

# Research on the Impact of Bank Regulatory Penalties on Enterprises' Transition from the Virtual to the Real Economy

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## Abstract

In recent years, China's financial sector has shown a tendency of "disenchantment from reality to emptiness", and some financial resources circulate in the system and fail to be effectively injected into the real sector, resulting in the weakening of the support efficiency of financial services for the real economy. In response to this challenge, the Chinese government has strengthened financial supervision and guided funds back to the real sector through bank regulatory penalties. Based on the data of A-share listed companies in China from 2011 to 2020 and the relevant data of bank regulatory penalties, this paper explores the impact mechanism and effect of bank regulatory penalties on enterprises' "getting rid of falsehood to reality". The results show that: first, bank regulatory penalties significantly inhibit the level of enterprise financialization, manifested in the decline of the proportion of financial assets in total assets, which is steadily verified by benchmark regression, generalized double difference model (DID) and endogenous treatment. Second, the mechanism analysis shows that regulatory penalties play a role by optimizing the credit structure of enterprises: banks increase the supply of long-term loans, reduce the cost of corporate debt, and curb the scale of informal lending (such as entrusted loans and private lending), so as to reduce capital idling and promote enterprises to return to their main business investment. Based on this, this paper suggests improving the differentiated supervision mechanism, optimizing the credit structure, balancing financial innovation and risk prevention and control, and strengthening the coordination of fiscal and monetary policies to improve the efficiency of resource allocation. This study provides a theoretical and empirical basis for optimizing the financial regulatory framework and promoting the high-quality development of the real economy.

## Keywords

Bank regulatory penalties, From emptiness to reality, Corporate credit structure, Real economy.

## 1. Introduction

With the rapid development of China's financial market, China's financial system shows a significant tendency of emptiness, and capital elements form a self circulation within the monetary and credit system, weakening the supporting efficiency for the transformation and upgrading of the industrial sector. This structural shift refers to the deviation of the financial sector from the core function of serving the real economy, the failure to build an effective transmission mechanism between capital factors and productive investment, but the excessive concentration of liquidity in the field of virtual economy, the formation of capital internal circulation through high-frequency arbitrage trading behavior, and ultimately the substantial loss of the efficiency of economic resource allocation. This phenomenon not only reduces the

efficiency of the financial system, but also may lead to the accumulation of financial risks and affect the steady growth of the economy. However, excessive financialization and the expansion of virtual economy have led to the imbalance of enterprise resource allocation, resulting in the shortage of funds in the real economy, the shortage of productive investment and the distortion of economic structure. The report of the 20th National Congress of the Communist Party of China clearly points out that the focus of economic development should be on the real economy. Further promoting financial supervision and continuously optimizing the effectiveness of support for the real economy is the key path to promote China's goal of becoming a financial power and promote high-quality economic development. In response to the problem of "Disenchantment" in finance, the Chinese government has strengthened financial supervision and imposed severe penalties for violations by financial institutions. As an important part of the financial system, the behavior of banks has an important impact on the flow of funds. Therefore, it is of great theoretical and practical significance to study the impact of bank regulatory penalties on enterprises to "get rid of falsehood and turn to reality".

As an important subject of the financial market, banks bear the bridge role of capital flow and have the key function of guiding capital flow to the real economy. Bank regulatory penalties play a crucial role in this process. When banks violate regulations, engage in excessive financialization or improper risk management, regulators will restrict their speculative behavior through penalties and require them to pay more attention to and support the real economy. This regulatory means can not only protect the stability of the financial market, but also effectively promote the rational allocation of enterprise funds and promote the "virtual to real" of enterprises.

This paper aims to explore the impact mechanism and effect of bank regulatory penalties on enterprises' "getting rid of falsehood to reality". By analyzing the types, reasons and implementation mechanism of bank regulatory penalties, this paper explores their impact on the direction of capital allocation of enterprises, and provides policy suggestions for optimizing the allocation of financial resources and promoting the development of the real economy.

## 2. Literature Review

Through the research of relevant papers, the project team learned that the current research on bank regulatory penalties and corporate behavior mainly focuses on the following aspects:

### 2.1. Discussion on the effectiveness of bank supervision

As the core mechanism of the governance system of financial institutions, regulatory penalties not only play a significant regulatory role in banking business decision-making, but also deeply affect the production and operation pattern of enterprise entities (Ye Azhong et al., 2024)<sup>[1]</sup>. In view of the controversy over regulatory effectiveness, there are skeptical views of "regulation failure" in academia: first, regulators may deviate from established policy objectives driven by interests, resulting in an imbalance in capital allocation at the micro enterprise level and a blocking effect on economic development (Wan Xiaoli et al., 2016)<sup>[2]</sup>. Secondly, compliance requirements force banks to invest excess working capital, which not only raises the operating cost of institutions, but also weakens the operating efficiency, resulting in the loss of total social welfare (Smith, 1977)<sup>[3]</sup>. The characteristics of this institutional arrangement may lead to negative spillover effects and induce the failure of market regulation mechanism. In view of this, regulators must strengthen the governance efficiency of financial institutions (Lan Rixu et al., 2023)<sup>[4]</sup>, ensure the steady operation of the banking system by improving the prudential regulatory framework (Aghion et al., 1999)<sup>[5]</sup>, create a high-quality financing ecology for market participants, and then drive the healthy development of the economy.

## 2.2. Impact of bank regulatory penalties on Enterprise Innovation

As for the dual action mechanism of regulatory and disciplinary measures on R&D investment of enterprises, the existing research shows a dialectical understanding. At the level of positive transmission path, regulatory intervention can drive the improvement of innovation efficiency through multiple channels: first, shadow banking governance can effectively curb the tendency of enterprise capital falsehood and slow down investment risk exposure (Yu Ziqin et al., 2023)<sup>[6]</sup>, creating a stable environment for R&D activities. Secondly, the improvement of the availability of credit resources and the optimization and reorganization of financing structure, especially the policy orientation of guiding capital flow to the real sector (Wei Jian et al., 2024), have significantly strengthened the allocation efficiency of innovative elements<sup>[7]</sup>. Thirdly, timely correction of violations of financial institutions will help to improve the quality of financial intermediaries (Delis et al., 2018) and build a benign financing ecology to support technological innovation<sup>[8]</sup>. But at the same time, it may also trigger a reverse inhibitory effect: the marginal increase in the cost of capital at the bank side and the compression of profit space caused by the increase in regulatory intensity (Avezum et al., 2022) will form a transmission chain of credit supply contraction → strengthening of corporate financing constraints → R&D investment constraints<sup>[9]</sup>.

## 2.3. Financialization of enterprises and the development of "breaking away from falsehood to reality"

Under the trend of economic virtualization, the phenomenon of capital idling in the real sector has intensified, which has become an important constraint for the transformation and upgrading of China's industrial system. In view of the alienation of capital allocation among market participants, academic research has revealed a multi-dimensional regulatory mechanism: the strengthening of the micro prudential regulatory framework has significantly weakened the preference for capital virtualization of industrial and commercial enterprises, and the regulatory elasticity coefficient shows Marginal Diminishing characteristics at the level of commercial banks (Meng Qingbin et al., 2023)<sup>[10]</sup>. Expansionary monetary policy can effectively curb asset arbitrage through price transmission channels, supplemented by scenario empowerment of financial technology, and enhance the policy synergy of capital serving the real economy (Zhai Jun et al., 2023)<sup>[11]</sup>. In terms of innovative application of environmental regulation tools, the special credit subsidy policy has been proved to optimize the flexibility of enterprise capital structure and achieve a dynamic balance of financial asset allocation (Li Jia et al., 2024)<sup>[12]</sup>. Research from the perspective of behavioral finance shows that there is a non-linear correlation between shareholder value orientation and financial asset holding rate, and the U-shaped curve relationship between shareholder value orientation and main business return shows a morphological variation in the macroeconomic fluctuation period (Deng Chao et al. 2017)<sup>[13]</sup>. Digital technology penetration strengthens the path through dual motives, which not only amplifies the impulse of capital to pursue profits but also alleviates liquidity constraints, and generally pushes up the intensity of financial asset allocation in non traditional sectors, which is particularly prominent in private entities, non manufacturing industries and institutional depressions (Qiao bin et al., 2024)<sup>[14]</sup>.

To sum up, the existing literature on bank regulatory penalties and the development of enterprise financialization and nonfinancialization provides inspiration and useful reference for the author, but there are the following shortcomings: first, the existing literature mainly focuses on the impact of the overall level of financial supervision or a certain financial supervision policy (such as the new asset management regulations) on enterprise innovation, while there are few literature focusing on the impact of bank supervision on enterprise "getting rid of the virtual to the real". Second, there is no systematic theoretical framework for the relationship between bank regulatory penalties and enterprise nonfinancialization. Third, the

existing research is less concerned with how bank regulatory penalties, as a policy tool, can promote enterprises to "get rid of the virtual reality" by changing the flow of funds in banks.

### 3. Theoretical Analysis and Research Hypothesis

Bank regulatory penalties are an important part of regulatory policies, and their implementation effect directly affects the effectiveness of regulatory policies. Through the rational use of penalties, regulators can better achieve policy objectives, such as preventing systemic risks and promoting the real economy of financial services. For example, the measures for the implementation of the administrative penalty discretion of the State Administration of financial supervision and administration clarify the rules for the exercise of the penalty discretion to ensure that the punishment matches the facts, nature and circumstances of illegal acts. Strengthening the supervision of commercial banks can prompt banks and other financial institutions to take the following measures: on the one hand, we should strengthen the supervision of corporate loans and effectively curb financial arbitrage. On the other hand, we should avoid indirect operation through real enterprises and no longer invest funds in financial assets or areas prohibited by the state by means of entrusted loans. These measures not only enhance the prudence of banks in lending, restrict enterprises from reinvesting borrowed money into financial assets, but also prevent large enterprises from becoming "shadow banks" causing the loss of financial resources by accurately controlling the capital flow of off balance sheet business (Li Shihui et al. 2025)<sup>[15]</sup>. Under the constraints of this series of normative measures, real enterprises will consciously use operating funds strictly for established business purposes and return to their main business, thus reducing the degree of financialization.

The impact of bank regulatory penalties on corporate financing is very significant. As regulatory policies may tighten the supply of bank loans, companies may have to rely on their own funds or shareholder funds rather than obtain funds through financial markets to further promote nonfinancialization. The indirect rise in bank loan costs caused by bank regulatory penalties may force enterprises to pay more attention to industrial investment in order to reduce financing costs, reduce dependence on financial assets, and promote the non financialization of enterprise investment models (Duan Liqiang, 2022)<sup>[16]</sup>.

In addition, bank regulatory penalties may limit the speed and scale of financial innovation, making companies more cautious about complex financial products. The lack of innovative financial products may further promote the process of non financialization by encouraging enterprises to return to traditional industrial investment rather than relying on complex tools in financial markets. Although banking regulation helps to standardize financial markets, it may enable enterprises to choose more conservative investment methods and avoid excessive participation in financial markets in the face of strict compliance requirements and regulatory pressures.

Based on the above analysis, the project proposes hypothesis H1:

**H1:** Bank regulatory penalties can promote enterprises to "get rid of falsehood and turn to reality".

Bank regulatory penalties can effectively reduce the mismatch of credit resources. In actual economic activities, there is often a mismatch in credit resources, that is, funds flow to inefficient or high-risk projects, while enterprises that really need funds in the real economy are difficult to obtain sufficient credit support. Regulatory penalties can encourage banks to follow credit policies more strictly and reduce excessive credit support for financing soft constrained enterprises (such as some state-owned enterprises) (Zhang Xuan et al., 2019), thus guiding more credit resources to efficient enterprises in the real economy<sup>[17]</sup>. This optimal allocation helps to improve the efficiency of resource allocation in the overall economy and promote enterprises to "get rid of virtual reality".

Bank regulatory penalties can alleviate the financing constraints of enterprises by optimizing the credit environment. On the one hand, bank regulatory penalties urge banks to pay more attention to compliance operations and reduce violations, so as to reduce their own risk level and enhance their credit supply capacity (Wang Yongqin et al., 2015)<sup>[18]</sup>. On the other hand, bank regulatory penalties can improve the efficiency of bank credit resource allocation, reduce the waste of credit resources, and make more funds flow to enterprises in the real economy. This mechanism helps enterprises obtain more stable financing support, reduce excessive dependence on financial markets, and focus on the development of real business.

Bank regulatory penalties can encourage banks to optimize their credit structure and reduce financial support for high-risk and speculative projects. For example, banking regulatory penalties can limit banks' excessive dependence on high-risk businesses such as shadow banking, wealth management products and interbank business. By strengthening supervision in these areas, banks will invest more credit resources in the real economy to support the development of enterprises' real business. This optimization of credit structure helps to reduce the idling of funds in the virtual economy and promote enterprises to "get rid of the virtual to reality".

Based on the above analysis, the project proposes hypothesis H2:

**H2:** Bank regulatory penalties can promote enterprises to "get rid of falsehood and turn to reality" by optimizing the credit structure of enterprises.

## 4. Empirical Strategies and Data Sources

### 4.1. Model building

In order to explore the impact of bank regulatory penalties on the non financialization of enterprises, this paper constructs the following regression model:

$$FinRatio_{i,j,t} = \alpha_0 + \alpha_1 LBankPenalty_{j,t} + \gamma X_{i,j,t} + \mu_i + \mu_j + \mu_t + \varepsilon_{i,j,t} \quad (1)$$

Where,  $i$  is an individual enterprise,  $j$  is a city and  $t$  is a year, the explained variable  $FinRatio$  is the proportion of corporate financial assets. The core explanatory variable  $LBankPenalty$  is the lag of bank regulatory penalties at the city level.  $X$  is the control variable, including financing constraint index, business cost, financial ratio, bank enterprise characteristics, number of patents, innovation model, per capita GDP, industry competition, square of industry competition, enterprise size, return on assets, state-owned enterprises, board characteristics and fixed assets. At the same time, enterprise fixed effect ( $\mu_i$ ), urban fixed effect ( $\mu_j$ ) and time fixed effect ( $\mu_t$ ) are added to the model. Epsilon ( $\varepsilon$ ) is the random disturbance term.

At the same time, a generalized did model is constructed for better causal identification. The generalized did model is as follows:

$$FinRatio_{i,j,t} = \alpha_0 + \alpha_1 DID_{j,t} + \gamma X_{i,j,t} + \mu_i + \mu_j + \mu_t + \varepsilon_{i,j,t} \quad (2)$$

Among them,  $DID$  is the product of  $Strength$  and  $post$ . Specifically,  $Strength$  reflects the average intensity of bank regulatory penalties in the three years before the revision of the penalty measures.  $Post$  is a time dummy variable with a value of 1 for years beginning and after 2016. The meaning of other variables is consistent with formula (1) (Wei Jian et al., 2024)<sup>[7]</sup>.

### 4.2. Variable description

(1) Explained variable: enterprise financialization level  $FinRatio$ . Referring to the existing literature, Cao Yue et al. (2024) adopted the enterprise financialization water balance as financial assets/total assets at the end of the period, that is, measured by the proportion of financial assets to total assets<sup>[19]</sup>.

(2) Core explanatory variable:  $BankPenalty$ . Based on the relevant research results, this paper quantifies the intensity of regional supervision based on the ratio of the total number of banking

regulatory penalties in prefecture level cities to the number of banking institutions in the region. In order to alleviate potential endogenous errors (such as the reverse causal relationship between gold melting and bank risk level), the original regulatory penalty variable is delayed by one period (recorded as *LBankPenalty*), so as to more accurately capture the dynamic impact of regulatory policies on corporate behavior.

### 4.3. Variable description

The sample of this study covers China's A-share listed companies from 2011 to 2020, and the data sources include multi-dimensional authoritative channels: the information of bank regulatory penalties is obtained from the records of banking administrative penalties published by the State Administration of financial supervision and administration. Regional economic data are quoted from the China Urban Statistical Yearbook and local statistical bulletins. Data on enterprise innovation activities are obtained through the official website of the State Intellectual Property Office. The remaining financial and governance indicators come from China research data service platform (CNRDS) and guotaian economic and financial research database (CSMAR). In order to improve the quality of data, sample screening follows the following principles: individuals who have been specially treated (ST) or suspended from listing (PT) are excluded; exclude enterprises in the financial and real estate industries to avoid interference from industry characteristics; delete missing observations for key variables. In order to reduce the potential bias of extreme values on regression results, all continuous variables are condensed by 1% quantiles to ensure the robustness of empirical analysis.

## 5. Empirical Analysis

### 5.1. Benchmark regression

Table 1 shows the test results of the inhibitory effect of financial regulatory policies on the tendency of enterprise funds to break away from the real economy. Column (1) shows that the regression coefficient of *LBankPenalty* is - 0.0016 ( $p < 0.01$ ), indicating that for every unit of increase in regulatory intensity, the proportion of financial asset allocation of enterprises decreases significantly by 0.16%. After the introduction of control variables such as financing constraints and industry characteristics (column (2)), the negative effect was further enhanced (the coefficient is - 0.0030,  $p < 0.01$ ), which verified that the restrictive effect of regulatory measures on enterprises' participation in financial speculation is stable. Based on the analysis of generalized dual difference model (DID) (column (3)), the degree of enterprise financialization decreased significantly after the policy impact (coefficient - 0.0035,  $p < 0.01$ ), and the effect remained significant after adding control variables (column (4)) (coefficient - 0.0020,  $p < 0.01$ ). The parallel trend test shows that the coefficient fluctuation of each period before the implementation of the policy is small and close to zero, while the coefficient of the fourth year (after4) after the policy takes effect shows a significant negative deviation, which meets the parallel trend hypothesis. The above results consistently show that the strengthening of financial supervision significantly reduces the detention of enterprise funds in the virtual economy and promotes the return of resources to the main business by restricting the Arbitrage Behavior of financial institutions. To sum up, bank regulatory penalties can significantly inhibit the financialization level of enterprises, and hypothesis  $H_1$  is proved.

Table 1. Benchmark regression results

VARIABLES	(1)	(2)	(3)	(4)
	FinRatio	FinRatio	FinRatio	FinRatio
<i>LBankPenalty</i>	-0.0016***	-0.0030***		
	(0.0003)	(0.0003)		
DID			-0.0035***	-0.0020***

			(0.0003)	(0.0005)
Constant	0.3087***	0.4102***	0.3133***	0.4060***
	(0.0004)	(0.0303)	(0.0003)	(0.0304)
Individual fixation	Yes	Yes	Yes	Yes
Time fixed effect	Yes	Yes	Yes	Yes
Urban fixed effect	Yes	Yes	Yes	Yes
Observations	17,025	17,025	17,025	17,025
R2	0.7200	0.7658	0.7207	0.7660

**Note:** \*, \*\* and \*\*\* indicate significant at the level of 10%, 5% and 1% respectively; The cluster standard error is in brackets.

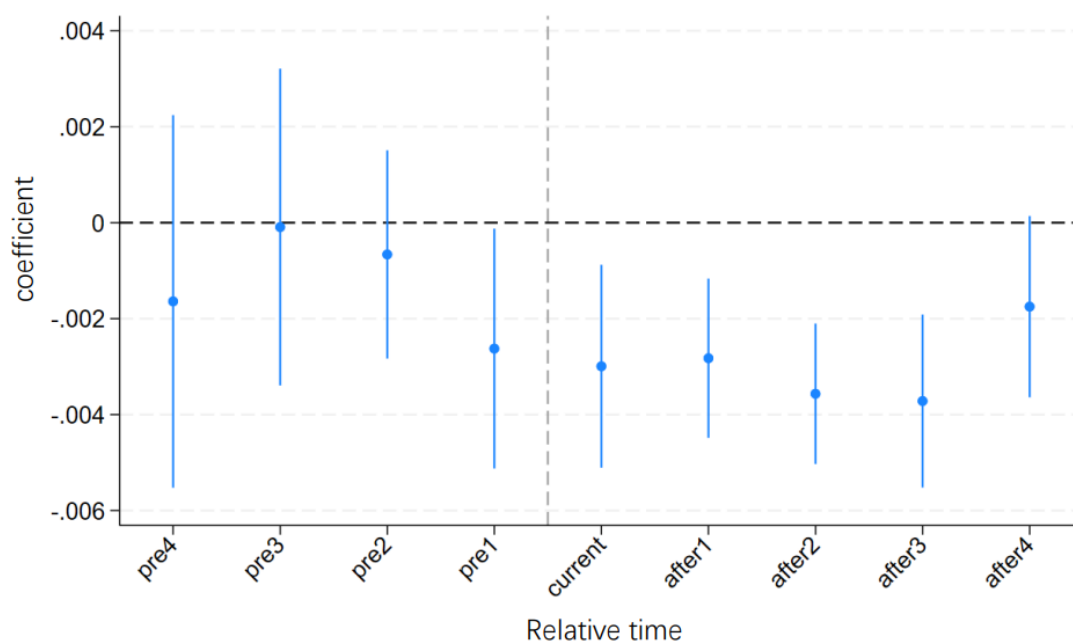


Figure 1. Parallel trend test chart

### 5.2. Addressing endogeneity

In order to alleviate the potential sample selection bias in observational studies, this study uses the propensity score matching method (PSM). Considering the possible heterogeneity of banking supervision among different cities, especially the provincial branches of the State Administration of financial supervision and administration are mostly concentrated in provincial capitals, resulting in relatively strict regulatory standards in such areas. Based on this, this study constructs urban virtual variables reflecting the intensity of banking supervision, which are specifically defined as areas where the frequency of penalties is higher than the median of cities in China.

Through PSM technology, the 1:1 no return nearest neighbor matching strategy is adopted to implement annual matching and cross period hybrid matching respectively, so as to control the impact of confounding factors such as enterprise size and industry characteristics and ensure the reliability of causal inference. The balance test after matching showed that there was no significant difference in key variables between the treatment group and the control group, which met the common support hypothesis. The empirical results are shown in Table 2. The analysis shows that the increase of regulatory intensity has a significant negative impact on the proportion of financial asset allocation of enterprises (the coefficient is - 0.0030,  $p < 0.01$ ), which confirms that strict regulatory measures can effectively curb the tendency of funds to break

away from the real economy. This conclusion is also robust in mixed time span matching (coefficient - 0.0030,  $p < 0.01$ ), further supporting the reliability of the research hypothesis.

Table 2. Results of Addressing endogeneity

VARIABLES	(1)	(2)	(3)	(4)
	FinRatio	FinRatio	FinRatio	FinRatio
	Matching year by year		Hybrid matching	
LBankPenalty	-0.0030***		-0.0030***	
	(0.0003)		(0.0003)	
DID		-0.0014*		-0.0016**
		(0.0008)		(0.0007)
Constant	0.3870***	0.4001***	0.4070***	0.3966***
	(0.0301)	(0.0292)	(0.0269)	(0.0285)
Observations	16,091	16,262	16,089	16,650
R2	0.7693	0.7658	0.7656	0.7683

**Note:** \*, \*\* and \*\*\* indicate significant at the level of 10%, 5% and 1% respectively; The cluster standard error is in brackets.

### 5.3. Robustness check

In order to ensure the reliability of the empirical conclusions, this study uses alternative measurement strategies to test the possible errors caused by the measurement of the explained variables. That is, in order to avoid the estimation error caused by the addition of constant terms in the traditional log transformation, the inverse hyperbolic sine (IHS) is introduced to reprocess the enterprise financialization index, and the model is refitted based on the adjusted data. The regression results in Table 3 show that the coefficient direction and significance level of the core explanatory variable have not changed significantly (for example, the LBankpenalty coefficient is - 0.0029,  $p < 0.01$ ), It is confirmed that the research conclusion is robust to the choice of variable measurement methods. This test process eliminates the interference of data processing on causal inference and strengthens the credibility of research conclusions.

Table 3. stability test results of replacement estimation method

VARIABLES	(1)	(2)
	FinRatio_asinh	FinRatio_asinh
LBankPenalty	-0.0029***	
	(0.0003)	
DID		-0.0019***
		(0.0005)
Constant	0.3935***	0.3896***
	(0.0277)	(0.0278)
Observations	17,025	17,025
R <sup>2</sup>	0.7653	0.7655

**Note:** \*, \*\* and \*\*\* indicate significant at the level of 10%, 5% and 1% respectively; The cluster standard error is in brackets.

### 6. Mechanism Analysis

In order to explore whether banking regulatory measures can promote the return of funds to the real field by improving the financing allocation of enterprises, this study refers to three sets of core variables proposed by Wei Jian (2024): one is the ratio of long-term loan increment to

total liabilities, which is used to measure the ability of enterprises to obtain long-term funds. The second is the proportion of debt interest expenditure in total borrowing, reflecting the changes in financing costs of enterprises. The third is the scale of informal financing, which is calculated by the natural logarithm of entrusted loans, entrusted financial management and private lending, in which private lending data are extracted on the basis of other accounts receivable. This analytical framework aims to reveal the regulatory policy's adjustment path to the capital flow of enterprises and its promotion effect on real investment.

Table 4. Bank regulatory penalties and optimization of enterprise credit structure

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	New growth loans		Cost of corporate debt		Scale of informal lending	
LBankPenalty	0.0015***		-6.8890***		-0.0448***	
	(0.0004)		(1.9015)		(0.0113)	
DID		0.0006**		-13.6167**		-0.0313**
		(0.0003)		(5.2193)		(0.0126)
Constant	0.0915***	0.0929***	-201.5938	-223.8857	20.2000***	20.1356***
	(0.0157)	(0.0159)	(137.8)	(139.4)	(0.391)	(0.394)
Observations	16,810	16,810	14,289	14,289	17,025	17,025
$R^2$	0.1008	0.1008	0.3738	0.3739	0.5754	0.5755

**Note:** \*, \*\* and \*\*\* indicate significant at the level of 10%, 5% and 1% respectively; The cluster standard error is in brackets.

The empirical test results in Table 4 show that bank regulatory penalties have a significant impact on the optimization of enterprise credit structure. The specific manifestations are as follows:

### 6.1. Loans in the new growth period: stable financing support and return to the main business

Compared with short-term loans, long-term loans can provide more stable sources of funds for enterprises and reduce liquidity risks, thus supporting enterprises to invest in long-term capital. The empirical results show that bank regulatory penalties significantly increase the proportion of loans in the new growth period of enterprises in total liabilities (the coefficient is 0.0015,  $p < 0.01$ ). The theoretical basis of this phenomenon is that regulatory penalties encourage banks to reduce their dependence on high-risk, short-term financial products and instead bind the operating needs of real enterprises through long-term loans.

### 6.2. Corporate debt cost: reduce financial pressure and transfer of investment preference

Bank regulatory penalties significantly reduce the cost of corporate debt (coefficient - 6.8890,  $p < 0.01$ ), which results from regulatory constraints on bank violations. Specifically, regulatory penalties force banks to optimize risk pricing mechanisms, reduce credit premiums for high-risk enterprises, and strengthen interest rate incentives for compliant enterprises.

### 6.3. Scale of informal lending: curbing shadow banking and capital idling

Informal lending (such as entrusted lending and private lending) is an important channel for funds to break away from the real economy. The empirical results show that bank regulatory penalties significantly reduce the scale of informal lending (coefficient - 0.0448,  $p < 0.01$ ). Its

mechanism is reflected in two aspects: first, regulatory penalties directly restrict banks from transferring funds to informal channels through off balance sheet business. For example, after a city commercial bank was punished for illegal entrusted financial management business, its off balance sheet assets were reduced by 30%. The second is to increase the illegal cost of enterprises participating in shadow banking activities by strengthening information disclosure requirements.

The above results show that bank regulatory penalties reconstruct the financing structure of enterprises, reduce the idling of funds in the financial system, and finally promote the transformation of enterprises from virtual investment to real operation by expanding long-term credit support, reducing financing costs and restricting informal financing. This mechanism verifies the core logic of hypothesis H<sub>2</sub>, that is, the optimization of credit structure is the key transmission channel for bank supervision to promote "de emptiness to reality", which provides an empirical basis for the design of differentiated regulatory policies and the precise allocation of financial resources.

## 7. Conclusions and Suggestions

Based on the data of A-share listed companies in China from 2011 to 2020 and the information of bank administrative penalties from the State Administration of financial supervision and administration, this paper systematically discusses the impact mechanism and effect of bank regulatory penalties on enterprises to "get rid of falsehood and turn to reality". The empirical results show that bank regulatory penalties can significantly restrain the level of enterprise financialization, which is manifested in the decline of the proportion of financial assets in total assets. The robustness of this conclusion is verified by benchmark regression, generalized double difference model (DID), endogenous processing and robustness test. Further mechanism analysis shows that regulatory penalties play a key role by optimizing the credit structure of enterprises: on the one hand, regulatory pressure urges banks to increase the supply of long-term loans to real enterprises and reduce the cost of corporate debt. On the other hand, the scale of informal lending (such as entrusted loans and private lending) has been significantly reduced, thus restraining the idling of funds in the financial system and guiding enterprises to return to their main business investment. In addition, the analysis of policy dynamic effects shows that the effect of regulatory penalties on "getting rid of falsehood to reality" has increased significantly in the fourth year after the implementation of the policy, indicating that the release of policy effects takes some time to accumulate, and the sustainability and stability of supervision are crucial to consolidating the achievements of enterprise transformation.

Based on the above conclusions, this paper puts forward the following policy suggestions: we need to improve the differentiated supervision mechanism and implement precise policies according to the characteristics of different industries and enterprises. For example, for enterprises in strategic emerging industries and green low-carbon fields, compliance requirements can be moderately relaxed and targeted credit support can be provided, while regulatory constraints should be strengthened for highly leveraged and speculative enterprises. At the same time, the formulation of regulatory standards needs to be dynamically adjusted according to the level of regional economic development and risk characteristics to avoid the negative impact of "one size fits all" on real financing. We should further optimize the credit structure, encourage banks to increase long-term loans through tax incentives or regulatory scoring incentives, strictly regulate informal financing channels, and improve the information disclosure mechanism to curb shadow banking activities. Third, we need to balance financial innovation and risk prevention and control, support compliant financial products (such as

supply chain finance and green bonds) serving the real economy, and use big data and artificial intelligence technology to strengthen capital flow monitoring and improve regulatory accuracy. In addition, the construction of policy coordination system is very important. The linkage between fiscal policy and monetary policy (such as discount loans and special funds) can reduce the financing cost of real enterprises and enhance the attractiveness of industrial investment. At the same time, we should strengthen corporate governance constraints, require listed companies to disclose the rationality of financial asset allocation, and incorporate "getting rid of falsehood to reality" into the social responsibility evaluation system to guide management to focus on the development of the main business. We also need to pay attention to the continuity and stability of regulatory policies, establish a dynamic evaluation mechanism to regularly test the effectiveness of policies, and flexibly adjust policy tools in combination with economic cycles and market changes. The improvement of cross sectoral coordination mechanism also needs to be promoted simultaneously to ensure that the objectives of financial supervision are deeply in line with the development needs of the real economy.

Future research can further expand the heterogeneous impact of regulatory penalties, such as analyzing the differences between state-owned banks and city commercial banks in policy implementation, or exploring the role of regulation on enterprise innovation quality and total factor productivity. In addition, the comparison of the reference significance of the international financial supervision model to China's practice will also provide a richer perspective for policy optimization. In short, this paper reveals the positive role of bank regulatory penalties on enterprises from the theoretical and empirical levels, and provides a scientific basis for optimizing the allocation of financial resources and preventing systemic risks. Through the precise design and coordinated development of policy tools, China's financial system is expected to better serve the real economy and promote high-quality economic development.

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