Research on the Impact of Inclusive Finance on SME Financing: Taking Shenzhen as an Example

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Abstract: As an important tool to alleviate financing constraints for small and medium-sized enterprises, the mechanism and implementation path of inclusive finance urgently need to be further studied in the context of the digital economy. This article takes Shenzhen as the research object, based on panel data of 30 small and medium-sized enterprises in the city from 2013 to 2023, constructs an empirical model covering core variables such as coverage breadth (DFI-B), usage depth (DFI-D), digitalization degree (Digital), and enterprise liquidity (CR), and systematically analyzes the impact of inclusive finance on financing for small and medium-sized enterprises.

Keywords: Inclusive Finance; Financing for Small and Medium-Sized Enterprises; Digital Finance; Financial Technology

1. Introduction

Small and medium-sized enterprises (SMEs) play a strategic role in stabilizing the job market, promoting industrial upgrading, and enhancing economic vitality. However, the problem of financing constraints has continuously hindered their development. Traditional financial institutions face challenges such as rigid credit evaluation mechanisms, insufficient collateral, and information asymmetry during the credit granting process, leading to an over-concentration of financial resources in large enterprises. Taking the Shenzhen Science and Technology Innovation Demonstration Zone as an example, SMEs account for 99.3% of all enterprises in the city, among which over 65% of science and technology-based enterprises have the typical "light asset" operation characteristic, relying on intellectual property and intangible assets as their core competitiveness. However, the current bank credit system still predominantly uses fixed asset collateral as a risk control measure, making it difficult to effectively meet their flexible and diverse financing needs.

To address this structural contradiction, the inclusive finance system has opened up new paths for SME financing through the coordination of institutional innovation and technological empowerment. Since the State Council issued the *Plan for Promoting the Development of Inclusive Finance* in 2013, China has established an inclusive finance development paradigm of "policy incentives + technology-driven." Shenzhen, as a testing ground for reform and opening-up, has typical demonstrative significance in inclusive finance practices. The Shenzhen Branch of Industrial and Commercial Bank of China (ICBC) has innovatively developed the "Park e-Loan" product, using big data technology to build a multi-dimensional credit evaluation model that incorporates 18 innovation indicators such as R&D investment intensity and patent technology conversion rate into credit assessment. This has enabled full-process online approval within 3 working days, covering 326 industrial parks across the city with a cumulative credit line of 1.28 billion yuan. The Shenzhen Branch of Agricultural Bank of China (ABC) has carried out the "Thousands of Enterprises and Ten Thousands of Households" special campaign through a digital marketing system, developing products like "Tax Credit Loan" and "Government Procurement Loan," which have shortened the average loan approval time for small and micro enterprises to 48 hours and effectively improved the accessibility of financial services.

Despite these remarkable achievements, the deepened development of inclusive finance still faces bottlenecks. The unimproved credit information sharing mechanism has led to high risk assessment costs—statistics show that the non-bank credit data coverage rate for SMEs in the Shenzhen area is only 42.3%. The issue of insufficient synergy between fiscal and financial policies is prominent, with local finances relying on 67% of central transfer payments, restricting the implementation of regional inclusive finance policies. As the first digital currency pilot city in China, Shenzhen also needs to address new risks such as data privacy protection and the interpretability of intelligent risk control models during its exploration of financial technology innovation. Studies based on the Shenzhen case indicate that constructing an inclusive finance ecosystem of "industrial policy guidance + financial technology support + risk compensation coordination" holds important practical value for solving the financing dilemma of SMEs, and its experience can provide a reference for differentiated development in other regions.

2. Literature Review

The theoretical foundation of inclusive finance originates from the concept of financial inclusion, with its core being the resolution of "market failure" in traditional financial systems through technological innovation and institutional design. Xing and Zhao (2019) argue that inclusive finance encompasses not only the accessibility of financial services but also the fairness and efficiency of financial resource allocation. Its essence lies in breaking down barriers of information asymmetry and collateral dependence in SME financing through technological empowerment and policy coordination [1]. Zhou et al. (2024) demonstrate that digital inclusive finance significantly lowers the financing threshold for SMEs by reconstructing credit evaluation systems, with its coverage breadth and depth of use directly influencing corporate credit availability [2]. Digital credit reporting platforms integrate non-traditional information such as corporate tax records and supply chain transaction data to replace traditional collateral, enabling financial institutions to assess risks more accurately. According to the World Bank's definition, inclusive finance is marked by meeting the financial service needs of all stakeholders at a reasonable cost, a goal made more feasible by digital technology applications.

The mechanism of inclusive finance operates through direct and indirect pathways. The direct pathway includes reducing financing costs, expanding financing channels, and optimizing debt structures. Based on a study of small and medium board listed companies, Xing and Wang (2023) found that digital inclusive finance reduces financing costs by 1.5-2 percentage points through minimizing intermediary links and alleviates liquidity pressure by extending debt maturities [3]. The indirect pathway manifests as enhancing corporate total factor productivity and innovation capabilities. Ma et al. (2021) propose that digital finance enhances R&D investment capacity by alleviating financing constraints, ultimately boosting market competitiveness. Additionally, the long-tail effect of inclusive finance allows micro and small enterprises—traditionally underserved by financial institutions—to obtain funding through digital platforms [4]. For example, FinOne's AI mortgage solution shortens loan disbursement time from weeks to days via automated approval processes, significantly improving service efficiency [5].

Research on the effect of inclusive finance in alleviating financing constraints for SMEs shows that digital inclusive finance systematically mitigates such constraints through technological empowerment. Li and Huang (2020) discover that credit endorsement from core enterprises can enhance credit availability for upstream and downstream SMEs, with digital technology applications further improving transaction transparency. Ye and Wang (2021) note that digital finance reduces the credit rejection rate for SMEs by approximately 15% through lowering information asymmetry [6]. For instance, a rural commercial bank's "Mortgage Fast Loan" product uses AI technology for automated

valuation, controlling collateral valuation errors within 5%. It also precisely matches loan amounts through big data analysis of customer behavior trajectories.

3. Research Design on the Impact of Inclusive Finance on SME Financing

3.1 Mechanism and Research Hypotheses

Digital inclusive finance optimizes enterprise capital allocation efficiency through multi-dimensional mechanisms, thereby improving cash flow conditions. First, expanding coverage breadth reduces the spatial threshold for financing services, enabling SMEs traditionally unreachable by traditional finance to access financing support conveniently [7]. The penetration of online service networks breaks geographical limitations, shortens the time gap between financing applications and fund arrival, and alleviates short-term liquidity pressures caused by delayed capital turnover. Second, enhanced depth of use is reflected in the improved dynamic adaptability between financing frequency and demand [8]. Unlike the rigid characteristics of fixed fixed amounts and terms in traditional loans, digital inclusive finance products achieve precise matching with the volatile capital needs in enterprise production and operation through flexible credit adjustments and high-frequency lending designs, reducing cost burdens from redundant financing while avoiding operational interruption risks due to capital gaps [9]. Finally, the embedding of digital technologies reconstructs financial service processes. Through automated approval, intelligent risk control, and other means, transaction costs are reduced, and the erosion of cash flow by loan interest rates and fees is minimized [10]. Under the synergistic effect of multiple dimensions, digital inclusive finance not only broadens enterprise financing channels but also achieves continuous improvement in cash flow through efficiency enhancement and cost optimization [11].

Based on the above analysis, the research hypotheses are as follows:

H1: The digital inclusive finance index significantly improves enterprise cash flow.

Digital technologies amplify the inclusive value of digital inclusive finance by strengthening information processing capabilities and risk control efficiency. On one hand, technologies such as big data and blockchain integrate multi-source unstructured data, breaking through the traditional collateral-dependent credit evaluation model and enabling financial institutions to more accurately identify enterprises' real operational conditions, thus reducing information asymmetry and financing thresholds. On the other hand, artificial intelligence and automated processes shorten loan approval cycles, responding in real time to enterprises' urgent funding needs and avoiding cash flow disruptions due to financing delays [12]. Additionally, behavioral data accumulated on digital platforms support dynamic credit adjustments, highly matching financing amounts with enterprise operational cycles and reducing the risk of capital idle or shortage mismatches. This not only improves the accessibility of inclusive finance but also transforms financing efficiency into enhanced cash flow stability through a precise and timely fund supply mechanism, forming a transmission mechanism of: "technology enhancement—service optimization—capital efficiency" [13].

Based on the above analysis, the research hypothesis is as follows:

H2: The digitalization level of inclusive finance positively moderates the improvement effect of financing on cash flow.

Enterprise liquidity indicators reflect their short-term solvency and financial health, serving as important preconditions for the effectiveness of inclusive finance. Highly liquid enterprises typically have stronger debt performance capabilities and better credit ratings, enabling them to obtain financing at lower costs and reduce the squeeze on cash flow from interest expenses [14]. Meanwhile, sufficient liquidity reserves mean enterprises can more flexibly allocate funds, efficiently investing the incremental capital provided by inclusive finance into core businesses rather than passively using it to repay due debts,

thereby amplifying the effectiveness of fund utilization [15]. Furthermore, enterprises with strong liquidity often possess more mature cash flow management capabilities, able to design optimal financing strategies by integrating the characteristics of digital inclusive finance products to achieve fine-grained matching between fund demand and supply. This two-way adaptation mechanism converts liquidity advantages into accelerated capital turnover, ultimately strengthening the cash flow improvement effect of inclusive finance [16].

Based on the above analysis, the research hypothesis is as follows:

H3: There is a synergistic effect between enterprise liquidity indicators and cash flow improvement.

3.2 Sample Selection and Data Sources

3.2.1 Sample selection

This study takes enterprises listed on China's New Third Board (NEEQ) in 2013 as the initial sample, which are screened through the iFinD financial data platform. The NEEQ is a key capital market serving small, micro, and medium-sized enterprises (SMEs), and listed enterprises generally feature light assets and high growth potential, which are highly consistent with the target clients of digital inclusive finance. During the sample screening process: First, financial enterprises are excluded, as their business models and financial statement structures differ significantly from those of other industries, potentially interfering with the generalizability of research conclusions. Second, enterprises newly listed or delisted in 2013 are excluded, and only those with complete annual accounting data are retained to ensure the continuity and comparability of financial indicators. Finally, enterprises with missing or abnormal values in key variables such as cash flow, debt-to-asset ratio, and digital investment are excluded.

Ultimately, 30 valid sample enterprises are obtained for this study.

3.2.2 Data Sources

Research data are primarily sourced from three channels:

(1) Enterprise micro-financial data: Cash flow statements, balance sheets, and income statement data (2013-2023) of sample enterprises are extracted via iFinD, including core indicators such as net cash flow from operating activities, current assets, current liabilities, inventory, total assets, and net profit.

(2) Digital inclusive finance development data: The regional digital inclusive finance index published by Peking University's Digital Finance Research Center is used, matched to provincial-level data based on enterprises' registration locations. This index covers three dimensions: coverage breadth, depth of use, and digitization level.

3.3 Variable Selection

Dependent variable (ΔCash): The annual relative change rate of net cash flow from operating activities. ΔCash directly reflects an enterprise’s core business capital turnover capacity, avoiding non-operational interference from cash flows related to investment and financing activities.

Explanatory variables:

Coverage Breadth (DFI_B): Measures the physical and virtual accessibility of financial services, reflecting the fairness of resource acquisition opportunities.

Depth of Use (DFI_D): Quantifies the intensity of enterprise interaction with digital financial products, revealing the dynamic matching efficiency between capital supply and demand.

Digitization Level (DFI_T): Reflects the impact of technological penetration on service processes and the level of cost reduction and efficiency enhancement through technological empowerment.

Control variables (selected following financial theory frameworks):

Debt-to-asset ratio: Controls the leverage effect of capital structure on cash flow volatility.

Current ratio (CR) and quick ratio (QR): Reflect short-term solvency and immediate liquidity risks; their combined use differentiates the heterogeneous impact of inventory liquidity on liquidity.

ROE and ROA: Measure the impact of profitability on cash flow.

All financial indicators are calculated using

standardized formulas.

3.4 Model Construction

To test the direct impact of digital inclusive finance on enterprise cash flow, this study constructs a two-way fixed-effects model as follows:

$$\Delta Cash_{it}=\alpha 0+\beta 1DFI\_B_{pt}+\beta 2DFI\_D_{pt}+\beta 3DFI\_T_{pt}+\beta 4DAR_{it}+\beta 5CR_{it}+\beta 6QR_{it}+\beta 7ROE_{it}+\lambda t+\varepsilon_{it} \quad (1)$$

Among them, the dependent variable ΔCashit is the relative change rate of the net cash flow from operating activities of enterprise i in year t, and the calculation formula is

$$\frac{Cash_t\text{-}Cash_{t-1}}{Cash_{t-1}} \quad (2)$$

The core explanatory variables are as follows: DFI_Bpt represents the digital inclusive finance coverage breadth index of province p (where the enterprise is registered) in year t; DFI_Dpt is the depth of use index; and DFI_Tpt is the digitization level index. λt denotes the year fixed effect (controlling for time trends), and εit is the random disturbance term.

3.5 Empirical Analysis

3.5.1 Descriptive statistics

Guangdong Province, a developed region in China's digital economy, has witnessed a significant upward trend in the coverage breadth, depth of use, and digitization level of its digital inclusive finance index from 2011 to 2023. The coverage breadth increased from 63.41 in 2011 to 410.21 in 2023, with an average annual growth rate of 16.2%. The growth rate of coverage breadth reached its peak from 2013 to 2016. The depth of use and digitization level grew rapidly in tandem from 2011 to 2013 but declined from 208.44 to 175.04 in 2014. After 2015, with the gradual improvement of the regulatory framework and the introduction of the Interim Measures for the Administration of Business Activities of Online Lending Information Intermediaries, the depth of use and digitization level resumed growth. Especially after 2017, the average annual growth rate exceeded 10%.

Statistical data on the annual changes in the three-dimensional index of digital inclusive finance in Guangdong Province show that, capital structure, and profitability are basically consistent with the typical patterns of small and medium-sized enterprises (SMEs), but significant internal differences exist. The average rate of change in net cash flow from operating activities is 12%, indicating that most enterprises have shown a trend of cash flow improvement. A standard deviation of 8% and the presence of negative values suggest that some enterprises face cyclical or structural liquidity pressures. Negative Cash values are concentrated in 2014-2016 and 2020, corresponding to periods of macroeconomic downturns, with typical events being the 2015 stock market crash and the pandemic, where external shocks amplified enterprise cash flow volatility. The average return on equity (ROE) and return on assets (ROA) are 8% and 6%, respectively, lower than the average levels of listed companies but consistent with the profit characteristics of NEEQ-listed enterprises.

3.5.2 Correlation analysis

According to the Pearson correlation coefficient matrix among variables, the three dimensions of DFI are all significantly positively correlated with ΔCash. The impact of the depth of use (DFI_D) is slightly higher than that of the coverage breadth (DFI_B) and digitization level (DFI_T), possibly because it directly reflects user activity and transaction frequency, which are closer to the actual capital needs in enterprise operations. DFI_B, DFI_D, and DFI_T are highly correlated with each other ($r=0.83\sim0.92$, $p<0.01$), especially the correlation coefficient between DFI_D and DFI_T reaches 0.92, indicating a strong synergistic effect between the application of digital technologies (such as mobile payments and big data risk control) and the depth of financial service use. CR is positively correlated with QR, suggesting that enterprises with sufficient liquidity reserves are more capable of coping with short-term payment needs and maintaining stable cash flow.

Next, a VIF (Variance Inflation Factor) test is conducted on the core variables (DFI_B, DFI_D, DFI_T, DAR, CR, QR, ROE, ROA). Moderate collinearity exists among the three dimensions of DFI, but it does not reach a

severe level. The collinearity risk of financial control variables is low, and the overall model specification is reasonable, allowing for further regression analysis.

The benchmark regression results show that the coefficients of all dimensions of digital inclusive finance (DFI_B, DFI_D, DFI_T) remain significantly positive, with magnitudes close to those of the original model (the DFI_D coefficient decreases from 0.041 to 0.039, a 4.9% reduction). The coefficient of the principal component index DFI_PCA decreases by only 0.002, indicating that the selection of profitability indicators has a weak impact on the estimation of digital finance effects. The coefficient of ROA (0.126-0.145) is slightly lower than that of ROE (0.155-0.178) in the original model, which is consistent with the theoretical difference between ROA and ROE: ROA measures the return efficiency of total assets, while ROE includes the effect of financial leverage.

4. Result Analysis

4.1 Verification of Hypothesis H1

The benchmark regression results show that the coverage breadth (DFI_B), depth of use (DFI_D), digitization level (DFI_T), and principal component index (DFI_PCA) of digital inclusive finance all have significant positive impacts on the corporate cash flow change rate (ΔCash), with coefficients ranging from 0.034 to 0.049 ($p<0.01$), fully supporting Hypothesis H1. Taking the depth of use as an example, the regression coefficient is 0.041, indicating that each 1-unit increase in depth of use raises the corporate cash flow growth rate by 0.041 percentage points. Combining with the actual data of an average annual increase of 18.7 units in depth of use in Guangdong Province from 2011-2023, the development of digital inclusive finance contributes approximately 0.77 percentage points to corporate cash flow growth annually, accounting for 6.4% of the sample enterprises' mean value—a significant economic effect. The results verify that digital technologies improve corporate cash flow by reconstructing financial service models, specifically manifested in: Big data credit reporting reducing financial institutions' reliance on collateral, enabling light-asset SMEs to obtain financing more efficiently; Blockchain technology shortening the accounts receivable turnover cycle in supply chain finance. A typical example is a manufacturing enterprise that, after accessing a blockchain bill system, shortened its accounts receivable collection days, directly releasing cash flow occupancy. Digital financial platforms' real-time credit functions enhancing enterprises' flexibility in addressing sudden funding needs and avoiding operational interruption risks caused by traditional loan approval delays.

4.2 Verification of Hypothesis H2

The digitization level, as the core dimension of digital inclusive finance, has a regression coefficient of 0.038, indicating that increased technological penetration directly drives cash flow improvement. Digital technologies amplify the role of inclusive finance through two channels: The application of AI risk control models allows financial institutions to dynamically assess enterprise operational risks, matching credit limits with actual needs and reducing capital mismatch losses; The popularization of mobile payment tools improves capital flow speed—enterprises using digital payments have a higher cash turnover rate than traditional enterprises. This demonstrates that the digitization level is not only a component of inclusive finance but also the enabling foundation for its effectiveness.

4.3 Verification of Hypothesis H3

The benchmark regression results show coefficients of 0.025 ($p<0.10$) for the current ratio and 0.018 ($p<0.10$) for the quick ratio, indicating that an increase in enterprise liquidity levels significantly promotes positive cash flow improvement, verifying the synergistic effect between liquidity indicators and cash flow growth in Hypothesis H3.

High-liquidity enterprises, due to their strong short-term solvency, obtain better credit ratings in the financing market, thereby reducing financing costs and minimizing the crowding-out effect of interest expenses on

operational cash flow. Sample data show a significant negative correlation between liquidity indicators and the debt-to-asset ratio, indicating that sufficient liquidity reserves can alleviate debt pressure by optimizing capital structure, also freeing up more space for cash flow. Adequate liquidity enhances enterprises' capital allocation flexibility, enabling them to more efficiently invest the incremental financing provided by digital inclusive finance into core businesses rather than passively repaying debts. After controlling for other variables, each 1-unit increase in the current ratio additionally increases the corporate cash flow change rate by 0.025 percentage points. Furthermore, liquidity indicators show a positive trend with all three subcategories of digital inclusive finance, indicating that the availability of digital financial tools and technological empowerment can strengthen the marginal benefits of liquidity management. This finding provides a basis for enterprises to optimize liquidity strategies: with digital finance support, maintaining appropriate liquidity reserves can buffer short-term solvency risks and achieve cash flow stability through financing cost savings and capital turnover efficiency.

5. Countermeasures and Suggestions

5.1 Optimize Digital Infrastructure to Expand the Breadth of Inclusive Finance Coverage

Based on the coverage breadth coefficient of 0.034, digital financial network construction should be promoted in layers around the spatial distribution characteristics of SMEs in Shenzhen.

First, implement grid-based coverage projects in areas with weak digital services**, such as urban villages and old industrial zones. Public data from Shenzhen Bureau of Small and Medium Enterprises shows that the density of SMEs in areas like Baoan and Longgang is significantly higher than in other administrative districts, but the coverage rate of digital payment terminals is relatively low. It is recommended to formulate a three-year action plan by street, prioritizing the installation of intelligent financial service terminals (including self-service loan machines and mobile POS devices) in industrial parks and technology incubators where SMEs are concentrated, ensuring device deployment matches the geographic distribution of SMEs. Drawing on the pilot experience of Nanshan District's "15-minute digital finance circle," fixed equipment coverage blind spots should be supplemented through mobile service vehicles and community bank outlets to achieve 100% coverage of digital financial services at the street level across the city.

Second, strengthen the integration and application of government data to break down information silos**. Relying on the "Shenzhen i-Enterprise" platform, public data such as industrial and commercial registration, tax, and social security should be integrated to build a dynamically updated corporate credit information database. Efforts should focus on supplementing non-financial data of small and micro enterprises, including supply chain transaction records and intellectual property information. Credit evaluation dimensions should be improved, and financial institutions should be promoted to directly connect with government platforms via API interfaces to develop one-click credit functions, opening small and micro credit quick loan products to eligible enterprises. For example, enterprises that have been established for at least 2 years and have good tax records could automatically generate pre-credit lines based on historical data, achieving fully digitalized processes for online applications, real-time approval, and instant fund disbursement—reducing the traditional loan approval cycle from 5-7 days to 24 hours.

Additionally, establish a dynamic monitoring and feedback mechanism for coverage breadth. Led by Shenzhen's Local Financial Regulatory Bureau in conjunction with third-party research institutions, a Digital Finance Coverage Index Report should be released quarterly, statistically analyzing core indicators such as mobile payment penetration rate and online financing application rate by administrative division. For regions where service coverage rates consistently fall below the citywide

average, financial institutions should be required to formulate special rectification plans, such as adding service outlets and optimizing equipment layouts. Meanwhile, industry associations should conduct hands-on training on digital financial tools, focusing on scenario-based teaching for SME owners—such as simulating online financing application processes and analyzing intelligent risk control logic—to enhance enterprises' awareness and willingness to use digital financial tools, ensuring policy dividends are effectively translated into practical applications.

5.2 Deepen the Integration of Fintech Scenarios to Strengthen the Depth of Inclusive Finance

Based on the depth of use coefficient of 0.041, a mechanism of "technology adaptation—scenario innovation—ecological synergy" should be constructed.

In technology application, prioritize the promotion of blockchain technology in supply chain finance. For the accounts receivable financing needs of Shenzhen's pillar industries, core enterprises should be encouraged to issue splittable and transferable electronic credit vouchers. Leading enterprises like Huawei and BYD could convert accounts payable into on-chain digital vouchers, allowing upstream suppliers to apply for financing from banks using the electronic vouchers. Through smart contracts, transaction authenticity can be automatically verified, shortening the traditional financing approval cycle from 10 working days to 3 working days while reducing operational risks from manual review.

In scenario innovation, improve the multi-dimensional adaptation capabilities of big data risk control models. Integrate enterprise operational data and innovation factors to build a "technology flow + data flow" evaluation system. Implement differentiated credit strategies for light-asset technology enterprises: if a company's annual R&D investment intensity exceeds the industry average, the expected transformation of technological achievements should be included in credit evaluations, allowing intellectual property pledge for credit loans of up to 5 million yuan. To address seasonal cash flow fluctuations identified in surveys, financial institutions should be encouraged to develop dynamic credit products that automatically adjust credit limits based on quarterly revenue growth rates, providing temporary limit increases during peak sales seasons to avoid order delivery disruptions due to funding shortages.

In ecological synergy, establish a government-enterprise-bank joint innovation mechanism. Shenzhen's Financial Bureau could set up an inclusive finance innovation lab, focusing on cross-border e-commerce and intelligent manufacturing, and select 20-30 small, micro, and medium enterprise service scenarios annually for technological research. Policy support for selected scenarios could include opening public data interfaces and granting testing sandbox permissions to guide financial institutions and tech companies to jointly develop adaptive products. For cross-border e-commerce enterprises' overseas fund collection needs, a blockchain real-time foreign exchange settlement system could be piloted, reducing fund arrival time from T+3 to T+0 to avoid exchange rate volatility risks. Meanwhile, technical application specifications should be formulated simultaneously, clarifying data privacy protection and algorithmic ethics requirements to ensure innovation risks are controllable.

5.3 Build a Precise Financing Service System to Enhance Industry Adaptability

Given that the service industry accounts for over 60% of Shenzhen's economy, differentiated financing service plans should be developed:

For tech service enterprises, focus on improving the valuation of technical assets. Jointly formulate an Intellectual Property Pledge Valuation Operation Guide with third-party professional institutions, clarifying evaluation methods and discount coefficients for intangible assets such as patents and software copyrights. For patents in the clinical trial stage, pledge rates could be set in stages

according to R&D progress to dynamically reflect the marketization potential of technical achievements. Banks should be urged to establish specialized technical credit departments with composite loan review teams with industrial backgrounds, aiming to double the scale of intellectual property pledge financing within three years.

For cash flow-driven industries like wholesale, retail, and logistics, develop data-enhanced financing products. Construct an operational health index based on enterprise POS machine transaction records and warehouse management system data. For retail enterprises with consecutive 6-month month-on-month sales growth exceeding 5%, automatically trigger a credit limit increase mechanism, providing up to 5 million yuan in credit loans with interest rates 10%-15% below the benchmark. Meanwhile, establish industry risk early warning mechanisms: implement bailout policies for foreign trade enterprises severely impacted by external shocks, automatically activating emergency financing channels when customs export data declines by over 15% year-on-year for three consecutive months.

Additionally, improve the policy-based financing guarantee system. It is recommended to increase the risk tolerance of government-backed financing guarantee institutions from 1% to 2% and implement a "guarantee upon lending" model for loans below 5 million yuan per household. Explore direct data connectivity between banks and guarantee institutions, allowing guarantee agencies to access real-time corporate tax and social security data, reducing guarantee approval processes from 5 working days to 48 hours. For "little giant" enterprises specializing in niche markets, pilot a "investment-loan-guarantee" linkage model, where venture capital institutions provide equity financing, banks offer supporting credit loans, and guarantee agencies cover partial risks, forming full-lifecycle services.

5.4 Improve Liquidity Support Mechanisms to Enhance Enterprise Risk Resistance

Based on the significant impact of the current ratio coefficient (0.025), systematically optimize enterprise liquidity management:

First, promote the development of intelligent liquidity monitoring platforms by financial institutions, which should seamlessly connect with enterprise ERP systems to collect 12 core financial indicators, with a focus on accounts receivable turnover rate and inventory days. When cash reserves fall below the warning line of monthly operating expenses, customized solutions should be automatically pushed—recommending factoring financing for long-term accounts receivable and advance payment financing for seasonal procurement needs—striving to reduce liquidity crisis resolution response time to 24 hours.

Second, improve the liquidity emergency support system. The municipal finance department could establish a liquidity bailout fund for SMEs to provide bridge loans to enterprises facing short-term funding shortages. Eligible applicants must have no non-performing credit records in the past two years and a year-on-year decline in main business income of less than 20%, with single loan terms not exceeding 90 days and interest rates no more than 50 basis points above the current LPR. Industry associations should be encouraged to launch enterprise mutual aid funds, where member enterprises pay differentiated guarantees based on credit ratings and can apply for short-term loans of up to three times their guarantee contributions in case of sudden funding shortages.

Finally, incorporate liquidity indicators into financial incentive mechanisms. Enterprises with continuously improved current ratios should be rewarded with loan interest subsidies and guarantee fee reductions.

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