Do Selective Industrial Policies Reduce the Tendency of Enterprises to Economic "Off real to virtual"--Evidence based on the qualification of high-tech enterprises

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Abstract. The accreditation of high-tech enterprises is an important policy which is put forward by the state to support and encourage the development of high-tech enterprises. This paper takes the policy of high-tech enterprises accreditation as the research object, adopts the staggered difference in differences (DID) research method, and based on the relevant data of A-share listed companies from 2007 to 2021 to explores the relationship between the selective industrial policies and the tendency of enterprises to economic "off real to virtual". The economic "off real to virtual" of enterprises is manifested in the rise of the financial level of enterprises. When an enterprise holds too much financial assets, it has a crowding out effect on its main business and brings certain negative impacts on the enterprise and the economy, which is not conducive to the development and smooth operation of the industry and the national real economy. The results show that the policy of high enterprise accreditation significantly inhibits the level of financialization of enterprises, and the degree of influence on the level of enterprise financialization is related to the property nature of enterprises, the size of enterprises and other characteristics. On this basis, the degree of influence is discussed in groups according to the liquidity difference of financial assets. From the perspective of influence mechanism, the policy of high-tech enterprise accreditation mainly reduces the degree of enterprise financialization from the aspect of tax relief.

Keywords: High-tech enterprise identification; Enterprise financialization; difference-in-differences model.

1. Introduction

Countries and enterprises have paid more attention to financial risks and the real economy since the outbreak of the financial crisis. Our President Xi Jinping has repeatedly emphasized the importance of the real economy and stressed that financial sector should serve the real economy. There are many examples of "off real to virtual", including the real estate market bubble and systemic risks from shadow banking, and so on. At the micro enterprise level, "off real to virtual" mainly refers to the situation in which an enterprise deviates from its main business and relies on capital operation for development. It has an adverse impact on the real economy and may even raise systemic financial risks (Liu and Qin, 2022) [1]. The level of corporate financialization is a micro manifestation of "out of the real economy." Because financial assets have the advantages of high returns and good liquidity, many enterprises choose to purchase these assets. When there is too much investment, enterprises would ignore their original real business, give up their long-term development, and blindly pursue high returns in the financial market, which has a negative impact on the national economy and industrial innovation. According to statistics, the added value of the financial industry and the real estate industry has climbed for 8.3% and 7.3% in the proportion of China's GDP in 2020, respectively [2]. The potential risks cannot be ignored when we enjoy the achievements brought by the development of virtual economy.

Economic "off real to virtual" is an urgent problem to be solved in recent years. China has introduced many policies, such as supply-side structural reform, "replacing business tax with value-added tax" policy and so on. However, selective industrial policies have not been widely valued in

related studies. The definition of selective industrial policy is to support emerging industries or strategic industries in a slanted manner to compress the overall evolution process of the industry, and finally achieve rapid industrial development and economic catch-up (Cao and Wang，2018)[3]. In recent years, Chinese governments have issued a number of supportive and incentive policies, including the accreditation of high-tech enterprises and technology-based small- and medium-sized enterprises (SMEs), the implementation of the Torch plan, and other funding projects of science and technology (Jin et al) [4]. These policies promote the optimal allocation of resources in the technology field by means of tax relief and financial subsidies, so as to promote the development of enterprises in related industries.

Compared with other enterprises, high-tech enterprises have the problems of large capital demand, high operation cost and investment cost in the early stage. To reduce the burden of high-tech enterprises and provide impetus for their R&D and innovation, and promote industrial transformation and upgrading, In 2008 and 2016, the Ministry of Finance, the Ministry of Science and Technology and the State Administration of Taxation jointly promulgated and revised the Measures for the Accreditation and Administration of High-tech Enterprises (Hereinafter referred to as the Administrative Measures) It clarifies the conditions and procedures for the recognition of high-tech enterprises and provides a series of preferential policies for enterprises that have been accreditated. High-tech enterprises are more likely to deviate from their main business. Due to the high pressure on the operation of its real business or main business, it is easy to turn its corporate goals to short-term interests, resulting in the phenomenon of "off real to virtual", which is reflected in the increase of its financialization level at the micro level. This paper focuses on whether the industrial policy launched by the governments can guide the right development of enterprises, reduce the financial investment, and develop the main business. With accreditation of high-tech enterprises as the representative of industrial policy, this paper focuses on the impact on the level of enterprise financialization to provides useful reference for the development of the country and enterprises. The empirical results show that the policy about the accreditation of high-tech enterprises significantly inhibits the rise of enterprise financialization, and this inhibitory effect is achieved through the channels of tax incentives and R&D incentives, which is more significant in non-state-owned enterprises and enterprises with high equity balance.

2. Literature Review

2.1. Motivation and Production Mechanism of Enterprise Financialization

Existing research on financialization motivation mainly includes three categories, namely "reservoir" theory, "investment substitution" theory and "entity intermediary" theory.

"Reservoir" theory holds that enterprise financialization is based on the purpose of preventive savings, which uses part of idle funds for short-term investment, reduces liquidity risk and achieves capital preservation (Ni et al., 2016)[5]. Financial assets with good liquidity can be quickly sold for cash when an enterprise faces cash flow pressure. "Reservoir" theory is not the mainstream of academic circles at present. Many scholars research conclusions do not support this theory, and it is believed that this theory has limitations and cannot give a universal explanation for corporate financialization. For example, according to the "reservoir" theory, enterprises with more investment in the real economy need higher liquidity in the face of financial crisis, so they should hold more 1iouidity reserves (Du Yong et al., 2017)[6]. Zhang Sicheng and Zhang Buhao (2016) constructed a micro firm investment model to show that there is a negative correlation between financial investment and real economy investment in China[7]. It indicates that this theory is not the main motivation for the financialization of Chinese enterprises.

The theory of "investment substitution", also known as the "crowding out" effect, believes that the financialization of enterprises have a crowding out effect on the original real business. It believes that the purpose of financial investment of enterprises is to seek profit and avoid risk. When the return rate of financial investment is greater than the return rate of real operation, enterprises allocate

financial assets (Daize et al., 2018)[8]. This paper starts from the theory of "investment substitution" and then proves through the intermediary test that the reduction of tax burden can promote the income of enterprise main business and improve the degree of enterprise financialization, which partially confirms the theory. The theory of entity intermediary refers to that some enterprises with low productivity transfer the funds obtained from banks to other enterprises, which is consistent with the phenomenon of "shadow banking".

Based on the theory of "investment substitution", this paper proves through further analysis that the policy of high-tech enterprises accreditation can promote the decrease of corporate tax burden. Meanwhile, according to the original research, it can be found that the decrease of corporate tax burden can help reduce the operating pressure of enterprises, and enterprises have the motivation to return to the main business and increase operational investment, so as to lower the level of enterprise financialization.

2.2. Related Research on Selective Industrial Policies

The Measures for the Accreditation and Administration of High-tech Enterprises is a typical selective industrial policy, which encourages enterprises to invest in R&D and continuously transform technological achievements through a series of preferential fiscal and tax policies, so as to form the core independent intellectual property of enterprises. Different from general industrial policies, the policy stipulates that the validity period of high-tech enterprise accreditation is three years from the date of issuance of the certificate. It means that enterprises must adjust their production and operation plans within three years after the certification and apply for review within three months before the expiration date. In terms of preferential policies, the policy targets the income tax collection of high-tech enterprises in accordance with relevant regulations and implements a preferential policy of lowering the enterprise income tax from 25 percent to 15 percent.

Currently, there are many studies on the impact of selective industrial policies on enterprises. For example, many studies show that selective industrial policies can significantly reduce the production cost of enterprises and promote technological progress and product upgrading of enterprises. Jin Yu et al (2019) pointed out that selective industrial policies can improve the patent quality of enterprises, and the effect of such policies is related to the external environment [4]. Shao Wei and Ji Xiaodong (2020)took the policy about establishment of development zones as the research object and found that selective industrial policies not only promoted the coordinated development of regional economy, but also had a profound impact on the capital flow of enterprises[9]. According to the research of Sun Jingzhou and Zhu Shujin (2020), accreditation of high-tech enterprises can significantly reduce the level of enterprise leverage ratio[10]. The existing research of industrial policy are mostly focused on enterprise investment, resource allocation and local industrial structure upgrading, in contrast, little attention is paid to its impact on the "off real to virtual" phenomenon of enterprises. In this paper, the typical selective industrial policy of high-tech enterprise accreditation is selected as an example, and its impact on the degree of enterprise financialization is studied by constructing a staggered DID model to fill in the gaps in this research direction.

3. Theoretical Analysis and Hypothesis

3.1. Accreditation and Financialization of High-Tech Enterprises

To a certain extent, it can inhibit the development of enterprise main business and reduce the tendency of allocating financial assets for the enterprise actively applying for the accreditation of high-tech enterprises. First, the accreditation of high-tech enterprises makes the enterprises enjoy preferential policies, which is conducive to reducing the corporate income tax burden, saving the free cash flow, reducing the dependence of enterprises on financial assets, and thus reducing the tendency of enterprises to finance. Secondly, the accreditation of high-tech enterprises has a certain signal effect, helping enterprises to obtain more external financing and other innovation resources, which is helpful to the technological innovation of enterprises, and thus reducing the tendency of enterprises

to obtain the required funds for development only by means of financial means. In addition, the mandatory requirements for the accreditation of high-tech enterprises also encourage the enterprises to carry out technological innovation to maintain the qualification, rather than only relying on financial means to meet the development needs, so as to restrain the trend of financialization of enterprises. Based on the above analysis, the following assumptions are put forward: H1, accreditation of high-tech enterprise can reduce the level of enterprise financialization.

3.2. Mechanism Analysis

Preferential tax policies are designed to encourage enterprises to increase investment in technological innovation, improve technological innovation ability and market competitiveness. The accreditation of high-tech enterprises is one of the important means for the Chinese government to encourage technological innovation. After being accreditated as a new and high-tech enterprise, an enterprise can enjoy preferential tax policies, including 15% preferential tax rate of enterprise income tax and other preferential tax policies. These policies can reduce the burden on enterprises and attract more enterprises to join the ranks of technological innovation.

Newly identified high-tech enterprises after 2008 can enjoy more preferential tax policies, while enterprises previously identified as high-tech enterprises can continue to enjoy the original preferential tax policies (Xu Lingling et al., 2021)[11]. Meanwhile, the accreditation measures in 2016 further lowered the accreditation standards for high-tech enterprises and expanded the scope of accreditation, so that more small and medium sized enterprises can also enjoy the preferential tax policies. Theoretically, the implementation of the accreditation policy of high-tech enterprises directly reduces the tax burden of relevant enterprises and reduces the operating pressure faced by enterprises. From the perspective of "investment substitution" theory, the ratio of entity operating rate of return and financial capital investment rate of return should be increased. Therefore, it can be preliminarily believed that the increasing attraction of entity operation for enterprises prompts enterprises to sell financial assets, invest more funds into their main business, and reduce the degree of financialization of enterprises. In addition, after an enterprise is accreditated as a high-tech enterprise, its tax avoidance tendency is reduced. According to the study of Fan Run and Sun Xuejiao (2022), reducing tax avoidance activities restrained the financialization of enterprises, which can be achieved through two path of mechanism: reducing the disposable cash flow and agency cost[12].

In addition, as the tax burden of enterprises decreases, the price of commodities purchased by consumers also decreases accordingly. For enterprises, the demand of downstream customers increases and the sales volume increases, while the cost of raw materials also decreases. The combination of these two factors increases the profitability of enterprises, and then reduce the allocation of financial assets and expand their business. To sum up, it is found that the profit rate of enterprises increases with the reduction of value-added tax policy, and the profits obtained are faced with two choices: financial investment or industrial investment. However, our financial market is still not perfect, and the risk of investment is high. In the short term, the tax burden reduction reduces the investment cost of enterprises and restrain the impulse of enterprises to make high-risk investment (Daize et al., 2018[8]. In addition, enterprises are willing to return to the main business and increase operational investment. This paper focuses on the first approach of the mechanism, namely the tax burden.

Based on the above analysis, the following hypothesis is proposed: H2, the successful accreditation of high and new technology reduce the tax burden of enterprises. However, it has an inhibitory effect on the financialization of enterprises.

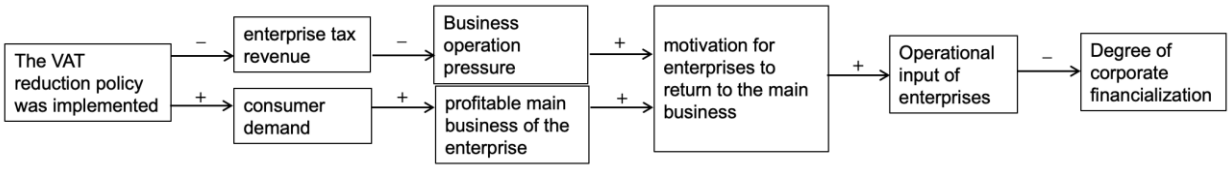

Fig 1. Impact mechanism

3.3. Hypotheses Related to Enterprise Heterogeneity

Heterogeneity may exist due to the different characteristics of enterprises themselves. The implementation of high-tech enterprise accreditation should have a more significant inhibitory effect on the financialization of non-state-owned enterprises. This is because the accreditation requires enterprises to have certain strength and stability, to meet a series of financial, management, technical, and other standards, and to pass the necessary relevant audit and approval procedures. Non-state-owned enterprises face greater pressure on R&D and innovation, and their tendency to be financialized is lower. The policy of high-tech enterprise accreditation has a more significant inhibitory effect on the financialization level of small enterprises. This is because that small enterprises usually have no scale advantage, lower production efficiency, higher costs, and lower profits. The effect of tax reduction brought by high-tech enterprise accreditation is conducive to relieving the capital pressure of enterprises. It has a greater incentive effect on small enterprises and a more significant effect on reducing financial investment. Therefore, it has more incentives for small-scale enterprises to increase R&D investment and reduce financial investment. Based on the above analysis, the following hypotheses are proposed: H3, the policy of high-tech enterprise accreditation has a more significant inhibitory effect on the financialization level of non-state-owned enterprises. H4, the policy of high-tech enterprise accreditation has a more significant inhibitory effect on the financialization level of small enterprises.

4. Research Design and Data

4.1. Data Collection and Screening

With A-share 1isted companies in Shanghai and Shenzhen from 2007 to 2021 as research samples, all relevant enterprise data in the database of Guotaian (CSMR) are collected. After the collection is completed, the annual data of the samples are processed as follows: First, the samples with missing data are deleted. Secondly, the samples with asset-liability ratio greater than 1 and less than 0 were deleted. Third, ST and PT class samples are deleted. Fourthly, the data of enterprises in the financial industry and the samples with negative indicators of enterprise financialization are removed. Fifth, the continuous variables are winsorized by 1% to alleviate the impact of extreme values. After the above processing, 26107 observed values were finally obtained in this paper.

4.2. Definition of Variables

Specific variables are defined as follows:

Table 1. Definition of Variables

	variables	Definition
explained variable	Fin (degree of financialization)	Financial assets / total assets
	Tax (enterprise tax burden)	(taxes paid – refunds of taxes received) / operating receipt
explanatory variable	Did (policy dummy variable)	If the company is identified as a high-tech enterprise in the current year or is within the validity period, the value is 1, otherwise 0
control variable	Age (enterprise age)	The logarithm of the listed years of the enterprise
	Lev (corporate leverage)	Total liabilities/total assets
	Cf (cash flow status)	Net cash flows from operating activities in the previous period
	Size (enterprise scale)	Logarithm of total assets of the previous period
	Growth (growth rate of operating income)	Operating income/Operating income for the previous period -1
	ROA (return on asset)	Net profit/total assets
	ATO (assets turnover)	Operating income/average total assets
	TobinQ (Tobin Q value)	(Market value of tradable shares + number of non-tradable shares × net assets per share + book value of liabilities)/ total assets
	Balance (equity balance degree)	The sum of the shareholding ratio of the second to the fifth largest shareholder divided by the shareholding ratio of the largest shareholder
	SOE (whether state-owned enterprise)	The value is 1 for state-owned enterprises and 0 for others

The explained variable is the degree of enterprise financialization, which is specifically defined as the ratio of financial assets to total assets. Based on the research of Zhang Chengsi and Zhang Butan (2016), transactional financial assets, financial assets available for sale, hold-to-maturity investment, loan issuance and advance payment, derivative financial instruments, long-term equity investment and investment real estate are considered as financial assets in this paper [7]. Due to the reform carried out in 2018, the subjects of investment to maturity and financial assets available for sale were cancelled, so the data after 2018 were fine-tuned, and the investment to maturity used in the calculation of variables was changed to debt investment, and the financial assets available for sale was changed to the sum of other debt investment and other equity instruments investments. The other calculation methods remained unchanged.

The corporate tax burden variable (Tax) is used to analyze the mechanism of policy impact. Referring to the practice of Deng Liping et al. (2020), the corporate tax burden is defined as Tax = (various taxes paid by the enterprise - tax refunds received) /business income [13].

Core explanatory variable

In this study, Did was used to represent the dummy variable of the high-tech enterprise accreditation. In view of the implementation of accreditation policy of the high-tech enterprise since 2008, we assign the value of 1 to the enterprises accreditated as a high-tech enterprise and 0 to that is not identified as a high-tech enterprise in the current year. The accreditation of high-tech enterprises is dynamic, and the recognition period is three years. After the expiration of the identification period, a review is required, and the enterprises that pass the review can continue to enjoy relevant preferential policies.

4.3. Model Setup

Based on the policy impact of high-tech enterprises accreditation, the staggered DID model is applied for empirical analysis. In order to verify that policy of high-tech enterprises accreditation is conducive to alleviating the "off real to virtual" of enterprises, we have currently constructed the following model:

$$Fin_{it} = \alpha + \gamma Did_{it} + X_{it}\beta + \sum Ind + \sum Year + \varepsilon_{it} \quad (1)$$

The meanings of each variable are as follows: y_{it} it is the explained variable, that is, the degree of corporate financialization and return on assets. α is the intercept term. X_{it} represents the control variable. $\sum Year$ is the year fixed effect. ε_{it} represents the random disturbance term. Did_{it} represents the dummy variable of the high-tech enterprise accreditation.

5. Experimental Analysis

5.1. Descriptive Statistics and Correlation Analysis

Table 2. Descriptive statistics of variables

Variable	Obs	Mean	Std. Dev.	Min	Max
Fin	26107	0.075	0.105	0	0.592
Growth	26107	0.165	0.443	-0.732	4.806
Lev	26107	0.439	0.2	0.027	0.99
Cf	26107	0.05	0.069	-.0224	0.283
Size	26107	22.186	1.253	19.35	26.395
Age	26107	2.843	0.341	1.099	3.555
ATO	26107	0.673	0.457	0.044	2.918
ROA	26107	0.037	0.067	-0.415	0.245
TobinQ	26107	2.099	1.467	0.799	17.676
Balance	26107	0.693	0.597	0.016	2.961
SOE	26107	0.404	0.491	0	1

As listed in Table 2, the of financialization of enterprises is about 7.85%, but the highest value is 59.2%, indicating that there are great differences in the level of financialization among different

enterprises, and some enterprises have a serious tendency of financialization, and the phenomenon of "off real to virtual" is obvious. It indicates that the research has a practical significance. It can also be seen from the statistical results described in the following table that variables such as the growth rate of operating income, leverage ratio and cash flow status are quite different among enterprises, and each control variable will have a certain influence on the level of financialization of enterprises in theory.

5.2. Baseline Regression

Table 3 shows the influence of accreditation of high-tech enterprises on the degree of financialization of enterprises. The column (1) does not include control variables and fixed effects. In column (2), fixed effect of industry and fixed effect of time are added on the basis of column (1). In column (3), control variables are added on the basis of column (1), but fixed effects are not included. The column (4) lists regression results that include both control variables and fixed effects. It can be found that with or without the inclusion of fixed effects or control variables, the coefficient of core explanatory variable Did is significantly negative at the level of 1%. It indicates that after the enterprise is certified as a high-tech enterprise, the degree of financialization of the enterprise decrease significantly. Hypothesis 1 in this paper is thus supported.

Table 3. Regression result

	(1)	(2)	(3)	(4)
variables	Fin	Fin	Fin	Fin
Did	-0.0367***	-0.0207***	-0.0382***	-0.0188***
	(0.00129)	(0.00395)	(0.00996)	(0.00310)
Growth			-0.0145***	-0.0124***
			(0.00210)	(0.00215)
Lev			-0.0832***	-0.0972***
			(0.00974)	(0.0140)
Cf			-0.102**	-0.105***
			(0.0401)	(0.0266)
Size			0.00310	0.00671***
			(0.00245)	(0.00170)
Age			0.0437***	0.0431***
			(0.00614)	(0.00521)
ATO			-0.0247***	-0.0341***
			(0.00528)	(0.0102)
ROA			0.0412	0.0331
			(0.0324)	(0.0278)
TobinQ			0.00239*	0.00344***
			(0.00119)	(0.00118)
Balance			-0.00432*	-0.00673**
			(0.00237)	(0.00261)
SOE			0.000999	-0.00269
			(0.00423)	(0.00490)
Constant	0.0961***	0.0867***	-0.0394	-0.116***
	(0.000989)	(0.00232)	(0.0445)	(0.0276)
Ind	NO	YES	NO	YES
Year	NO	YES	NO	YES
Observations	26,107	26,107	26,107	26,107
R-squared	0.030	0.103	0.098	0.175

*** significant at the 1% level, ** significant at the 5% level, * significant at the 10% level. The figures in parentheses are clustered robust standard errors at the industry level.

5.3. Robustness Test

5.3.1 Parallel trend test

The prerequisite for the use of DID method is to meet the parallel trend hypothesis, that is, the treatment group and the control group have the same change trend before and after the policy. This paper adopts the event study model to test whether the treatment group and the control group meet the parallel trend test. Eight years before and after the accreditation were selected for the parallel trend test, and the trend chart of the estimated coefficient was drawn according to the results. According to Figure 1, before the implementation of the policy, there was no significant difference in the change trend of financialization level between the treatment group and the control group, indicating that the parallel trend hypothesis was satisfied. After the implementation of the policy, the regression coefficients were all significantly negative, indicating that the VAT reduction policy significantly inhibited the level of financialization of enterprises. Five years after obtaining the qualification of high-tech enterprises, the effect is not significant, and the reason is related to the decline of tax incentives due to the expiration of the qualification.

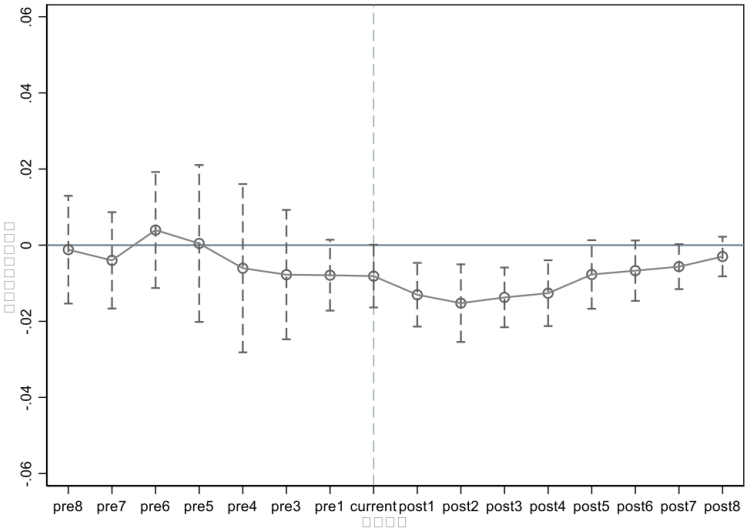

Fig 2. Parallel trend test

5.3.2 PSM-DID

Referring to the method proposed by Yang Xingquan and Yang Zheng (2022), this paper selects the method of PSM-DID for robustness test. Specifically, with the control variable as the covariable, Logit regression is carried out on the control variable with the high identification dummy variable, the kernel matching method is adopted and the samples within the common support range are used for the differential estimation after PSM[14]. The estimated results are stil1 significant, indicating that the above results are relatively robust.

5.3.3 Alternate variables and subsample regression

With reference to the approach by Zhang Chengsi (2016)[7], the original variable of enterprise financialization degree was replaced with the proportion of the total profit of the investment income of non-financial enterprises, changes in fair value, and other comprehensive income in operating profit. In order to reduce the result deviation caused by negative numbers, the profit of financial channels is standardized, and the generating variable FIN2 is used to replace the original explained variable Fin for regression. As listed in Table 5, although the fitting effect is general, the regression coefficient of policy dummy variable is still significant at the level of 1%, which is consistent with the result of the main test. In order to avoid the impact of the 2008 financial crisis and the subsequent policy of replacing business tax with value-added tax on the research, the time window was changed to 2016 - 2021. The results are listed in Columns (3) and (4) of Table 4. The coefficient of explanatory variable is still significantly negative at the level of 1%. The hypothesis H1 is further verified.

Table 4. The regression results

variables	Replacement variables		2016-2021 subsamples	
	(1)	(2)	(3)	(4)
	Fin2	Fin2	Fin	Fin
Did	-0.532***	-0.343***	-0.0152***	-0.0153***
	(0.124)	(0.110)	(0.00414)	(0.00296)
Growth		-0.317***		-0.00967***
		(0.0801)		(0.00282)
Lev		-0.320		-0.109***
		(0.752)		(0.00996)
Cf		-4.686***		-0.0497*
		(0.862)		(0.0270)
Size		0.331		0.00823***
		(0.241)		(0.00135)
Age		0.134		0.0309***
		(0.226)		(0.00865)
ATO		-0.549***		-0.0400***
		(0.117)		(0.0108)
ROA		-8.342***		0.0118
		(2.178)		(0.0318)
TobinQ		0.199**		0.00379**
		(0.0839)		(0.00168)
Balance		0.389		-0.00466**
		(0.391)		(0.00191)
SOE		0.0487		-0.00865*
		(0.246)		(0.00451)
Constant	0.307***	-7.130	0.0905***	-0.112***
	(0.0729)	(4.938)	(0.00264)	(0.0335)
Ind	YES	YES	YES	YES
Year	YES	YES	YES	YES
Observations	26,107	26,107	13,487	13,487
R-squared	0.002	0.005	0.097	0.165

5.4. Heterogeneity Analysis

According to the results of model (1) above, the high qualification recognition policy significantly inhibits the degree of financialization of enterprises, and the degree of inhibition may vary due to the differences in the characteristics of enterprises. This paper takes the nature of enterprise ownership and the size of enterprises as the entry point to conduct heterogeneity analysis.

5.4.1 Nature of ownership

In this paper, the regression method of adding interaction terms was adopted to analyze the heterogeneity. The regression results are shown in Table 5. Columns (1) and (2) show the regression results of the interaction items with the property of added ownership. Column (1) does not include industry fixed effect and time fixed effect, and column (2) adds fixed effect on the basis of column (1). The regression results show that the coefficients of the interaction terms of the property of ownership are all significantly negative at the 1% confidence level, indicating that the inhibitory effect of the policy is more significant for non-state-owned enterprises. In our special system environment, there are obvious differences between different ownership enterprises, especially in terms of resource acquisition and policy incentive. On the one hand, state-owned enterprises enjoy significant advantages due to their long-term ties with the government, and their resource factor endowment is more advantageous than that of private enterprises. On the other hand, private enterprises are often subject to various internal and external constraints and are more sensitive to capital supply. After accreditation, non-state-owned enterprises receive more incentives, invest more

in R&D, and allocate less financial assets. Therefore, the degree of financialization inhibition is more significant for non-state-owned enterprises. H3 is thus supported.

Table 5. Heterogeneity test

variables	Nature of ownership		Size of the enterprises	
	(1)	(2)	(3)	(4)
	Fin	Fin	Fin	Fin
Did	-0.0220***	-0.0406***	-0.224***	-0.208***
	(0.00208)	(0.00208)	(0.0226)	(0.0223)
SOE×Did	0.00717***	0.00527*		
	(0.00273)	(0.00281)		
Size×Did			0.00835***	0.00850***
			(0.000997)	(0.000988)
Growth	-0.0124***	-0.0144***	-0.0146***	-0.0125***
	(0.00145)	(0.00147)	(0.00147)	(0.00145)
Lev	-0.0979***	-0.0837***	-0.0863***	-0.100***
	(0.00450)	(0.00428)	(0.00430)	(0.00451)
Cf	-0.105***	-0.102***	-0.101***	-0.104***
	(0.0102)	(0.0102)	(0.0101)	(0.0102)
Size	0.00668***	0.00312***	-0.000644	0.00272***
	(0.000671)	(0.000612)	(0.000815)	(0.000869)
Age	0.0426***	0.0435***	0.0420***	0.0411***
	(0.00192)	(0.00166)	(0.00168)	(0.00194)
ATO	-0.0341***	-0.0248***	-0.0250***	-0.0342***
	(0.00165)	(0.00140)	(0.00141)	(0.00165)
ROA	0.0334***	0.0412***	0.0396***	0.0320**
	(0.0128)	(0.0129)	(0.0129)	(0.0128)
TobinQ	0.00335***	0.00233***	0.00223***	0.00326***
	(0.000626)	(0.000582)	(0.000575)	(0.000619)
Balance	-0.00668***	-0.00427***	-0.00402***	-0.00650***
	(0.00108)	(0.00111)	(0.00111)	(0.00107)
SOE	-0.00656***	-0.00182	0.000997	-0.00270*
	(0.00240)	(0.00243)	(0.00150)	(0.00152)
Constant	-0.111***	-0.0373***	0.0517***	-0.0182
	(0.0158)	(0.0138)	(0.0192)	(0.0208)
Ind	NO	YES	NO	YES
Year	NO	YES	NO	YES
Observations	26,107	26,107	26,107	26,107
R-squared	0.098	0.175	0.100	0.177

*** significant at the 1% level, ** significant at the 5% level, * significant at the 10% level. The figures in parentheses are clustered robust standard errors at the industry level.

5.4.2 Enterprise size

The interaction term of Size variable and Did was added into the regression. The (3) of Table 5 is listed as the regression result without adding the fixed effect of industry and time, and the (4) is listed as the regression result with the fixed effect added on the basis of column (3). The results show that, regardless of whether the fixed effect is added, the coefficient of the newly constructed interaction term is negative, contrary to the main regression coefficient, indicating that the policy of high-tech enterprises accreditation plays a more obvious role in small scale enterprises. The hypothesis H4 is verified.

6. Mechanism Test

The above arguments have proved that the policy of high-tech enterprises accreditation can reduce the tendency of enterprises to "off real to virtual" and reduce their level of financialization. What is the specific mechanism? According to the above analysis, this paper believes that the policy is to promote the reduction of the tax burden of enterprises through tax relief, and then reduce the level of financialization of enterprises. Previous studies by relevant scholars have fully discussed the significant inhibitory effect of tax on the degree of enterprise financialization. For example, Huang et al. (2022) selected the relevant data of A-share listed companies in Shanghai and Shenzhen from 2007 to 2020 to empirically analyze the relationship[15]. Their research shows that the decrease of value-added tax can significantly reduce the level of "off real to virtual" of entity enterprises. Yang et al. (2023) empirically prove that VAT rate reform could restrain the financialization of real enterprises through the multi-period DID method[16]. Therefore, this paper only needs to prove that the policy has a significant impact on the reduction of corporate tax burden to prove the relevant mechanism, so that the model (2) is set up. Tax represents the level of tax burden of the enterprise. The calculation method is as (various taxes paid – tax refunds received) / operating income. As listed in Table 6, the results show that the policy of high-tech enterprises accreditation significantly reduces the tax burden of enterprises, and then reduces the level of enterprise financialization. The hypothesis H2 is thus verified.

$$Tax_{it} = \alpha + \gamma Did_{it} + X_{it}\beta + \sum Ind + \sum Year + \varepsilon_{it} \quad (2)$$

Table 6. Mechanism test regression

Variables	(1) Tax	(2) Tax
Did	-0.0102***	-0.0197***
	(0.00221)	(0.00391)
Control variable	No	Yes
Ind	YES	YES
Year	YES	YES
Observations	23,107	23,107
R-squared	0.030	0.061

7. Conclusion and Suggestions

Starting from the qualification recognition policy of high-tech enterprises, this paper takes A-share listed companies from 2008 to 2021 as the initial sample to empirically test its impact on corporate financialization. The following conclusions are drawn: (1) Enterprises accreditated as high-tech enterprises significantly reduce their financialization degree, and the conclusion is still valid after robustness test. (2) According to heterogeneity analysis, the effect of policy on non-SOEs is more obvious compared with SOEs. Compared with large-scale enterprises, the impact of policy on enterprises with small asset scale is more significant, which may be because small-scale enterprises face great financing pressure, and the tax reduction effect brought by policy has a more obvious incentive effect on them. (3) Mechanism analysis shows that the policy of high-enterprise accreditation significantly promotes the decline of the tax level borne by enterprises, and then promote the decline of their "off real to virtual" degree.

The policy suggestions are as follows: First, government agencies further implement relevant policies to optimize the business environment, help enterprises improve the level of scientific and technological innovation, and reduce the tax burden faced by enterprises, so as to help enterprises return to their original main business and reduce the propensity of financial asset allocation. Second, we should provide more preferential policies for industries with high financing pressure, continue to pay attention to the risk of large-scale enterprises "off real to virtual", and prevent the emergence of

a major financial storm. We should introduce more policies to reduce the level of financialization of SOEs and reduce macroeconomic risks.

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