A Legal Mechanism to Alleviate the Dilemma of Financing Constraints Based on the Quasi-Natural Experiment of the Promulgation of the Real Right Law

Shuchen Yang

Honors college, Nanjing Normal University, Nanjing, China

3306742524@qq.com

Abstract. This paper takes the promulgation of the Real Right Law as a quasi-natural experiment and uses the Differences-in-Differences (DID) Method to explore the influence of security interest reform on Financing Constraints. It is found that the promulgation of the Real Right Law has a significant alleviation effect on Financing Constraints, especially for those enterprises previously caught in financing constraints due to the lack of fixed asset for mortgage. The heterogeneity analysis indicates that the financing constraint of the Real Right Law is less significant on technology-intensive enterprises, and that SOEs benefit more from the promulgation of the Real Right Law than non-SOEs.

Keywords: Financing Constraints; Legal mechanism; Real Right Law; Quasi-natural experiment.

1. Introduction

The report to the 20th CPC National Congress states that "China will improve the functions of the capital market and optimize the environment for enterprise development". At the micro level of the economy, one of the major ways to build a sound capital market and a favourable business environment is to alleviate the Financing Constraints. In terms of how to alleviate Financing Constraints, a series of studies of LLSV, the pioneers in the field of law and finance, found that in countries where the legal system emphasizes private property rights, supports private contractual arrangements and protects the legal rights of investors, savers are more willing to finance enterprises and the financial markets are more active, which means that external financing needs to be developed and investors need to be protected by law and regulation.

Fazzari (1988) was the first to discuss the problem of Financing Constraints, and his definition of financing constraints is "when an enterprise needs investments, due to the imperfection of the market mechanism, there is a big difference between the cost of funds from internal and external financing, and the cost of external financing is higher, which may lead to more reliance on internal funds, thus creating external financing constraints". He demonstrated the positive effect of financing constraints on cash flow-investment sensitivity using grouped regression method and based on the perspective of corporate investment decision. Kaplan and Zingales (1997) applied the logistic regression method and selected five financial indicators such as cash flow and Tobin's Q to establish the KZ index to measure financing constraints. Lamount (2001) used the KZ index to measure financing constraints and found an inverse relationship between financing constraints and market value. Whited and Wu (2006) adopted the GMM method to estimate the coefficients of investment Euler equation, selected six financial indicators such as the logarithm of total assets and the ratio of cash flow to total assets to construct the WW index, and found that the return on stocks of enterprises with stronger financing constraints had the same fluctuation trend, which demonstrated the influence of financing constraints on the return on stocks. Hadlock and Pierce (2007) argued that both KZ and WW indices have endogeneity problems, and they constructed the SA index by following the basic method of KZ index and selecting only two indicators, namely, enterprise size and age. Xuewen Kuang (2009) adopted the logistic regression method and the multivariate discriminant method to create the FC index using five financial indicators such as gearing ratio and net return on assets, and found a significant negative correlation between financing constraints and the level of cash holdings using multiple regression.

This paper focuses on researches based on the perspective of legal mechanisms. Feifei Wang et al. (2019) selected the KZ index to describe the financing constraints and applied the logistic regression to demonstrate that the increase in auditor's legal liability due to the conversion of accounting firms is conducive to alleviating Financing Constraints. Pablo (2022) adopited the GMM method to investigate the dependence of family firms on internal financing in two regions (East Asia and Western Europe) with different levels of legal system perfection, and found that family firms in regions with better legal systems are less dependent on internal financing (as defined by Fazzari (1988). Yongdong Shi (2022) applied the DID method to study the impact of environmental regulations brought about by the introduction of the new Environmental Protection Law on the financing constraints of heavy polluters and came to the opposite conclusion than the expected one - instead of exacerbating the financing constraints of heavy polluters, the new Environmental Protection Law solved the financing constraints to some extent by reducing the agency costs of heavy polluters and alleviating information asymmetry.

Under this background, this paper, upon the analysis of the data of the related A-share listed enterprises from 2004 to 2010 using the DID method and from the perspective of law and finance, attempts to identify the influence of the promulgation of the Real Right Law on Financing Constraints and the heterogeneity of this kind of influence among different factor-intensive and different ownership enterprises. Under the current macroeconomic risk and financing dilemma of a large number of enterprises, research and discussion on how to alleviate financing constraints are necessary to accomplish the goal of optimizing the development environment of enterprises and revitalizing the real economy. Since the law and finance is a new field, more research has been conducted on the alleviation of financing constraints from the economic level, while relatively less research has been conducted on how to alleviate financing constraints from the perspective of legal institutional construction and legal environment improvement. The law is an important part of the financial infrastructure and an important factor in determining financial operation and security, and it has become a consensus that the law has an important influence on finance. Therefore, this paper is an innovative attempt to find inspiration on how to alleviate financing constraints at the legal level from an interdisciplinary perspective, as well as a useful supplement to the research in the field of law and finance.

2. Theoretical Analysis and Research Hypothesis

This paper argues that the promulgation of the Real Right Law has a alleviation effect on Financing Constraints. The Real Right Law newly adds new types of pledges such as account receivable pledges, equity pledges, fund share pledges, and bond pledges, which expands the scope of securable assets and makes the operable space for enterprises, especially those lacking traditional pledges such as fixed assets, to use securable assets for financing larger (Jiang Wei and Yao Wentao 2016). Moreover, it promotes greater negotiating space for borrowers and lenders to enter into secured financing contracts, and improves the likelihood of corporate debt financing (Campello and Larrain, 2016).

From the perspective of investor protection, the Real Right Law stipulates that private real rights are protected by law and may not be infringed by any entity or individual, which recognizes the protection of private property of enterprises at the legal level, limits and reduces the risk of government confiscation, strengthens the value of mortgages when enterprises are engaged in external financing, and facilitates the formation of stable expectations and increases the lending willingness of economic agents involved in mortgage lending. Meanwhile, the Real Right Law stipulates that the holder of the security real right has the right to priority payment when the debtor fails to perform its obligations at maturity, which guarantees the creditor's lien, strengthens the rights of creditors and investors, ensures the maximum compensation for creditors and investors in case of corporate default, and increases the investment willingness of creditors and investors.

In addition, the Real Right Law removes the prohibition of excess mortgage, which provides the possibility of creating multiple mortgages on the same collateral, and thus enables enterprises to

improve the efficiency of asset utilization, fully utilize the mortgage assets and promote capital circulation.

Finally, the Real Right Law improves the procedures of the realization, establishment and supervision of the security real right, and the dispute handling mechanism of mortgage loans is more optimized, which reduces the cost of supervision and transaction, and alleviates the financing constraints.

In view of this, this paper proposes the first research hypothesis:

H1: The promulgation of the Real Right Law can alleviate the Financing Constraints.

Before the promulgation of the Real Right Law, the bank loans relied heavily on fixed assets such as houses and lands, and enterprises with few fixed assets often faced financing constraints due to the lack of mortgageable assets and difficulties in obtaining bank loans (Gregory and Tenev, 2001; Ayyagarietal. 2010). The promulgation of the Real Right Law, however, has expanded a variety of new types of pledges and broadened the scope of securable assets, thus effectively alleviating the financing constraints of enterprises lacking fixed assets, and thereby triggering the second hypothesis:

H2: Compared with enterprises with a higher proportion of fixed assets, the alleviation effect of the promulgation of the Real Right Law on the financing constraints of enterprises with a lower proportion of fixed assets is more obvious.

The Article 227 of the Real Right Law contains provisions on the pledge of IPRs such as trademark, patent, copyright, etc., stipulates that the pledge of IPRs shall be subject to a written contract, and the pledge shall be established when the relevant authorities handle the pledge. And after the pledge of IPRs, the pledgee shall not transfer or allow others for use, except with the consent of the pledgee and the pledgee in consultation. The price received by the pledgee from transferring or allowing others to use the property rights in the pledged intellectual property shall be paid in advance to the pledgee or withdrawn. However, the special nature of intellectual property itself determines that the relevant provisions in the Real Right Law cannot be fully applied to it. While the value of traditional property as security is determinable, the intangible and intellectual nature of intellectual property makes it difficult to fix its value, and its value may fluctuate according to social needs and the development of social economy. However, how to assess the value of intellectual property during the pledge period and how to deal with the loss to the pledgee caused by the fluctuation of the value of intellectual property during the pledge period are not reflected in the Real Right Law. The Real Right Law also stipulates that the pledgee shall not allow others to use the pledged intellectual property without the consent of the pledgee. This article applies to traditional pledges because the value of traditional tangible pledges depletes due to use, but the intellectual property, the intangible asset, does not. Therefore, this provision is rather laggy, violates the principle that the pledged property is in the possession of the pledgee, and restricts the debt financing of enterprises using IPRs. In addition, the Real Right Law is unable to respond to the much-needed problems of repeated pledges of IPRs, pledges of unfinished works, pledges of patent application rights, and unregistered trademarks. In summary, the provisions of the Real Right Law on the pledge of IPRs are flawed and do not improve the problem of difficult pledge of IPRs. Compared with labor-intensive and capital-intensive enterprises, a significant feature of technology-intensive enterprises is that intangible assets represented by intellectual property occupy a large proportion, which means that the Real Right Law has limited alleviation of financing constraints on technology-intensive enterprises.

H3: Compared with capital-intensive and labor-intensive enterprises, the alleviation effect of the introduction of the Real Right Law on technology-intensive enterprises is smaller, and the alleviation effect of the introduction of the Real Right Law on the financing constraints of SOEs is more obvious than that of non-SOEs

3. Empirical Analysis

3.1 Research Design

3.1.1 Sample selection and data source

In order to inspect the influence of the promulgation of the Real Right Law on Financing Constraints, this paper selects A-share listed companies as the research object. In terms of data processing, this paper excludes financial enterprises and ST enterprises, thus obtaining the balanced panel data of 606 enterprises from 2004 to 2010. The data in this paper are obtained from the CSMAR database.

3.1.2 Model Setting

This paper refers to the study on the Real Right Law by Xuesong Qian (2021) and adopts the DID method to explore the influence of the promulgation of the Real Right Law on Financing Constraints, for which the following econometric model is constructed:

$$FCi,t=\beta1\times Treatedi\times Post07t+\beta2Post07t+\beta3Treatedi+\beta4Controlsi,t+\lambda t+\gamma i+\varepsilon it \quad (1)$$

In the model of this paper, i refers to enterprise, t refers to time, FCi,t refers to financing constraint index, Treatedi refers to grouping variable with 1 for the experimental group and 0 for the control group, Post07t refers to time dummy variable (the "Property Rights Law" was introduced in 2007, so the value is 0 before 2007 and 1 in 2007 and after) [All data selected in this paper are from December 31 of each year, thus the year 2007 is classified as after the promulgation of the Property Law], λt refers to the time fixed effect, γi refers to the individual fixed effect, Controlsi,t refers to the control variable, and εit refers to the residual of the model. The focus of this paper is on the coefficient of the cross product term Treatedi×Post07t, i.e., $\beta1$, which reflects the change in the difference in the level of financing constraints between the experimental group and the control group before and after the promulgation of the Real Right Law.

3.1.3 Definition of Variables

1). Explained Variables

As mentioned in the previous section, the main common indicators for measuring the level of financing constraints are SA index, KZ index, FC index and WW index, and FC index is selected as the explained variable in this paper. The specific calculation formula of the FC index is shown in equation 2:

$$FC=-3.748+8.992LEV-3.124NWC-63.852ROE+1.992MTB-1.490DIV \quad (2)$$

2). Explanatory Variables

The Treated is a grouping variable, with 1 for the experimental group and 0 for the control group. This paper uses the proportion of fixed assets of enterprises to total assets for grouping. For this purpose, the average value of the proportion of fixed assets to total assets of enterprises in the two years before the promulgation of the Real Right Law (2006 and 2005) is used as the grouping criterion in this paper, and the top 50% of enterprises with a higher proportion of fixed assets are the control group, and the bottom 50% are the experimental group. Post07 is the time dummy variable, with 0 for pre-2007 and 1 for 2007 and thereafter. Treated×Post07 is the core explanatory variable of this paper.

3). Control Variables

Based on the existing literature, the control variables (Controls) in this paper mainly include total assets, net operating cash flow, board size, and return on assets (ROA).

The definitions and categories of the variables are listed in the table below.

Table 1. Definition of Variables

Classification	Variable	Description
Explained Variable	FC	An indicator measuring the level of financial constraints, the larger the indicator, the severe the financial constraints are
Explanatory Variable	Treated	A Group variable which mark the experimental group as 1 and the control group as 0
	Post07	Time dummy variable, if the sample is in 2007 or later, then it is 1, otherwise it's 0.
Control variable	lntotalassets	Natural logarithm of total assetsm,nblzx Total assets refer to all assets owned or controled by the firm that can bring benefits
	Cashflow	Net operating cash flow divided by 10 to the eighth power,net operating cashflow maens The remaining cash flow after deducting costs related to long-term investments and securities investments from the profits obtained by the enterprise from operating activities
	Boardsize	Number of the board
	ROA	Return on assets , An indicator that measures how much net profit each unit of assets can bring

3.2 Descriptive Statistics

The results of descriptive statistics are reported in Table 2. The mean value of FC, the corporate financing constraint indicator, is 0.443, the minimum value is 0.001, and the maximum value is 0.996, with a relatively large fluctuation range, which indicates that the enterprises are facing certain financing constraints, and the differences in the financing constraints faced are obvious.

Table 2. Results of Descriptive Statistics

Variable	Sample size	Mean Value	Standard deviation	Minimum Value	median	Maximum Value
FC	4242	0.443	0.201	0.002	0.460	0.966
Treated	4242	0.502	0.500	0.000	1.000	1.000
Post07	4242	0.571	0.495	0.000	1.000	1.000
lntotalassets	4242	8.044	1.110	5.230	7.894	13.800
Cashflow	4242	6.834	53.685	-104.377	1.363	1712.620
Boardsize	4242	9.518	2.071	0.000	9.000	18.000
ROA	4242	0.041	0.051	-0.401	0.034	0.400

3.3 Regression Results and Analysis

Table 3 reports the results of the regression between the promulgation of the Real Right Law and the Financing Constraints, and the coefficient β1 of the cross-product term is significantly negative at the 1% level, which indicates that the promulgation of the Real Right Law effectively alleviates the Financing Constraints with low fixed assets compared to those with high fixed assets, and this is consistent with H1 and H2. This is mainly because before the promulgation of the Real Right Law, enterprises with low fixed assets would face serious financing constraints due to the lack of effective pledges. The reform of security rights represented by the promulgation of the Real Right Law expands the types and scope of securable assets and reduces the transaction costs of secured debt, thus

alleviating the financing constraints of enterprises with low fixed assets. In addition, the inclusion of control variables improves the adjusted R^2 of the model and makes the model more complete.

Table 3. The Promulgation of the Real Right Law and Financing Constraints

变量	FC	FC
	(1)	(2)
Treated*Post07	-0.093*** (-6.716)	-0.425*** (-28.420)
Post07	0.077*** (7.702)	0.402*** (49.530)
Treated	0.168*** (16.364)	0.483*** (51.680)
lntotalassets	0.001 (-0.731)	
Cashflow	-0.001*** (-9.876)	
Boardsize	0.033*** (19.916)	
ROA	-0.028 (-6.716)	
Individuality	Control	Control
Time	Control	Control
Adjusted R square	0.784	0.663

Note: Values in brackets are t-values, *, **, *** indicate significant at the 10%, 5%, and 1% levels, respectively.

3.4 Robustness Tests

3.4.1 Parallel Trend Test

The parallel trend hypothesis is a prerequisite for the use of the DID method, i.e., before the promulgation of the Real Right Law, the experimental group and the control group have the same trend of change, yet after the implementation of the Real Right Law, there are different trends in the experimental group and the control group. Only by satisfying the parallel trend hypothesis can we ensure the exogeneity of external shocks and exclude the possibility caused by other events, so as to effectively assess the policy effects. Fig. 1 reports the results of the parallel trend test, and as the data used in this paper are from the end of each year, 2007 belongs to the year after the promulgation of the Real Right Law. It can be seen from the figure that until 2006, i.e., before the promulgation of the Real Right Law, the financial contract (FC) of both the experimental and control groups have the same trend, and the experimental group (i.e., group with lower fixed assets) suffers more severe financing constraints. After the implementation of the Real Right Law, there are different changes in the level of financing constraints in the samples of the two groups. Compared with the control group, the financing constraints of the experimental group is alleviated, which indicates that the model in this paper is consistent with the parallel trend hypothesis and verifies both H1 and H2.

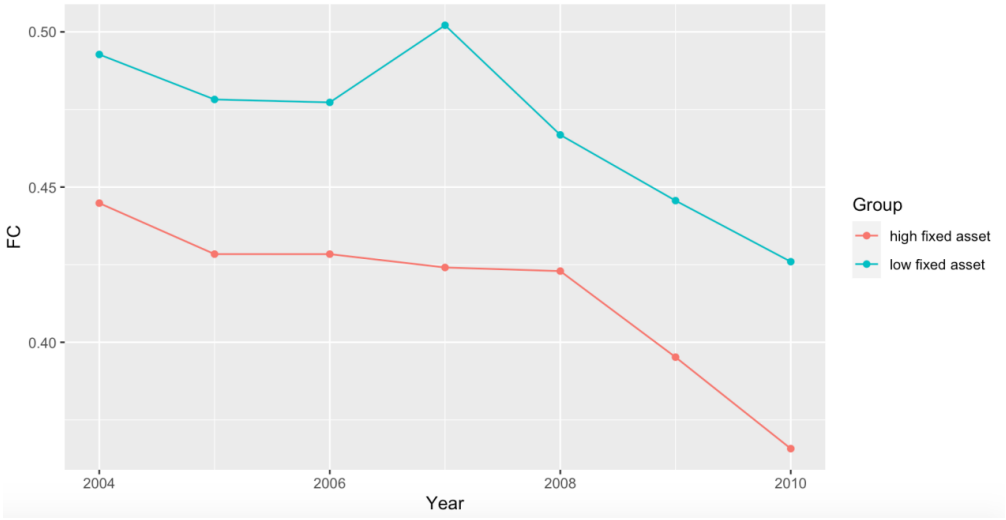


Figure 1. Results of Parallel Trend Test

3.4.2 Replacement of Grouping Criteria

The previous grouping method used in this paper was to classify the enterprises in the top 50% of fixed assets as the control group and the bottom 50% as the experimental group. In the robustness tests section, this paper changed the previous grouping method and conducted the regressions analysis with the top 25% of fixed assets as the control group and the bottom 25% as the experimental group. Table 4 reports the regression results, and the coefficient of the cross product term remains significantly negative.

3.4.3 Replacement of the Explained Variables with the Continuous DID

Since there are many indicators to measure the level of financing constraints, the paper replaces the explained variables and re-runs the regression to ensure stability.

In this paper, the KZ index was chosen to measure the financing constraints, and the previous regression was repeated. The calculation formula of the KZ index is shown below:

$$KZ=-1.001*Cashflow+0.238*Q+3.139*Lev+39.367*Div-1.315*Casholding \quad (3)$$

Table 4 shows the regression results of the KZ index. It can be found that the coefficient of the cross product term is still significantly negative, which again verifies both H1 and H2, and indicates that the conclusions of this paper are still valid when the KZ index is used to measure the financing constraints.

In addition, in order to observe the continuity of the policy effect and the influence of the promulgation of the Real Right Law on all enterprises, this paper also replaces the SA index to construct a continuous DID model. The model construction and the calculation of the SA index are given by Eq. 4 and Eq. 5:

$$SAi,t=\beta0+\beta1\times Post07t+\beta4Controlsi,t+\lambda t+\gamma i+\varepsilon it \quad (4)$$

$$SA=0.043*lnsize^2-0.04*age-0.737*lnsize \quad (5)$$

Figure 2 and Table 5 presents the parallel trend test results and regression results, respectively: it can be seen that the Real Right Law has a alleviation effect on Financing Constraints, which has verified H1.

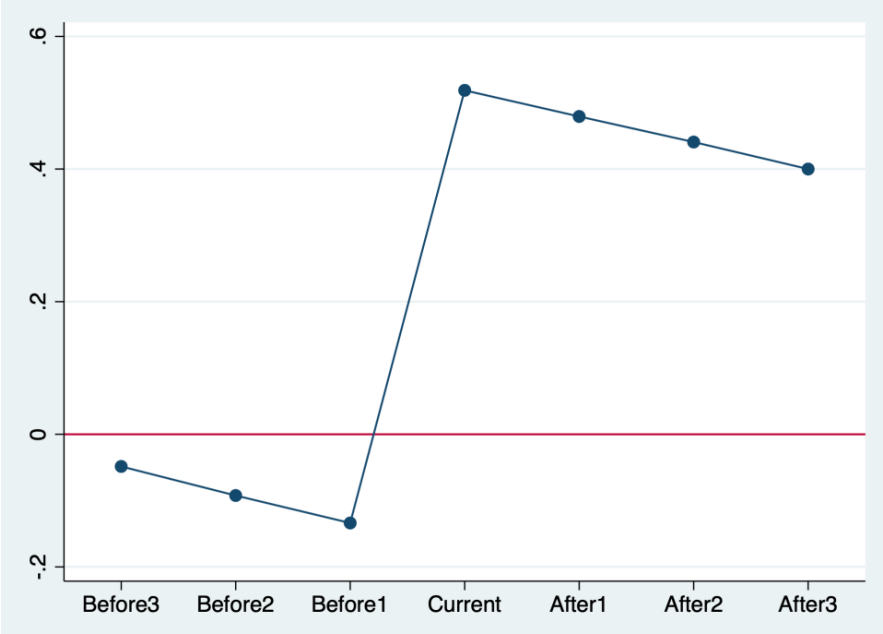


Figure 2. Results of Continuous DID

Table 4. Results of Robustness Tests

变量	FC	FC	变量	KZ	KZ
	(1)	(2)		(1)	(2)
Treated*Post07	-0.085*** (-4.462)	-4.108*** (-21.920)	Treated*Post07	-0.247* (-25.917)	-4.090*** (-30.980)
Post07	0.007*** (4.922)	2.001*** (19.500)	Post07	-1.854*** (-25.917)	2.007*** (27.700)
Treated	0.189*** (13.435)	4.579 (38.620)	Treated	0.668*** (9.172)	4.342*** (52.060)
lntotalassets	-0.003 (-1.045)		lntotalassets	0.406*** (25.851)	
Cashflow	-0.001*** (-6.976)		Cashflow	-0.005*** (-10.316)	
Boardsize	0.032*** (14.357)		Boardsize	0.116*** (9.886)	
ROA	0.179 (1.801)		ROA	-0.143*** (-29.218)	
Individuality	Control	Control	Individuality	Control	Control
Time	Control	Control	Time	Control	Control
Adjusted R square	0.774	0.537	Adjusted R square	0.802	0.512

Note: Values in brackets are t-values, *,**,*** indicate significant at the 10%, 5%, and 1% levels, respectively.

Table 5. Results of Continuous DID Estimation

Variable	SA
Post07	-0.228*** (-63.570)
lntotalassets	-0.135*** (-75.630)
Cashflow	0.001*** (17.450)
Boardsize	0.011*** (11.990)
ROA	-0.016 (-1.200)
Cons	-2.547*** (-152.730)
Individuality	Control
Time	Control
Adjusted R square	0.756

Note: Values in brackets are t-values, *,**,*** indicate significant at the 10%, 5%, and 1% levels, respectively.

3.5 Heterogeneity Analysis

This paper has explored the heterogeneity based on the previous continuous DID model constructed upon the SA index, which focuses on the heterogeneity of the alleviation effect of the Real Right Law on Financing Constraints among different factor-intensive enterprises and among enterprises with different ownership.

3.5.1 Heterogeneity Analysis of Different Factor-Intensive Enterprises

This paper has referred to the grouping method of Tong Lu and Yin Dang (2014) and classified all enterprises in the sample into technology-intensive, labor-intensive, and capital-intensive according to their factors. The specific classification is shown in Table 6.

Table 6. Classification of Industries by Factor-intensive Type

Labor-intensive	Capital intensive	Technologu_intensive
A. Agriculture, forestry, animal husbandry and fishery B. Mining industry	C3. paper industry	C5. Electronics industry
C0. Food and Beverage C1. Textile clothing ad fur	C4. Petroleum, chemical, plastic and metal industries	C7. Machinery, equipment, and instrument industries
C2. Wood and furniture D. Production and supply of electricity, gas and water	C6. Metal and non-metal	C8. Pharmaceutical and Biological Products Industry
E. Construction F. Transportation and warehousing industry	J. Real estate	C9. Other manufacturing industries
H. Wholesale and retail trade L. Communication and Cultural industry	K. Social service industry	
M.Comprehensive category		

In this paper, group regressions were conducted for technology-intensive, labor-intensive, and capital-intensive enterprises, and the regression results are shown in Table 7:

Table 7. Estimated Results for Industry-based Groups

Variable	SA	SA	SA
	Larbor-intensive	Capital -intensive	Technology-intensive
Post07	-0.350*** (-43.520)	-0.350*** (-36.340)	-0.308*** (-32.190)
lntotalassets	-0.025*** (-9.370)	-0.025*** (-9.370)	-0.090*** (-28.050)
Cashflow	0.001*** (31.650)	0.001*** (31.650)	0.002*** (26.720)
Boardsize	0.011*** (6.900)	0.011*** (6.900)	0.011*** (5.460)
ROA	0.177*** (3.880)	0.177*** (3.880)	-0.052* (-1.700)
Cons	-3.414*** (-149.950)	-3.414*** (-149.950)	-2.871*** (-100.720)

It can be seen that the alleviation degree of financing constraints for capital-intensive and labor-intensive enterprises is almost equal, while the alleviation effect of the Real Right Law on financing constraints for technology-intensive enterprises is smaller compared to capital-intensive and labor-intensive enterprises.

The main reason for the weak alleviation effect of the Real Right Law on the financing constraints of technology-intensive enterprises is that the relevant provisions of the Real Right Law are not applicable to the pledge of IPRs. Although the Real Right Law has improved the procedures of pledge and security, expanded the scope of securable assets, and included accounts receivable into the securable assets, it has not made appropriate provisions for IPRs, which is a special asset with the characteristics of intangibility, timeliness and high risk. From the perspective of the pledgee, the Real Right Law cannot solve the loss to the pledgee caused by the floating value of IPRs brought about by economic development and changes in social demand, nor can it cope with the potential risk that the intellectual property pledge may lose its security due to the entry of knowledge into the public domain, which makes investors reluctant to accept the intellectual property pledge. From the perspective of the pledgor, the pledge of IPRs may affect the exercise of the pledgor's property right to IPRs, and may affect the effective use of IPRs for debt financing by enterprises, so IPRs cannot effectively solve the problem of difficult pledge of IPRs. And one of the distinctive features of technology-intensive enterprises is that IPRs accounts for a relatively large proportion of their assets, so the alleviation effect of the Real Right Law on financing constraints of technology-intensive enterprises may be limited.

3.5.2 Classification by Different Enterprise Nature

In this paper, all enterprises were divided into SOEs and non-SOEs, and group regressions were conducted. The regression results are shown in Table 8:

The regression results showed that the alleviation effect of financing constraints brought about by the promulgation of the Real Right Law was more obvious for SOEs than for non-SOEs, which may be due to the fact that SOEs were more sensitive to policies and regulations and more adept at using them than non-SOEs.

Table 8. Estimation Results of Enterprise Grouping by Nature

Variable	SA	SA
	State-owned enterprise	Non State-owned enterprise
Post07	-0.351*** (-60.900)	-0.312*** (-26.170)
lntotalassets	-0.024*** (-13.050)	-0.074*** (-21.550)
Cashflow	0.001*** (39.550)	0.001*** (3.230)
Boardsize	0.011*** (9.920)	0.018*** (6.910)
ROA	0.035 (1.260)	-0.013 (-0.440)
Cons	-3.383*** (-200.900)	-3.082*** (-96.760)

4. Conclusion and Policy Recommendation

The main conclusions of this paper, analyzed by the DID method, are as follows: Firstly, the promulgation of the Real Right Law does alleviate the corporate financing constraint, and the alleviation effect of the Real Right Law on the financing constraint is more obvious for the enterprises with lower original fixed assets as compared to those with higher original fixed assets. Secondly, compared with labor-intensive and capital-intensive enterprises, the promulgation of the Real Right Law has a lower alleviation effect on the financing constraints of technology-intensive enterprises.

Finally, based on the conclusions of this paper, we hereby propose the following policy recommendations:

First of all, the law is a major part of the financial infrastructure, and an important factor in determining the quality of financial operations and security. If a country's legal system gets more perfect, the protection of investors will be more adequate and effective, the market value of enterprises will be greater, the liquidity will be higher, the ownership will be more decentralized, the financing cost of the whole society will be lower, the financing obstacles of enterprises will be smaller, the financial market and finance will be more developed and efficient, and thus the financial system will be more efficient. In essence, the difference in the level of financial development of each country is the difference in the degree of legal protection for investors. To achieve the development of finance in China, it is necessary to establish a good legal system to effectively and equally protect the rights of investors. Only in this way can investors invest without worries and the basic conditions for financial development be established.

Secondly, although the promulgation of the Real Right Law has improved the mechanism of security interests, there are still imperfections and inapplicability with regard to IPRs. In order to make our legal mechanism more adaptable to the needs of the increasingly important pledge of IPRs, the rights and obligations of the pledgor and the pledgee in the Real Right Law should be adjusted on a timely manner, granting the pledgor the property rights over the pledgee, as well as the right to transfer or permit others to use the pledged IPRs. Meanwhile, the pledgor should be required to pay annual fees during the period of patent pledge to ensure the validity of the pledge and avoid losses caused to the pledgees due to the unilateral termination of the patent by the pledgor, so as to find a balance between the guarantee of the full use of IPRs and the protection of the interests of creditors. In addition, the provisions of the pledge of IPRs should reflect how to assess the value of IPRs during the pledge period and how to deal with the losses caused to the pledgee due to the fluctuation of the

value of IPRs during the pledge period, and a unified standard for assessing the value of pledged IPRs should be formed throughout the society. In summary, only by promoting the intellectualization of the Real Right Law can we give full play to the advantages of IPRs in the context of the knowledge economy.

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