reluctance, which results in enormous demand of private finance for Non-SOEs in Wenzhou.

#### **a. Why the Non-State Enterprises Need Private Financing**

Enterprises will consider the different kinds of costs when they financing, which can be investigated from two aspects of financial cost and availability (see TABLE1). Under the incomplete capital market, the interest rate only represent nominal financial cost, which does not fully reflect the supply and demand of money and actual available costs, while the limit and capital availability actually reflect the hidden costs of funding.

For the Non-SOEs, the cost of capital availability always outweigh the financial cost, which makes the private lending become an important financing channel for Non-SOEs in Wenzhou . The reason of financing to private finance can be presented two aspects as follows:

Firstly, satisfy the demand of liquid capital. The private lending can solve the seasonal or temporary fund requirement, for example, the printing and packaging enterprises need a large number of money to buy raw materials, semi-finished products or pay wages when they receive orders. As the short production cycle and fast capital turnover, the interest cost of private financial organization is relatively lower than any formal finance institutions.

Secondly, realize the expansion of enterprise scale and industrial upgrading. When enterprises accumulate a certain amount of resources, they will take part in the stage of scale expansion, in which they need large funds for the new products or new technology project to realize industrial upgrading, but its own funds and bank credit cannot also meet the capital demand of enterprise, therefore, private lending has become a popular choice for Non-SOEs in Wenzhou.

**Table1. The Comparison of Financing Channels and Cost for Non-SOEs in Wenzhou**

<b>Financing Channels</b>	<b>Availability</b>	<b>Financial Cost</b>
Owned fund	In the control of present financial status	Low
Rural credit cooperation	Length of maturity is within 6 months Some small and medium-sized enterprises	The interest is higher Than commercial bank
Commercial banks	lack enough guarantee , effective collateral, and the money is very limited	Relatively lower
Private lending	More easily	high

Source: Guo and Liu (2002)

### **b. Demands on Private Financing for Enterprises in Difference Sizes**

With the development of the Non-SOEs in Wenzhou in recent years, the demand of capital of that becomes bigger. Based on the survey data which used random sampling and questionnaire by Guo and Liu (2002), we want to analyze the demand status of private finance under difference sizes, which including small and medium-size private enterprises.

The capital source of Non-SOEs is mainly owned fund, private lending and friends as a shareholder are also important source of fund, while for Non-State owned small and medium-size enterprises, they are more concerned with the control of stock right, rather than stock right itself, family relationship and friendship make little affect on the control power.

By comparing the capital source of enterprises investment, we find that the ratio of owned capital dropped from 65.12% to 58.86%, on the contrary, lending increased from 19.74% to 26.08%, which explained that in the process of scale expansion, the owned fund is difficult to meet the development of Non-SOEs, and result in the demand of bank loan and private lending is on the rise.

For different sizes of Non-SOEs, the funding demand is significantly difference. Larger companies can get credit from banks, while smaller companies mainly choose to private lending, and the moderate companies choose between private lending and bank loan.

As shown in table 2, regardless of the scale of Non-SOEs in Wenzhou, they all have a strong capital requirement. For the Non-State enterprises(1~10million yuan), the proportion of needing to financing from private capital amount to 64% and 55%, while 82.6% of the larger Non-State owned enterprises(above 10 million yuan) choose bank loan, which was attribute to the higher credit and mortgaged property, and select bank lending has a comparative advantage; For the smaller Non-State owned enterprises(below 1 million yuan), 62% of that does not need to private lending, 11.5% of them has loaned from banks, which reflects that bank prefer to lend money to larger companies.

**Table2. The Demand Status of Private Financing for Different Size Enterprises**

<b>Annual sales</b>	<b>Need to private capital</b>	<b>Needn' t to private capital</b>	<b>Unknown</b>	<b>Ever financing to banks</b>
Below 1 million (including 1 million)	31%	62%	8%	11.5%
1~5million (including 5million)	64%	32%	4%	23.4%
5 ~10 million (including10million)	55%	41%	4%	43.6%
Above 10 million	24%	72%	4%	82.6%

Source: Guo and Liu(2002)

### **Supply of Private Finance for Non-State Owned Enterprises**

The form of private finance supply has been changed since 1979, the scale of that have been gradually expanding, the form of organizations and contracts of that also have been become more complexity, so it's a main channel for capital supply now in Wenzhou, But compared with the stronger demand of private finance, the supply is relatively inadequate. Nowadays, the supply of private finance in Wenzhou has been experienced two different development stages: one is the primary stage of unorganized private lending; the other is the advanced stage of organized private finance.

#### **a. Unorganized Private Lending**

The lending person-to-person is the main form of private lending, which exists in anywhere in Wenzhou, and is characterized by flexibility, convenience, little lending quota, big range, large scale, different interest rates, and so on. Parts of private lending are taking place between relatives and friends for the purpose of emergency rather than profit, other is taking place among others for the purpose of profit, and loan interest rate was 3~4 times higher than the bank charged on same interest rate.

The lending among enterprises is also an active form of private lending, which is characterized by large amount, short duration and low interest rates. The time of lending is generally concentrated on the production peak or buying season, and the objects of that are mainly those customers who contact closely on the business and trust each other.

Raising fund is characterized by large amount, high interest rate and long maturity. Due to the strictly regulate and supervise on illegal fund-raising in recent years, to some extent all kinds of fund-raising activities have been decreased, but some private enterprises internal still engage to raise fund.

#### **b. Organized Private Finance**

The private finance was taken the form of financial institutions for financial transactions, but these forms are underground or semi-underground state without the regulatory authorities' examination and approval, which mainly four patterns.

The underground banks of Wenzhou are generally adopted the form of joint-stock, which mostly concentrated in the villages and towns, and their lending objects are generally own township enterprises. The lending and deposit rates of Banks are higher than commercial Banks, at the highest interest rates on deposit interest rate is 300% of commercial banks, and loan interest rate is higher. Generally, the loan interest rate of private capital is 0.8%~1.5% monthly in Wenzhou, the loan interest of Bank is 1.5 times of the loan interest of common commercial banks, or even higher.

The production and operation is seasonal in Wenzhou, take garment industry as an example, the fourth quarterly is busy season of production and sales, so the demand of capital is huge. For clothing enterprises development, this period is the peak of bank lending and private lending, but the private lending is still difficultly. At this point, some enterprises choose to establish financing “mutual fund of clothing enterprises in Wenzhou” to help those enterprises over the difficulty.

Mutual funds generally is led by chamber of commerce, based on the principle of voluntary participation, preliminary suggests that the amount of each fund is 500000 yuan, the total amount of financing is generally 20~50 million yuan. Since 2010, other industries (such as metal manufacturing) in Wenzhou have set up mutual funds to help small and medium-size enterprises to solve the problem of financing difficultly.

First batch of small loan company in Wenzhou formally established in October 2008, the sponsors are from Ruian, Yongjia and Cangnan respectively, who are local bosses of private enterprises. Due to the high entry barriers of the small loan company, the amount of small loan companies in Wenzhou is limited, which may leads to low contribution to the private financial scale.

Other organization patterns including Pawnshop, Private Loan-Borrow Center, Private Capital Management Company, Rural Community Fund and so on, in which that some forms are strong concealment, and not easily exposed without major or big cases.

## Empirical Analysis

### a. The Model

To investigate the possible effects of private finance on gross value of Non-SOEs in Wenzhou, the paper set a model to examine the impact of private financial on Non-SOEs according to Li(2005) and Li(2013).The econometric model takes the following form:

$$\ln PEQ_t = a_0 + a_1 \ln PEQ_{t-1} + a_2 \ln PFQ_t + e_t \quad (1)$$

Where  $\ln PEQ_t$  is the natural logarithm of gross industrial output value of Non-SOEs.  $\ln PFQ_t$  is the natural logarithm of private financial scale,  $\alpha_0$  is constant term,  $\alpha_1$ 、 $a_2$  are parameters will be estimated,  $\varepsilon_t$  is random error term. We expect that  $\alpha_2 > 0$  and significantly level at 95%, which indicates that the expansion of private financial scale can promote the increase of industrial gross output value of Non-SOEs; While  $\alpha_2 < 0$  but not significantly, that's show that the expansion of private financial scale restrain the increase of industrial gross output value of Non-SOEs; If  $\alpha_2 > 0$  and non-significantly, we may think that the expansion of private financial scale is helpful to increase of industrial gross output value of Non-SOEs, but not obviously.

### b. Data and Descriptive

As a result of concealment of private finance, it is difficultly to do statistics accurately and beyond the scope of official statistics. Presently, private financial scale is calculated by method of  $\theta$  value in academia, but because of lack the latest data, it's difficultly to calculate  $\theta$  value from 2012 to 2014 in the paper, so we continue to use the private financial scale that Li (2013) has estimated in 2013, which is denoted by PFQ, and the period is from 1999 to 2011.

In view of the fact that 95% of the enterprises are Non-SOEs in Wenzhou, though they are called by “Limited Liability Company” or “Joint Stock Limited Company”, but actually they are private enterprises, and the source of loan is still private finance. Hence, using the data of “industrial economy” in the “industry and construction” of “statistics bulletin of the national economy and social development in Wenzhou” to estimate the industrial gross output value of Non-State owned enterprises; the period is still from 1999 to 2011.

**Table3. Descriptive Statistical**

	mean	std	min	median	max
PFQ	1345.5	387.6	682.9	1418.5	1943.4
PEQ	3832.9	1440.1	1502.3	3970.9	6290.9

As shown in Table 3, the minimum scale of private financial is 68.2 billion yuan, the maximum is 194.3 billion yuan, the average is 134.5 billion yuan over the period 1999-2011, which is a slight decline in 2009; However, the minimum industry gross output value of Non-SOEs is 150.2 billion yuan, the maximum is 629 billion yuan, which is declined in 2009 and then rebound, the annual mean is 383.2 billion yuan.

### c. Stationary Test

Stability test for all variables is needed for avoiding “spurious regression” problem before analysis; the common stability test method is ADF. Meanwhile, in order to eliminate the phenomenon of heteroscedasticity, we should logarithmic transformation and are denoted by  $\ln PEQ$  and  $\ln PFQ$  respectively.

Table 4 reports the result of ADF statistics and the difference Critical value. In Table 4, we can see that ADF statistical value of  $\ln PEQ$  and  $\ln PFQ$  is greater than that of 5% Critical Value, and results show that both series are regarded as non-stationary; However, after first order difference, both variables are stationary by stationary test, that is I(1); Further, we need to examine the long term relationship of  $\ln PEQ$  and  $\ln PFQ$  by co-integration test to determine the effectiveness of OLS regression under the I(2). Using ADF to examine the stationary of residual sequence by “two-step” for the regression equation, the value is -1.9795 and smaller than -1.6011 at 10% Critical Value, that is show that the residual is stationary, so we can hold that  $\ln PFQ$  and  $\ln PEQ$  have a long term relationship of co-integration.

**Table4. ADF Test Results**

	ADF	1%	5%	10%	stationary
$\ln PFQ$	-3.0969	-5.2953	-4.0081	-3.4607	no
$\Delta_2 \ln PFQ$	-3.3048	-2.8167	-1.9823	-1.6011	yes
$\ln PEQ$	-2.5343	-5.2953	-4.0081	-3.4607	no
$\Delta_2 \ln PEQ$	-5.1702	-2.8167	-1.9823	-1.6011	yes

Notes:  $\Delta_2$  is representing second order difference.

### d. Empirical Results

The dataset we study builds on that used in Li (2013), which cover the period 1999-2011 for private finance and Wenzhou statistics bulletin for the Non-SOEs. Using the Least Square Method to estimate the equation (1), and results as flows:

$$\ln PEQ = -0.2885 + 0.2893 \ln PEQ(-1) + 0.8538 \ln PFQ [AR(2) = -0.2041] \quad (2)$$

$$(-0.9283) \quad (2.8468) \quad (5.9504)$$

$$R^2 = 0.9450, \bar{R}^2 = 0.9175, DW = 1.8638, F = 37.3786$$

As shown in equation (2),  $\ln PFQ$  makes a positive effect on  $\ln PEQ$ , long term elasticity value is 0.8538, which indicates that the industrial gross output value of Non-SOEs will increase 0.8538% with the scale of private finance increase 1%, which means that the scale of private finance contributes to improve the industrial gross output value of Non-SOEs in Wenzhou.

As above analysis, the scale of private finance (PFQ) has a significantly positive effect on the industrial gross output value of Non-SOEs (PEQ) in long term, which means that increase the

scale of private finance is useful for the enhance the gross output value of Non-SOEs, moreover for the development of private economic in Wenzhou.

### **Conclusion**

The paper analyzed the demand and supply of private finance in Wenzhou from the perspective of demand-supply in the first, then builds an econometric model to make an empirical analysis in terms of the data of private financial scale and industrial gross output value of Non-SOEs, the conclusion are made and some policy implications are further suggested:

1. There are exist big gap between supply of private finance and demand of raising fund for enterprises in Wenzhou. According to the relative survey, above 55% of the Non-SOEs whose annual sales is in 1~10 million need private finance, 64% of that whose sales below 1 million or above 10 million, need not private finance, 83% of the big enterprises directly apply for loans from commerce banks; on the contrary, the supply channel of private finance in Wenzhou is relatively limited. Therefore, in order to satisfy the great private financial demand in Wenzhou, the policy maker not only should enrich the financial products and organizational forms, widen the channel of capital supply, but also seize the opportunity of Wenzhou financial comprehensive reform, strengthen the financial reform and provide more preferential policies, especial create some “new finance” organizations within the scope of controllable risk to active the mass private capital for supporting the development of the real economy.

2. The development of private economy needs to turn to the strong support of private finance in Wenzhou. The results of empirical analysis suggest that the scale of private finance increase 1%, the industrial gross output value of Non-SOEs will rise 0.86% in the long time. Therefore, in order to promote the industrial upgrade and improve the value of industrial gross output value of Non-SOEs, as well as the development of economy in Wenzhou, it's crucial to take full advantage of the positive economic effect of private finance, guide and normalize the development of private finance for building a sound private financial ecology, realizing the support function of private finance to the Non-state owned enterprises.

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