ANALYSIS OF THE IMPACT OF MACRO POLICIES AND ENTERPRISE FACTORS ON THE FINANCING EFFICIENCY OF SMALL AND MEDIUM-SIZED CHINESE ENTERPRISES

A Dissertation
Submitted to
the Temple University Graduate Board

In Partial Fulfillment
of the Requirements for the Degree
DOCTOR OF SCIENCE

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December 2024

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ABSTRACT

Small and medium-sized enterprises have always been the main force of economic development in our country, carrying its financing difficulties and expensive problems have been much concerned. This dissertation aims to study the factors affecting the financing of SMEs and focuses on the perspective of macro policies and enterprises themselves. Based on this, this dissertation uses the panel data of listed companies in China's SME Board and GEM Board from 2009 to 2022. First, using factor analysis method, this dissertation constructs a comprehensive index of corporate efficiency by using 7 financial indexes, such as debt and owner's equity, debt-to-interest ratio and profitability. Secondly, it examines the influence of macro-policies (tax incentives and fiscal subsidies) and enterprises' own factors on the efficiency of SMEs. By using the intermediary effect model, this dissertation further analyzes financing constraints and enterprise innovation level as the mechanisms by which macro policies affect the efficiency of SMEs and analyzes the heterogeneity of enterprise efficiency according to the nature of enterprise ownership, degree of industry competition and enterprise scale.

The empirical results show that macro policies (tax incentives and government subsidies) have a positive effect on the efficiency of SMEs. Corporate factors, including corporate scale, ownership concentration, market-to-book ratio and establishment years, have a positive effect on corporate efficiency, while market-to-book ratio has a negative effect on corporate efficiency. This paper finds that macro-policies (tax incentives and government subsidies) affect the efficiency of enterprises through two mechanisms: easing financing constraints and improving the innovation level of enterprises. In

addition, for enterprises with low industry competition, the preferential tax policies are more obvious. No matter for the nature or size of enterprises, tax incentives and government subsidies have no significant effect on the financing of enterprises.

These findings emphasize the key role of macro policies and corporate factors in improving the efficiency of small and medium-sized enterprises. It provides an important reference for relevant decision-makers to formulate more effective policy measures to support the financing needs of small and medium-sized enterprises and promote their sustainable development.

Key words: Efficiency, macro policies, firm factor.

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CHAPTER 1

INTRODUCTION

Research Motivation

Small and medium-sized enterprises (SME) are the main force behind China's economic growth, product innovation, and development transformation. According to the new small and medium-sized enterprises classification standard (2011) and the second economic census (2009), China's small and medium-sized enterprises account for 99.7% of the total number of enterprises, providing more than 80% of urban jobs, more than 60% of total GDP and tax revenue, 65% of product innovation and 75% of invention patents. However, for a long time, financing difficulties and costly financing have restricted the growth and development of small and medium-sized enterprises in China and become an important bottleneck in China's economic development.

Judging from international experience, the problem of financing difficulties and costly financing for small and medium-sized enterprises is a long-standing global problem. During the Great Depression of the 1930s, the British government appointed the "Financial Industry Committee" to investigate and analyze the British financial system and corporate conditions. It issued the famous "the Macmillan Report". The report shows that during the Great Depression, British capital suppliers had a serious lack of motivation to provide financing to small and medium-sized enterprises. There was always an obvious funding gap in the development process of small and medium-sized enterprises. This gap is also known as the "Macmillan Gap". Nowadays, nearly 90 years later, the global economic environment and financing structure have undergone tremendous changes, financial innovations are emerging, and financing is becoming

increasingly frequent, the Macmillan gap remains to some degree in different countries and regions. Zhao and Feng (2007) believe that the root cause of the funding gap lies in financing constraints, and through a series of empirical analyses, they find that Macmillan gap is widespread all over the world. It exists in different forms, especially in some developing countries and regions with a lack of supportive policies for small and medium-sized enterprises, an imbalanced financial structure, and an imperfect financing system. Economic and finance researchers in various countries focus on solving the common and long-standing financing difficulties for small and medium-sized enterprises. It is also an important issue that policymakers are extremely concerned about and hope to solve through regulating macroeconomic factors.

From the perspective of policy practice, small and medium-sized enterprises generally have lower capital strength and more fragile operating and financial conditions, hence a lower level of risk tolerance. Small and medium-sized enterprises can provide less collateral and have lower collateral value. They often struggle in negotiations with financial institutions due to their greater information asymmetry causing adverse selection for banks. An effective way to solve their financing problems is introducing special government support policies—necessary means. Such policies include providing a good environment for the survival and development of enterprises, encourage innovation, promote employment, and thus maintain the vitality of the entire society and economy. Governments of various countries have formulated a variety of targeted policies based on their national conditions. Developed countries such as the United States, Germany, and Japan have provided small and medium-sized enterprises with the supportive systems, specialized development management agencies, reliable credit management systems, and

government credit guarantees and encouraged venture capital institutions to provide financing channels. Japan's policy financing system focuses on the participation of social forces and organizes qualified non-profit organizations to participate in the Small and Medium-sized Enterprise (SME) support agency system. First, the "Chamber of Commerce and Industry" in the city and village (they are both chambers of commerce established according to the principle of "one place" and in accordance with relevant legislation), all small and medium-sized enterprises in the region are willing to become its members. Local governments provide certain financial subsidies to the business service centers set up by the two chambers, and the "business instructors" and "bookkeepers" of these organizations provide free management consulting services to all member companies in their jurisdictions, and the business instructors are certified by the Japan Small and Medium Business Agency. Banks usually consult local chambers of commerce before lending. Second, the Small and Medium Enterprise Administration also certifies a group of consultants in other business associations and accounting, finance and consulting firms, and the government will provide certain subsidies. These measures are conducive to narrowing the information asymmetry between banks and enterprises. As a developing country, India aims to provide financing for small and medium-sized enterprises through the establishment of policy financial institutions such as the Small Industry Development Bank of India and the Regional Finance Corporation. Establish a government investment fund for small and medium-sized enterprises in the form of development fund and risk fund, and distinguish between backward regions or economically backward groups and small and medium-sized enterprises with high scientific and technological content, strong innovation ability and more development

momentum for investment and cultivation; The establishment of small and medium-sized enterprise credit guarantee fund and small and medium-sized enterprise credit rating company to solve the problem of information asymmetry between banks and enterprises.

Domestic and foreign researchers have put forward different research perspectives on the financing problem for small and medium-sized enterprises from the macro and micro levels based on the different situations in their respective regions, but not limited to financial structure, information theory, policy incentives and bank-enterprise relations. The research on the micro level mainly focuses on increasing the information disclosure of private enterprises. Wu et al. (2017) found that voluntary disclosure of social responsibility information can help weaken the impact of information asymmetry on the financing constraints of private enterprises. Chen and Wang (2020) studied the influence of social status on financing constraints of private enterprises, and found that from the perspective of information transmission, social status contains information about enterprises' operating conditions and product quality, which can provide certain references for financial institutions and alleviate the information asymmetry between them and private enterprises. At the macro level, the research mainly focuses on political connections, financial systems, and policies. Yu et al. (2012) used the microstructure data of the securities market to construct an index of the degree of information asymmetry between the supply and demand of funds and found that political correlation played a signal transmitting function, which was conducive to alleviating information asymmetry. According to the research of Wu and Huang (2017), the capital settlement ability of external financing institutions and the perfection of loan business functions and guarantee business functions are highly correlated with the financing constraint level of private

enterprises. Stiglitz and Weiss (1981) gave a classic explanation based on the information economics theory for the problem of borrowing difficulties for small and medium-sized enterprises. That is, due to the serious information asymmetry between banks and enterprises, under the conditions of fixed interest rates and excess capital demand, banks are unable or unwilling to raise interest rates on their loans, and adopting some non-interest rate financing conditions will lead to adverse selection so that credit rationing to small and medium-sized enterprises becomes a rational choice for banks. Bester (1987) supplemented and improved the above theory, arguing that the collateral borrowers could provide was insufficient due to the limited capital strength of small and medium-sized enterprises. Large enterprises with strong assets can obtain loans from banks by providing sufficient collateral, and some high-quality, low-risk small and medium-sized enterprises can obtain loans from banks. Since small and medium-sized enterprises have fewer assets and insufficient collateral, they cannot effectively demonstrate their credit quality, so are subject to credit rationing by banks (Bester, 1987). This theory has strong practical significance in explaining the financing difficulties of small and medium-sized enterprises in China.

First, in China's financing system, loan financing provided by commercial banks accounts for a high proportion of total financing. Small and medium-sized enterprises are highly dependent on bank loans. Rationally allocating bank funds among different enterprises is important to small and medium-sized enterprises. The theoretical framework established by Stiglitz and Weiss (1981) takes the micro perspective of banks as the starting point to explain the impact of banks' rational decision-making on the financing of small and medium-sized enterprises under conditions of information

asymmetry, which aligns with China's current financial structure. Government-controlled banks may be more supportive of SMEs as a result of policy orientation, even if these enterprises have higher risks or lower returns. Government-controlled banks may be more willing to shoulder certain social responsibilities and provide necessary financial support to SMEs to help them tide over difficulties or boost economic growth. Private banks, on the other hand, are more likely to be cautious in approving loans to SMEs for the sake of risk management and profit maximization, especially in the case of information asymmetry. This could lead to private banks taking a lower share of SME financing and focusing more on larger, less risky companies. Therefore, under the country's current financial structure, government-controlled banks may play a greater role in supporting the development of SMEs, while private banks focus more on market efficiency and risk management. Government-controlled banks can compensate for market failures through policy guidance, especially in areas where private banks are reluctant to provide financing because of risk appetite.

Second, in recent years, the central and local governments have introduced several support policies for small and medium-sized enterprises, including fiscal policies (direct and indirect subsidies, tax reduction policies, monetary policies, preferential interest rates), supplementing guarantees (professional credit guarantee platforms), increasing financing channels (encouraging venture capital institutions to provide equity investments to small and medium-sized enterprises), and improving information transparency (strengthening credit reporting mechanisms). Therefore, it is important to study how and to what extent the above macro policies affect the rational decision-

making of banks and financial institutions, thereby eliminating credit rationing or reducing its negative impact on the financing of small and medium-sized enterprises.

Thirdly, how and to what extent market participants respond to macro-control policies will affect the advancement and effectiveness of these policies, such as how banks adjust the allocation of credit funds to enterprises with different risk characteristics in the context of targeted cuts to required reserve ratios and preferential interest rates. Large enterprises might "imitate" small and medium-sized enterprises by registering subsidiaries, establishing Special Purpose Vehicles (SPV) to obtain policy dividends, and how high-risk enterprises use information asymmetry to squeeze out low-risk small and medium-sized enterprises, which provides certain guidance for the evaluation of policy effects and the adjustment of orientations.

Since many factors cause financing difficulties for small and medium-sized enterprises, this article focuses on studying the impact on the financing of small and medium-sized enterprises from two aspects: macroeconomic policies and the enterprise factors. Based on the research of this article, some theoretical guidance is provided in financing small and medium-sized enterprises.

Research Question

With the development of the global economy, the status of small and medium-sized enterprises in the national economic system has become increasingly prominent. They serve as engines of innovation and growth, playing an important role in employment, tax revenue and overall economic development. However, many small and medium-sized enterprises need help with the financing process, such as insufficient

sources of funds, high financing costs, and difficulties in risk management. These problems have seriously restricted the growth and development of small and medium-sized enterprises. Therefore, improving the efficiency of small and medium-sized enterprises has become an urgent problem to be solved.

Regarding macro policies, government support for small and medium-sized enterprises is one of the key factors affecting their efficiency. Government policies, such as financial subsidies, tax incentives, and credit support, can directly or indirectly improve the financing environment of small and medium-sized enterprises, reduce their financing costs, and thus promote the healthy development of small and medium-sized enterprises. In addition, macroeconomic conditions and financial market development levels will also impact the efficiency of small and medium-sized enterprises.

As for firm-level factors, governance structure, financial status, and product market competition will all impact its efficiency. A good corporate governance structure can increase investors' trust in the company, thereby reducing financing costs. A healthy financial situation can improve the company's credit rating, thereby reducing financing costs. Fierce product market competition can prompt companies to work harder to improve operating efficiency, thereby reducing financing risks. By analyzing the impact of the aforementioned factors on small and medium-sized enterprises' efficiency, I can provide valuable references and suggestions for policymakers and corporate decision-makers to improve the financing environment for small and medium-sized enterprises and promote their healthy development.

CHAPTER 2

LITERATURE REVIEW & THEORY

Literature Review

Regarding the study of the impact of macroeconomic policies on the financing of small and medium-sized enterprises, domestic scholars provide analyses from different perspectives: Zhu (2022) studied the extent to which different structural monetary policy tools alleviate the financing constraints of small and medium-sized enterprises, and how structural monetary policies pass through credit channels, and how effective the channel is in alleviating financing constraints of small and medium-sized enterprises. The article uses the difference-in-differences method to verify the role of structural monetary policies in alleviating financing constraints. Through a two-way fixed effects panel regression model, the model verifies the role of credit channels in structural monetary policy, alleviating financing constraints of small and medium-sized enterprises. The results show that structural monetary policy tools can alleviate the financing constraints of small and medium-sized enterprises through credit channels.

Ma and Wang (2017) mainly studied the joint effects of macroeconomic policies and micro-characteristic factors on the adjustment of corporate financing structure. Based on theoretical analysis, they conducted an empirical analysis using China's listed companies as a sample and came to the following conclusions: From the perspective of macroeconomic policies, the expansion of fiscal policy and monetary policy has accelerated the adjustment speed of corporate financing structure, and this impact is different on state-owned and non-state-owned enterprises. The financing constraints

imposed on enterprises have significantly reduced the speed of corporate financing structure adjustment. Compared with non-financing-constrained enterprises, expansionary macroeconomic policies play a more significant role in promoting the speed of financing structure adjustment of financing-constrained enterprises.

Xie (2014), based on the quarterly data of Shenzhen and Shanghai-listed companies from 2002 to 2010, evaluated the mitigating effect of macro monetary policy on corporate financing constraints from the perspective of regional financial development and examined the transmission of macro monetary policy from the corporate investment level mechanism. The empirical research results of the article show that loose monetary policy promotes the expansion of corporate investment, alleviates corporate financing constraints by reducing the sensitivity of the internal cash flow of corporate investment, and improves the corporate financial ecological environment. A good corporate financial environment should have diversified and convenient financing channels, reasonable financing costs, stable policy and legal guarantees, strong support from financial institutions, and sound risk management and credit systems. At the same time, it should encourage innovation and entrepreneurship, promote internationalization and fintech applications, and support the sustainable development of enterprises. This comprehensive financial ecosystem can effectively promote the growth of enterprises and enhance market competitiveness. The development of regional financial markets has created a good financial ecological environment for enterprises, thereby effectively alleviating the financing constraints of enterprises. The development of regional financial markets has strengthened the easing effect of macro-monetary policy on corporate financing constraints and optimized the transmission mechanism of macro-monetary policy.

Feng et al. (2023) pointed out that "financing is difficult and expensive" is a long-term problem faced by the development of small and medium-sized enterprises. In recent years, implementing financial subsidies and preferential tax policies has effectively reduced the financing costs and financing thresholds of small and medium-sized enterprises, improving efficiency. Yu and Yang (2016), based on the public data of listed companies on the Shenzhen Stock Exchange's main board, Growth Enterprise Market (GEM) and Beijing Stock Exchange's New Third Board from 2017 to 2021, introduced the enterprise life cycle and used the system GMM regression model to comparatively analyze the impact of financial subsidies and tax preferential policies on small and medium-sized enterprises—the impact of efficiency and its effect at different stages of the enterprise. The study found that both types of policies can promote the improvement of corporate efficiency, and overall, the effect of fiscal subsidies is stronger than tax incentives. Fiscal subsidies have the strongest effect on promoting the efficiency of mature enterprises, while tax incentives have the strongest effect on the efficiency of enterprises in recession and have the weakest promotion effect.

Based on the discussions above, this dissertation propose hypothesis 1: Fiscal subsidies in macroeconomic policies improves corporate efficiency.

Chu (2021) used the panel quantile regression method to empirically test the impact of tax incentives on the investment and financing of small and medium-sized enterprises based on the data of companies listed on the Small and Medium-sized Board and Growth Enterprise Market (GEM). The regression results show that whether it is investment or financing, the impact of tax incentives in low-quantile regression is not significant, and it is only positively significant in high-quantile regression. There is even

a negative correlation with the financing of low-end Small and medium-sized enterprises. It shows that the existing tax preferential policies still have a "cumulative effect" on the investment and financing of small and medium-sized enterprises. Tax preferential treatment could be more effective and positively affect small and medium-sized enterprise groups with low investment and financing levels. Financing issues of small and medium-sized enterprises have attracted more and more attention from the government. Based on the cash-cash flow sensitivity model and empirical research based on Growth Enterprise Market (GEM) company sample data, the article concludes that government tax preferential policies cannot significantly alleviate the financing constraints of small and medium-sized enterprises. At the same time, eliminating the 2020 data affected by the COVID-19 epidemic and the re-estimation results using the GMM method to overcome endogeneity problems also show that government tax incentives do not significantly affect the financing constraints of small and medium-sized enterprises.

Meuleman and De Maeseneire (2012) used 1107 small and medium sized-enterprise databases in Belgium to study whether government financial subsidies will affect the external financing of small and medium-sized enterprises. The results found that obtaining financial subsidies can give banks and other financial institutions positive signals about the quality of small and medium-sized enterprises. At the same time, external factors such as exchange rate fluctuations (Belghitar et al., 2021) and macro policies also impact corporate efficiency. Moreover, the influencing factors of efficiency can also be divided into primary and secondary factors. For example, high financing thresholds and high time costs play a major role, while the impact of financing methods on efficiency does not play a key role. Small and medium-sized enterprises have better

access to external financing. Another view is that fiscal and taxation policies play a limited role in supporting the financing of small and medium-sized enterprises, and the effect of government financial subsidies in promoting the financing of small and medium-sized enterprises is seriously short-term.

Based on this, this dissertation propose hypothesis 2: Government subsidies will improve the efficiency of financing for small and medium-sized enterprises.

Regarding analyzing the impact of the company's situation on corporate efficiency, Zeng (2023) used China's Shanghai and Shenzhen listed private enterprise data to construct a panel data model to study the impact of resource misallocation and debt governance on corporate financing constraints. The results show a resource mismatch. The degree of financing constraints of private enterprises has an obvious positive promoting effect; the lower the asset-liability ratio, the higher the level of debt governance of private enterprises, the better the control over assets and liabilities, and the lower the difficulty of obtaining credit funds. The higher the expansion and growth of an enterprise, the degree of financing constraints will gradually decrease; the higher the proportion of shares held by the largest shareholder and the proportion of management shares, the greater the degree of financing constraints of the enterprise.

Gong (2020) analyzed the factors that affect the efficiency of listed small and medium-sized enterprises in Anhui Province. The results show that enterprise size, risk resistance ability, bank-enterprise relationship, corporate guarantee ability, investor profitability, and innovation ability significantly impact the efficiency of small and medium-sized enterprises. In this regard, corporate credibility should be improved,

corporate innovation capabilities should be enhanced, and corporate internal control should be strengthened.

Qi (2020) used World Bank questionnaire data to conduct empirical research and showed that compared with large enterprises, reducing security costs, and improving the business license system can effectively alleviate the financing problems of small and medium-sized enterprises. Financial infrastructure is more conducive to small and medium enterprises than non-financial infrastructure. Medium-enterprises improve their financing availability. Introducing technology and using R&D, information technology, new products, and new processes will benefit small and medium-sized enterprises more from financing. International experience shows that establishing targeted policies and regulations, creating convenient infrastructure, and formulating powerful innovation plans for small and medium-sized enterprises are important ways to effectively improve the availability of financing for small and medium-sized enterprises.

Huang et al. (2015) took Zhejiang as an example and constructed an analysis framework of factors affecting the efficiency of small and medium-sized enterprises from the perspective of internal and external integration. A sample survey of 306 small and medium-sized enterprises showed that in the external financing environment, the bank and government environment have a significant positive impact on corporate efficiency, the guaranteed environment has a positive impact on financing availability, and the credit environment has a significant positive impact on financing costs. In the network, extensiveness can increase financing availability, relationship strength can reduce financing costs, high reach has a significant negative impact on both financing availability and financing costs, and heterogeneity has no significant effect on efficiency.

Based on the above conclusions, corresponding management implications are put forward. Romano (2011) pointed out that equity liquidity, corporate management methods, and the company's life cycle are all key factors that affect corporate efficiency.

Wang (2022) briefly introduced the development of supply chain finance and the current situation of financing of small and medium-sized enterprises in China, using the cash-cash flow sensitivity model and the financial data of listed companies on the small and medium-sized boards of China, and explored the impact of supply chain finance development on small and medium-sized enterprises through regression analysis and robustness testing. The analysis results show that China's small and medium-sized enterprises generally face financing constraints compared to state-owned enterprises. However, with the development of supply chain finance, the degree of financing constraints has been alleviated to a certain extent.

Zhao and Ma (2020) used a combination of DEA and PCA to measure the effectiveness of Internet company financing. Research shows that the main factors affecting the efficiency of Internet companies are the company's influence in the market and the company's ability to generate revenue. Zhou and Xia (2015) studied the relationship between corporate efficiency and accounting conservatism. The two scholars found that the two are positively correlated. That is, the better the corporate accounting conservatism, the higher the corporate efficiency. Hewlett (2011) studied the relationship between corporate equity liquidity and efficiency and concluded that the two are positively correlated to a certain extent. The stronger the equity liquidity, the higher the corporate efficiency. However, the enterprise's efficiency no longer changes beyond a certain critical value. Currently, the enterprise's efficiency reaches a limited state.

CHAPTER 3

INTRODUCTION OF MODEL

Research Design

Sample selection and data source

In this dissertation, companies listed on China ‘s SME board and GEM Board from 2009 to 2022 are selected as research samples. Empirical research was conducted using panel data from CSMAR database and Wind database. In terms of data, this dissertation removes ST*, ST company samples, and samples with missing key variables. To mitigate the impact of extreme values, a 1% tail reduction process was carried out. Finally, a total of 2570 company data and 21,269 panel data were obtained.

Selected variables

(1) Dependent variables

Efficiency refers to the optimal allocation of funds at the lowest cost and risk in the process of obtaining and using funds, so as to enhance the profitability and market competitiveness of enterprises. An efficient financing system can not only meet the capital needs of enterprises, but also optimize the allocation of resources and maximize the value of enterprises. Based on the previous studies, this dissertation selects seven indicators for efficiency, namely debt and owner's equity, debt-interest ratio, profitability, growth rate of enterprise sales revenue, total asset turnover, financial expenses, and net operating cash flow, to comprehensively evaluate the efficiency of enterprises, and uses principal component analysis to obtain comprehensive indicators of corporate efficiency.

Although these indicators capture different dimensions of efficiency, through principal component analysis, multiple indicators can be integrated into one or several main components to form a comprehensive indicator. This comprehensive index can comprehensively and objectively reflect the efficiency of enterprises, avoiding the one-sidedness that a single index may bring. The selection of these seven indicators can comprehensively evaluate the efficiency of enterprises from different angles. Through the application of principal component analysis, the concept of efficiency is clearer and specific, and can scientifically reflect the actual situation of enterprises.

(2) Policy variables

Tax Incentives (Tax): In order to accurately measure the substantial benefits obtained by enterprises from government preferential tax policies, this dissertation use "tax return" as the core indicator, which comprehensively covers the amount of tax refund actually received by enterprises due to various preferential tax policies. In order to ensure comparability and stability of data analysis, this dissertation uses logarithmic processing of tax return data as a quantitative representation of tax incentives.

Government Subsidy (Subsidy): Referring to the research of Liu (2016), this dissertation takes the financial subsidies directly given by the government to enterprises as a key indicator to measure the intensity of financial support. In order to ensure the comparability and stability of the data, we carried out logarithmic processing of these subsidy amounts to construct quantitative indicators of financial subsidies.

(3) Firm-level variables

This dissertation selects variables about the company itself: **Size** represents the size of the company, the natural logarithm of the company's paid-in capital, the formula is size=ln(paid-in capital +1); **Tenhold** is the proportion of shares held by the top ten shareholders of the company, which measures the concentration of ownership; **Separation** separation rate of two rights, control and management separation degree, measure the level of corporate governance; **MB** stands for market-to-book ratio and represents the company's future development potential. **Age** represents the establishment time of the company, and the logarithmic processing is performed. The calculation formula is Age=ln (the company's establishment years +1).

(4) Intermediary variables

Financing Constraint (FC): Based on Fee, Hadlock and Pierce (2009), Kuang et al. (2010), Zhang et al. (2017), Gu et al. (2020) and Chen et al. (2020), a model to measure the degree of corporate financing constraint was established:

$P(QUFC = 1\ or\ 0|Z_{i,t}) = \frac{e^{Z_{i,t}}}{1+e^{Z_{i,t}}}$ Among them：

$$Z_{i,t} = \alpha_0 + \alpha_1 size_{i,t} + \alpha_2 lev_{i,t} + \alpha_3(\frac{CashDiv}{ta})_{i,t} + \alpha_4 MB_{i,t} + \alpha_5(\frac{NWC}{ta})_{i,t} + \alpha_6(\frac{EBIT}{ta})_{i,t}, \quad (1)$$

where: $size_{i,t}$ is the natural logarithm of total assets; $lev_{i,t}$ stands for corporate financial leverage ratio, which is total liabilities divided by total assets; $CashDiv$ represents the company's cash dividend for the year; $MB_{i,t}$ indicates enterprise market-to-book ratio, i.e., market value of equity divided by book value; NWC is net working

capital, which is working capital - money funds - short-term investment; $EBIT$ stands for profit before interest and taxes; ta is the total assets.

The first step is to standardize the three variables of company size, company age and cash dividend payout rate according to the year （$y_i = \frac{x_{i-\bar{x}}}{s}$, among them，$\bar{x} = \frac{1}{n}\sum_n^1 x_i$， $s = \sqrt{\frac{1}{n-1}\sum_{i=1}^{n}(x_i - \bar{x})^2}$）. Furthermore, listed companies are sorted (in ascending order) according to the standardized variable mean value, and the lower and upper tripartite points are respectively used as the demarcating points of financing constraints, and the virtual variable QUFC of financing constraints is determined. Listed companies with more than 66% QUFC=0 is defined as the low financing constraint group, and those with less than 33% QUFC=1 is defined as the high financing constraint group. In the second step, Logit regression is carried out on model (1) to fit the annual probability P of financing constraints of the enterprise and define it as the financing constraints index FC (the value is between 0 and 1). The larger the FC is, the more serious the financing constraints of the enterprise.

Enterprise Innovation (LnPatent): Scholars use the number of patents to measure the level of enterprise innovation. In this dissertation, the logarithm of the number of patent applications is used as the proxy variable of enterprise innovation. The formula is: $LnPatent = \ln(\text{Patent applications} + 1)$.

Table 1. Variable definition and symbol description.

Variable type	Variable	Notation	Definition
Dependent variable	Efficiency	Efficiency	Use principal component analysis to construct
Policy variable	Tax incentives	Tax	Tax= ln (tax return +1)
	Government subsidy	Subsidy	Subsidy = ln (government subsidy +1)
Intermediate variable	Financing constraint	FC	The larger the FC index, the greater the financing constraint
	Corporate innovation	LnPatent	Lnpatent= ln (patent applications + 1)
Firm variable	Enterprise scale	Size	Size=ln (paid-in capital +1)
	Ownership concentration	Tenhold	Ownership of top 10 shareholders
	Separation rate of two powers	Separation	The degree of separation of control and management
	Market-to-book ratio	MB	The ratio of market value to book value (shareholders' equity)
	Age of enterprises	Age	Age=ln (the company's establishment years +1)

Model design

In order to test the impact of tax incentives and fiscal subsidy policy variables on corporate efficiency, this dissertation constructs model (1) as follows:

$$Efficiency_{i,t} = \alpha_1 + \beta_1 Policy_{it} + \gamma \sum Firms_{it} + Industry_i + Year_t + \varepsilon_{it} \quad (1)$$

Where, $Efficiency_{i,t}$ is the enterprise efficiency index, $Policy_{it}$ is the policy variable, including tax incentives and financial subsidies, $Firms_{it}$ is the factor of small and medium sized enterprises themselves, indicating the influence of the company's own factors on the enterprise efficiency, $Industry_i$ control industry, $Year_t$ control time, i represents the enterprise, t represents the year, ε represents the residual term.

To test the influence of macro-policies on the efficiency of small and medium sized enterprises, this dissertation constructs an intermediary effect model, which is as follows:

$$Efficiency_{i,t} = \alpha_1 + \beta_2 Policy_{it} + \gamma \sum Firms_{it} + Industry_i + Year_t + \varepsilon_{it} \quad (2)$$

$$Mediation_{i,t} = \alpha_1 + \beta_3 Policy_{it} + \gamma \sum Firms_{it} + Industry_i + Year_t + \varepsilon_{it} \quad (3)$$

$$Efficiency_{i,t} = \alpha_1 + \beta_4 Policy_{it} + \omega Mediation_{i,t} + \gamma \sum Firms_{it} + Industry_i + Year_t + \varepsilon_{it} \quad (4)$$

Where, $Mediation_{i,t}$ is the intermediary variable, including enterprise financing constraints and enterprise innovation indicators. Test according to the above steps and determine whether there is an intermediary effect according to the significance of the regression coefficient. The specific criteria are as follows: In the first step, if the coefficient β_2 is significant, then the next step test is carried out; if it is not significant, it is considered that there is no intermediary effect. In the second step, if the coefficients of β_3 and ω are both significant, it indicates that there is an intermediary effect. Third, if the regression coefficient β_4 is not significant, it indicates that there is a complete mediation effect. If the regression coefficient β_4 is significant, and $|\beta_4|<|\beta_2|$, the mediated effect is called partial mediated effect.

Construction of Enterprise Efficiency Index

Selected variables

This article draws on the research of previous scholars. It uses principal component analysis to construct corporate efficiency, including liabilities and owner's

equity, debt-to-interest ratio, profitability, corporate sales revenue growth rate, total asset turnover rate, financial expenses, and operating net cash indicators.

Liabilities and Owner's Equity represent the financing structure. It shows the relative proportions of a company's debt and shareholder equity. A high debt ratio may indicate that the company relies more on borrowings for financing, while a low ratio may indicate more reliance on shareholder capital. Efficiency is generally associated with a modest capital structure, requiring a balanced use of debt and equity.

The interest coverage ratio represents solvency, which is income before interest (or EBIT) divided by interest. This ratio shows the company's ability to pay interest. A lower interest coverage ratio can mean a company is financially healthy, as interest payments are relatively small, critical to maintaining efficiency.

Profitability, corporate operating profit/total operating income, affects financing costs: Profitability (such as profit margin) can affect a company's financing costs. Banks or investors may be more willing to provide favorable financing terms if the company is highly profitable, affecting efficiency.

The growth rate of corporate sales revenue reflects growth capabilities and affects financing needs: Growth capabilities can affect a company's financing needs. High growth rates may lead to more investment and financing needs, and effective capital utilization can affect efficiency.

Total asset turnover rate reflects operating capabilities and affects cash flow: optimizing operating capabilities can help companies reduce working capital requirements, thereby affecting efficiency. Efficient operating capabilities may mean less need for debt or equity financing to maintain daily operations.

Financial expanses, reflecting the cost of financing: Financial expanses show how much a company pays for its debt. Reducing financial expenses improves efficiency because the company can obtain the funds it needs at a lower cost.

Operating net cash flow, reflecting debt servicing ability: High operating net cash flow may mean the company has enough cash flow to repay debt. Effective cash flow management can improve repayment capabilities, thereby affecting efficiency.

To sum up, this article combines the above seven indicators to construct a comprehensive index of corporate efficiency.

Factor analysis method (principal component analysis)

Factor analysis is a statistical method to identify and analyze hidden patterns between closely related variables in observed data. It attempts to summarize multiple observed variables (indicators) into a smaller number of latent factors better to understand the data structure and the relationship between variables. The following is the mathematical model of the factor analysis method:

Suppose there are N samples and P indicators, and $X_{(n\times p)}$ is the matrix formed by the sample data, as follows:

$$X_{(n\times p)} = \begin{bmatrix} x_{11} & \cdots & x_{1p} \\ \vdots & \ddots & \vdots \\ x_{n1} & \cdots & x_{np} \end{bmatrix}$$

Standardize the original data and perform dimensionless processing, $y_{ij} = \frac{x_{ij}-\bar{x}_j}{S_j}$. Through this process, the original matrix $X_{(n\times p)}$ is converted into the standard rule $Y_{(n\times p)}$, where X_{ij} is the original data and y_{ij} is the standardized data. $S_j =$

$\sqrt{\frac{\sum_{i=1}^{n}(x_{ij}-\bar{x}_j)^2}{n-1}}$ is the standard deviation of the j-th indicator. Hence, the mean of the new matrix $Y_{(n\times p)}$ is 0 and the variance is 1.

Let R be the correlation coefficient matrix of Y, then $R = YY^T$, calculate the characteristic roots of λ_1, λ_2, $\cdots$, λ_p and the eigenvectors μ_1, μ_2, $\cdots$, μ_p, and the characteristic roots and other corresponding eigenvectors are normalized orthogonal. Find the factor loading matrix A such that:

$$A = (\hat{a}_1,\ \hat{a}_1,\ \cdots,\ \hat{a}_m) = \begin{bmatrix} a_{11} & \cdots & a_{1m} \\ \vdots & \ddots & \vdots \\ a_{p1} & \cdots & a_{pm} \end{bmatrix} = \begin{bmatrix} \mu_{11}\sqrt{\lambda_1} & \cdots & \mu_{1m}\sqrt{\lambda_m} \\ \vdots & \ddots & \vdots \\ \mu_{p1}\sqrt{\lambda_1} & \cdots & \mu_{pm}\sqrt{\lambda_m} \end{bmatrix}$$

Then, the number of factors m is determined based on the size of the characteristic root and the cumulative variance contribution rate. Please select the first m eigenroots of the correlation coefficient matrix R and their corresponding eigenvectors so that $A = (\hat{a}_1,\ \hat{a}_1,\ \cdots,\ \hat{a}_m)$, so that $\hat{a}_j$ satisfies $\hat{a}_j = \mu_j\sqrt{\lambda_j}$, among them j=1,2,…,m. Then rotate the factor loading matrix A, let $\beta_j = R^{-1}\hat{a}_j$, $F_j = Y\hat{\beta}_j$ (*j=1,2,…, m*), and obtain the factor model as follows

$$f_{1j} = x_{11}\hat{\beta}_{1j} + x_{12}\hat{\beta}_{2j} + \cdots + x_{1p}\hat{\beta}_{mj}$$
$$f_{1j} = x_{11}\hat{\beta}_{1j} + x_{12}\hat{\beta}_{2j} + \cdots + x_{1p}\hat{\beta}_{mj}$$
$$\cdots\cdots$$
$$f_{mj} = x_{m1}\hat{\beta}_{1j} + x_{m2}\hat{\beta}_{2j} + \cdots + x_{mp}\hat{\beta}_{mj}$$

Then F_{ij} is the score of the j-th factor of the i-th enterprise. Finally, the comprehensive score of each sample enterprise's performance is:

$$F_i = a_{ij}f_{i1} + a_{i2}f_{i2} + \cdots + a_{ij}f_{ij}$$

Constructing comprehensive indicators of corporate efficiency

This article uses stata18 to evaluate the efficiency of small and medium-sized enterprises.

(1) Feasibility test

The feasibility test of factor analysis used the KMO test and Bartlett's sphericity test to test the correlation of variables. The test results are shown in Table 1 below. The measured value of the KMO test is 0.639, which is greater than the critical value of 0.6, indicating that the information between the variables overlaps. The degree is not very high, and the model made using factor analysis is not perfect, but it is worth trying. At the same time, the accompanying probability of the χ^2 statistical value of Bartlett's sphericity test is 0.000, which is less than the significance level of 0.05, so the null hypothesis is rejected. It is considered that the correlation coefficient matrix is significantly different from the unit matrix, indicating that the established index system can be used for factor analysis.

Table 2. KMO and Bartlett sphericity test.

KMO test results		0.639
Bartlett sphericity test	Approximate chi-square	10134.881
	df	21
	Sig	0.000

(2) Extraction of common factors

In this dissertation, principal component analysis is chosen to extract common factors. Then, the characteristic root value, variance contribution rate and cumulative variance contribution rate of common factors are calculated, and the factor variance contribution table is obtained. The results are shown in Table 2. Only the feature roots of

the first four components are greater than 1, so only the first four are extracted as principal components in this dissertation. The variance of the first principal component accounts for 25.89% of the variance of all principal components, the second principal component accounts for 15.34%, the third principal component accounts for 14.48%, and the fourth principal component accounts for 14.30%. The variance contribution rate of the first four principal components reaches 70.1%, indicating that the first four principal components are sufficient to describe the comprehensive level of corporate efficiency.

Table 3. Factor variance contribution table.

Factor	Eigenvalue	Difference	Proportion	Cumulative
Factor1	1.81265	0.739024	0.2589	0.2589
Factor2	1.07362	0.060024	0.1534	0.4123
Factor3	1.0136	0.0126843	0.1448	0.5571
Factor4	1.00091	0.0972958	0.143	0.7001
Factor5	0.903617	0.24943	0.1291	0.8292
Factor6	0.654187	0.112769	0.0935	0.9227
Factor7	0.541418	.	0.0773	1

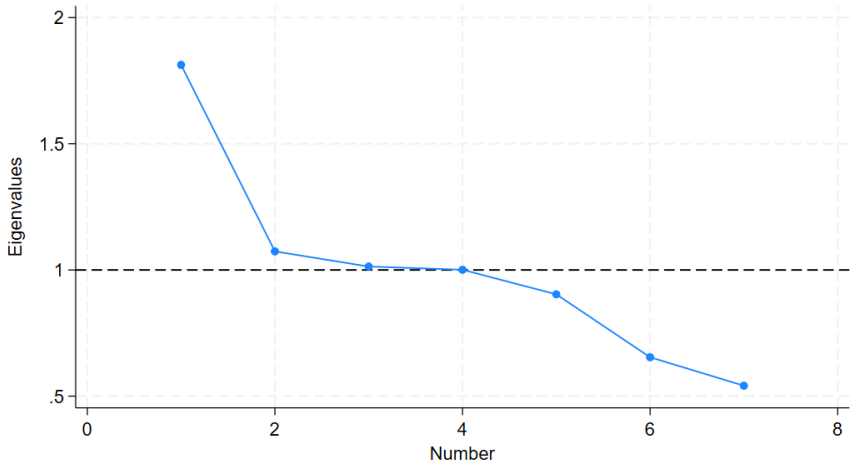

Figure 1. Principal component analysis. It shows the scree plot of eigenvalue after factor. There are four principal components with eigenvalues greater than 1.

Therefore, I extract the first four principal components to describe the comprehensive index of corporate efficiency.

(3) Report the factor load matrix

As can be seen from Table 3, Factor 1 has a high load on debt owner's equity, financial expenses and net operating cash flow. Factor 2 has a higher load on debt-to-interest ratio and total asset turnover. The third factor has a higher load on the sales growth rate (profitability) of the firm. The fourth factor has a higher load on the sales growth rate of enterprises.

Table 4. Factor load matrix.

Variable	Factor1	Factor2	Factor3	Factor4	Uniqueness
Liability owner's equity	0.8058	-0.0293	0.0138	0.0284	0.3488
Debt-interest ratio	0.3196	0.6666	-0.1573	0.0163	0.4285
Profitability	0.0045	-0.1419	0.9241	0.1008	0.1157
Enterprise sales growth rate	0.0047	-0.0041	-0.0875	0.994	0.0043
Turnover of total assets	0.095	0.73	0.3403	-0.0036	0.3423
Financial expense	0.7617	-0.1131	-0.0687	-0.0065	0.4023
Net cash flow from operations	0.6869	-0.2504	0.0807	-0.0406	0.4573

(4) Calculate the factor score

After extracting the factors, the factor score coefficient matrix is obtained according to the regression method. Since Stata is used for factor analysis, the score information of each factor can be obtained and saved directly by regression method, so the results can be directly used for the next step.

Table 5. Score coefficient matrix.

Variable	Factor1	Factor2	Factor3	Factor4
Liability owner's equity	0.44456	-0.02728	0.01357	0.02836
Debt-interest ratio	0.17633	0.62085	-0.15514	0.0163
Profitability	0.00249	-0.13213	0.91173	0.10074
Enterprise sales growth rate	0.00259	-0.00379	-0.08631	0.99306
Turnover of total assets	0.05241	0.6799	0.33572	-0.00357
Financial expense	0.42021	-0.10531	-0.06776	-0.00649
Net cash flow from operations	0.37897	-0.23324	0.07958	-0.04061

(5) Calculate the overall score

According to the factor scores given above, the comprehensive scores of each sample enterprise can be obtained each year by taking the contribution rate of factor variance in Table 2 as the weight.

$$Comprehensive\ index\ of\ enterprise\ financing\ efficiency = 0.2589 * f_1 + 0.1534 * f_2 + 0.1448 * f_3 + 0.1430 * f_4$$

CHAPTER 4

EMPRICIAL REGRESSION ANALYSIS

Descriptive Statistical Analysis

Table 6 shows descriptive statistics for each variable. Among them, the mean value of enterprise efficiency is -0.263, the minimum value is -68.643, and the maximum value is 105.143, indicating that there is a large gap between different enterprises in enterprise efficiency. The mean value of tax incentives is 12.416, the minimum value is 0, and the maximum value is 20.637, indicating a large gap in tax incentives among different enterprises. The mean value of financial subsidies is 15.952, the minimum value is 0, and the maximum value is 20.036. It indicates that the difference of financial subsidies received by different enterprises is large.

Table 6. Descriptive statistics.

Variable	Obs	Mean	Std. Dev.	Min	Max
Efficiency	21269	-.263	26.268	-68.643	105.143
Tax	21269	12.416	7.045	0	20.637
Subsidy	21269	15.952	2.791	0	20.036
Size	21269	19.958	0.927	18.138	22.516
Tenhold	21269	56.901	14.522	23.37	86.61
Separation	21269	4.423	7.099	0	27.621
MB	21269	4.029	2.996	1.244	21.144
Age	21269	9.233	6.903	1	27

Variable Correlation Analysis

This dissertation conducts correlation test analysis between the pairs of variables selected in this dissertation, and the correlation analysis results are shown in Table 7. It can be seen from the results that most of the correlation coefficients between the

variables are below 0.4, indicating that the degree of correlation between the variables selected in this dissertation is not high and there is no serious multicollinearity.

Table 7. Matrix of correlations.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) Efficiency	1.00							
(2) Tax	0.14	1.00						
(3) Subsidy	0.27	0.35	1.00					
(4) Size	0.57	0.14	0.24	1.00				
(5) Tenhold	0.00	-0.05	0.06	-0.14	1.00			
(6) Separation	0.13	-0.00	0.01	0.06	0.10	1.00		
(7) MB	0.02	-0.05	-0.12	-0.00	-0.14	0.05	1.00	
(8) Age	0.37	0.00	-0.04	0.52	-0.31	0.15	0.12	1.00

Benchmark Regression Analysis

Table 8 shows the results of baseline regression. Column (1) shows the regression results with all control variables.

The results of this dissertation show that the Size coefficient is positive and significant, indicating that the larger the enterprise size, the higher the efficiency. Large companies typically have a wider range of assets, more stable cash flows, and more market share, so they enjoy more options when it comes to financing. Its size and reputation have boosted trust and lowered funding costs. These companies typically have greater access to larger financing, more flexibility, lower financing fees, and can use these funds more effectively to support business expansion and investment.

The coefficient of Tenhold is positive and significant, and enterprises with high ownership concentration may show higher efficiency. A highly concentrated ownership structure can provide stronger decision-making power and stability, enhance investor confidence, and reduce information asymmetry. This stable management structure makes

it easier for enterprises to obtain financing, reduce management costs, and improve the credibility of enterprises in the financing market.

The coefficient of Separation is positive and significant, and a high degree of separation of two rights indicates a large difference in the distribution of power between the management and shareholders. A higher degree of separation of the two rights may improve the efficiency of financing, because management can make business operations and decisions more autonomically, reducing management friction caused by shareholder intervention. This independence may increase decision-making flexibility and reduce uncertainty in the financing and investment process.

The coefficient of MB is positive and significant. Companies with high market to book value ratio are more popular with investors in the capital market due to high market confidence, low financing cost, excellent management and strong innovation ability. These companies are able to more efficiently access the capital they need to support their growth and expansion, thereby improving their overall funding efficiency.

The Age coefficient is positive and significant, and long-term listed companies usually have accumulated more market experience and stable financial status and have a broader investor base. This maturity makes it easier for enterprises to obtain financing, and investors trust their operating capabilities and development prospects more, reducing financing costs and improving efficiency. Long-term listed enterprises have a better reputation and credit in the financing market and can obtain financial support more smoothly.

Column (2) shows the impact of Tax incentives on the efficiency of SMEs. We find that the coefficient before tax is 0.3659, indicating that every 1% increase in tax

incentives, the efficiency of SMEs increases by 0.3659%. A possible explanation for this is that tax incentives play an important role in improving the efficiency of corporate financing. These preferential policies can reduce the tax burden of enterprises and free up more funds for internal investment and development. A tax cut means more money can be used to pay down debt, expand, or innovate. This reduces the demand for corporate financing, reduces the dependence on external financing, and improves the credibility and bargaining power of enterprises in the financing market. Hypothesis 1 is tested.

Column (3) shows the influence of policy variables government subsidies on the efficiency of SMEs. We found that the coefficient before Subsidy was 1.7636, suggesting that for every 1% increase in government subsidy, SMEs' efficiency increased by 1.7636%. Possible explanations for this are that, first, government subsidies can reduce the financing cost of enterprises. By providing low-interest loans, guarantee services or direct capital subsidies, governments can help companies obtain more competitive financing terms. Such subsidies reduce the financing cost of enterprises and encourage enterprises to expand investment and development scale. Second, government subsidies can also reduce the risk of corporate financing. For example, subsidy policies for emerging industries or high-risk projects can reduce the risk pressure of investors and increase their investment confidence in projects. This confidence can lead to more capital flowing into the company to support its growth. Hypothesis 2 is tested.

Table 8. Benchmark regression.

	(1) Efficiency	(2) Efficiency	(3) Efficiency
Tax		0.3659***	
		(16.73)	
Subsidy			1.7636***
			(30.94)
Size	14.9312***	14.4102***	13.2021***
	(82.37)	(78.85)	(71.01)
Tenhold	0.1731***	0.1747***	0.1451***
	(16.40)	(16.65)	(14.00)
Separation	0.2043***	0.1988***	0.1868***
	(10.07)	(9.86)	(9.41)
MB	0.2583***	0.2775***	0.3736***
	(5.23)	(5.65)	(7.71)
Age	0.3462***	0.3538***	0.4163***
	(12.67)	(13.03)	(15.52)
Ind/ Year	Yes	Yes	Yes
Constant	-308.7211***	-301.6813***	-300.6631***
	(-80.29)	(-78.50)	(-79.75)
Obs	21269	21269	21269
Adj-R^2	0.4044	0.4121	0.4301

Note: t statistics in parentheses (* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$)

Intermediate Effect Test

Table 9 shows the mediating effect of financing constraint (FC) as policy variables Tax and Subsidy on efficiency. Financing constraint degree (FC) index, the greater the FC index, the greater the financing constraint of the enterprise.

As can be seen from the regression results in column (1) of Table 9, the coefficient of tax incentives on the efficiency of enterprises is 0.3659 and positively significant, indicating that every 1% increase in tax incentives increases the efficiency by 0.3659, and tax incentives can improve the efficiency of enterprises. From the (2)

column, we can see that the constraint coefficient of tax incentives on financing is -0.0032, which is significant. When tax incentives increase by 1%, corporate financing constraints decrease by 0.0032, indicating that tax incentives can reduce corporate financing constraints. In column (3), the coefficient of Tax is 0.2269, and the absolute value of the coefficient of Tax is smaller than that of column (1) 0.3659, and the FC coefficient is -0.43503, which is significant. According to the criteria of the causal step method, it shows that financing constraint FC plays a part of the intermediary effect between tax incentives and efficiency, that is, tax incentives improve enterprises' efficiency by easing financing constraints. Financing constraint means that it is difficult for enterprises to obtain sufficient financing. Tax incentives reduce tax burdens, improve cash flow, ease financing needs, and reduce financing costs. For enterprises subject to financing constraints, tax incentives directly reduce financing pressure, promote the use of internal funds, and improve efficiency. At the same time, better financial status and reputation may remove financing constraints, improve financing conditions, promote enterprises to obtain financing more effectively, and play an intermediary effect.

As can be seen from the regression results in column (4) of Table 9, the coefficient of government subsidies on the efficiency of enterprises is 1.7636, and is positively significant, indicating that every 1% increase in government subsidies will increase the efficiency by 1.7636, and government subsidies can improve the efficiency of enterprises. From the (5) column, we can see that the financing constraint coefficient of government subsidies is -0.0158, which is significant. This shows that when government subsidies increase by 1%, the financing constraint of enterprises decreases by 0.0158, and government subsidies can reduce the financing constraint of enterprises. The

coefficient of Subsidy in column (6) is 1.1160, and the absolute value of Subsidy coefficient is smaller than that in column (4) 1.7636, and the FC coefficient is -41.0408, which is significant. According to the criteria of the causal step method, it indicates that financing constraint FC plays a part of the intermediary effect between government subsidies and efficiency. That is, government subsidies improve the efficiency of enterprises by easing the financing constraints of enterprises. Government subsidies improve the capital flow of enterprises, reduce financial pressure and ease financing needs. For enterprises subject to financing constraints, subsidies directly increase disposable funds, reduce financing costs, and improve efficiency. At the same time, subsidies may improve corporate credibility, expand financing channels, reduce financing barriers, improve financing conditions, and play an intermediary effect.

Table 9. Mechanism of intermediary effect of financing constraints.

	(1) Efficiency	(2) FC	(3) Efficiency	(4) Efficiency	(5) FC	(6) Efficiency
Tax	0.3659***	-0.0032***	0.2269***			
	(16.73)	(-17.40)	(11.06)			
Subsidy				1.7636***	-0.0158***	1.1160***
				(30.94)	(-33.04)	(20.33)
FC			-43.5032***			-41.0408***
			(-57.17)			(-53.34)
Size	14.4102***	-0.1849***	6.3659***	13.2021***	-0.1740***	6.0612***
	(78.85)	(-120.48)	(28.83)	(71.01)	(-111.72)	(27.55)
Tenhold	0.1747***	-0.0016***	0.1031***	0.1451***	-0.0014***	0.0884***
	(16.65)	(-18.68)	(10.47)	(14.00)	(-15.91)	(9.03)
Separation	0.1988***	-0.0013***	0.1427***	0.1868***	-0.0012***	0.1384***
	(9.86)	(-7.61)	(7.60)	(9.41)	(-7.10)	(7.41)
MB	0.2775***	-0.0200***	-0.5938***	0.3736***	-0.0209***	-0.4838***
	(5.65)	(-48.58)	(-12.32)	(7.71)	(-51.45)	(-10.02)
Age	0.3538***	-0.0055***	0.1161***	0.4163***	-0.0060***	0.1691***
	(13.03)	(-23.96)	(4.53)	(15.52)	(-26.80)	(6.60)
Ind/ Year	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-301.6813***	4.4256***	-109.1536***	-300.6631***	4.4150***	-119.4684***
	(-78.50)	(137.13)	(-22.22)	(-79.75)	(139.79)	(-24.35)
Obs	21269	21269	21269	21269	21269	21269
Adj-R2	0.4121	0.6037	0.4905	0.4301	0.6177	0.4974

Note: t statistics in parentheses (* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$)

Table 10 shows the mediating effect of corporate innovation (LnPatent) as policy variables Tax and Subsidy on efficiency.

As can be seen from column (1) of the table, the coefficient of tax incentives on the efficiency of enterprises is 0.3659 and positive, indicating that every 1% increase in tax incentives will increase the efficiency by 0.3659, and tax incentives can improve the efficiency of enterprises. As can be seen from the (2) column, the coefficient of tax incentives on enterprise innovation is 0.0128, which is significant. For every 1% increase in tax incentives, the innovation output of enterprises increases by 0.0128%, it indicated that tax incentives are conducive to enterprise innovation. The larger the value of LnPatent, the more patent applications the enterprise has, the stronger the innovation ability of the enterprise. The coefficient of Tax in column (3) is 0.3590, and the absolute value of the coefficient of Tax is smaller than that of column (4) 0.3659, and the LnPatent coefficient is 0.5410, which is significant. According to the criteria of the causal step method, it indicated that business innovation (LnPatent) plays a partial intermediary effect between tax incentives and efficiency, that is, tax incentives contribute to enterprise innovation. And then improve the efficiency of enterprise financing. Tax incentives reduce the burden on enterprises and free up funds for innovation investment. Innovation enhances enterprise value, enhances attractiveness, reduces financing costs, and improves efficiency. Preferential policies stimulate innovation vitality, increase capital flow to innovation fields, indirectly improve financing conditions, promote enterprises to obtain financing more effectively and play an intermediary effect.

As can be seen from the regression results in column (5) of Table 10, the coefficient of government subsidies on the efficiency of enterprises is 1.7636, and it is positive and significant. Government subsidies can improve the efficiency of enterprises. From column (5), we can see that the coefficient of government subsidies on enterprise innovation is 0.0352 and significant, indicating that every 1% increase in government subsidies, enterprise innovation output increases by 0.0352, indicating that government subsidies are conducive to enterprise innovation. The coefficient of Subsidy in column (6) is 1.7480, and the absolute value of the coefficient is smaller than that in column (4) 1.7636, and the LnPatent coefficient is 1.7480 and significant. According to the criterion of causal step method, the results show that LnPatent plays a partial intermediary effect between government subsidies and efficiency, and government subsidies can promote enterprise innovation and improve enterprise efficiency. Subsidies encourage innovation investment and enhance enterprise value and market competitiveness. Innovation attracts investors, reduces financing uncertainty, and improves efficiency. Subsidies stimulate innovation, increase investment flow to innovative projects, improve corporate credibility, improve financing conditions, and play an intermediary effect.

Table 10. The intermediary effect mechanism of enterprise innovation.

	(1) Efficiency	(2) LnPatent	(3) Efficiency	(4) Efficiency	(5) LnPatent	(6) Efficiency
Tax	0.3659***	0.0128***	0.3590***			
	(16.73)	(9.03)	(16.39)			
Subsidy				1.7636***	0.0352***	1.7480***
				(30.94)	(9.36)	(30.62)
LnPatent			0.5410***			0.4438***
			(5.12)			(4.26)
Size	14.4102***	0.1231***	14.3436***	13.2021***	0.1069***	13.1547***
	(78.85)	(10.38)	(78.33)	(71.01)	(8.72)	(70.66)
Tenhold	0.1747***	-0.0014**	0.1755***	0.1451***	-0.0020***	0.1461***
	(16.65)	(-2.09)	(16.74)	(14.00)	(-2.98)	(14.09)
Separation	0.1988***	0.0032**	0.1970***	0.1868***	0.0031**	0.1854***
	(9.86)	(2.48)	(9.78)	(9.41)	(2.36)	(9.34)
MB	0.2775***	-0.0093***	0.2826***	0.3736***	-0.0077**	0.3770***
	(5.65)	(-2.92)	(5.76)	(7.71)	(-2.41)	(7.78)
Age	0.3538***	-0.0048***	0.3564***	0.4163***	-0.0037**	0.4180***
	(13.03)	(-2.73)	(13.13)	(15.52)	(-2.08)	(15.58)
Ind/ Year	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-301.6813***	-2.2011***	-300.4906***	-300.6631***	-2.2870***	-299.6482***
	(-78.50)	(-8.82)	(-78.09)	(-79.75)	(-9.20)	(-79.35)
Obs	21269	21269	21269	21269	21269	21269
Adj-R2	0.4121	0.0635	0.4128	0.4301	0.0638	0.4305

Note: t statistics in parentheses (* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$)

Robustness test

In order to reduce endogeneity, tax incentives and government subsidies are treated with one-phase lag. This dissertation chooses to deal with tax incentives and government subsidies one period later, in order to avoid the direct impact of current policies on current efficiency, and to observe the cumulative effect of policies in time more clearly. Data with a lag of one period better reflect the actual impact of policies on corporate behavior. The regression results of one-phase lag are reported in the first two columns of Table 11, suggesting that the coefficients of LagTax and LagSubsidy are positive and significant, suggesting that tax incentives and government subsidies

positively impact enterprises' efficiency. The results are consistent with Hypothesis 1 and Hypothesis 2. Although the coefficients of the delayed regression are similar to those in the baseline regression, this does not necessarily mean that there is reverse causality. We assume that the decision of government subsidies and tax incentives is based on the performance of enterprises in the previous year, while the efficiency of enterprises is more affected by the market environment and their own business conditions. By introducing lag variables, the direct interference of current policy on current efficiency is reduced as much as possible.

Table 11. Robustness test.

	(1) Efficiency	(2) Efficiency
LagTax	0.3410***	
	(14.68)	
LagSubsidy		1.5757***
		(25.89)
Size	14.6890***	13.5878***
	(73.69)	(66.73)
Tenhold	0.1887***	0.1665***
	(16.69)	(14.88)
Separation	0.1979***	0.1844***
	(9.02)	(8.50)
MB	0.2979***	0.3606***
	(5.51)	(6.75)
Age	0.3650***	0.4248***
	(12.58)	(14.77)
Ind/ Year	Yes	Yes
Constant	-306.6201***	-305.4523***
	(-73.14)	(-73.97)
Obs	18055	18055
Adj-R^2	0.4027	0.4172

Note: t statistics in parentheses (* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$)

Heterogeneity Analysis

On the basis of the analysis of the nature of equity ownership, enterprises are divided into state-owned enterprises and non-state-owned enterprises for sub-sample regression. This dissertation finds that the effect of tax incentives on efficiency is more obvious in state-owned enterprises, while the effect of government subsidies on efficiency is more obvious in non-state-owned enterprises. However, the Wald test value of the sub-sample regression in columns (1) and (2) is 0.2736, and the critical value of less than 5% is 1.9600. The null hypothesis is not rejected, and the difference between the coefficients of the two groups is not obvious, so the test fails. The Wald test value of the sub-sample regression in columns (3) and (4) is 1.3346, and the critical value of less than 5% is 1.9600. The null hypothesis is not rejected, and the difference between the two groups of coefficients is not obvious, so the test fails. The effect of tax incentives and fiscal subsidies on the efficiency of state-owned enterprises and non-state-owned enterprises is not obvious, which may be the result of a combination of factors such as policy design and implementation problems, the insufficient ability of enterprises to manage and use policies, the fierce market competition environment, the influence of the economic environment, and the difference between state-owned enterprises and non-state-owned enterprises in resource acquisition and policy utilization.

Table 12. State-owned vs. Non-state-owned Enterprises.

	(1) State-owned Efficiency	(2) Non-state-owned Efficiency	(3) State-owned Efficiency	(4) Non-state-owned Efficiency
Tax	0.3466***	0.3326***		
	(7.71)	(13.52)		
Subsidy			1.0051***	2.0867***
			(10.25)	(29.47)
Size	18.0651***	13.1071***	17.7963***	11.4015***
	(46.72)	(62.86)	(46.09)	(53.18)
Tenhold	0.1495***	0.1457***	0.1398***	0.1053***
	(7.08)	(11.96)	(6.65)	(8.77)
Separation	0.2086***	0.2509***	0.1928***	0.2403***
	(5.30)	(10.78)	(4.92)	(10.55)
MB	0.6111***	0.1833***	0.6278***	0.3289***
	(5.86)	(3.34)	(6.05)	(6.08)
Age	0.2939***	0.0907**	0.3449***	0.2089***
	(5.68)	(2.49)	(6.68)	(5.81)
Ind/ Year	Yes	Yes	Yes	Yes
Constant	-373.1086***	-272.4403***	-379.4675***	-266.6608***
	(-48.17)	(-61.38)	(-49.81)	(-61.39)
Obs	5531	15738	5531	15738
Adj-R^2	0.4346	0.3747	0.4392	0.4006

Note: t statistics in parentheses: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Based on the analysis of industry competition degree, the industry competition degree is divided into high industry competition degree and low industry competition degree for sub-sample regression. The level of industry competition is based on the median of the Herfindahl-Hirschman Index (HHI) of the industry in which the enterprise is located. Higher than the median is defined as high competition, and lower than the median is defined as low competition. This dissertation finds that the impact of tax incentives on efficiency is greater in industries with lower competition.

The Wald test value of sample regression in columns (1) and (2) is 6.0870, and the critical value greater than 5% is 1.9600. The null hypothesis is rejected, and the difference between the two groups of coefficients is obvious, and the test passes. This shows that the tax policy has more obvious improvement in efficiency for enterprises

with low industry competition than enterprises with high industry competition. There are several possible reasons for this result. The first is the relative impact of tax incentives. For enterprises with low industry competition, tax incentives may account for a larger part of their tax burden, thus bringing more significant financial benefits. In contrast, companies with a high degree of industry competition may have a relatively small impact on their overall financial position due to their large scale or strong profitability. Second, the ability to reinvest capital. The funds freed up by tax incentives may be easier to reinvest for companies in industries that are less competitive, as they may be looking to expand or become more competitive. Enterprises with a high degree of industry competition may have sufficient internal funds or external financing channels, and the need for additional funds brought by tax relief is not so urgent. Third, the difference in cost sensitivity. In industries with low competition, companies may be more cost sensitive, so the cost reduction from tax incentives is more important to them. In industries with competitive incentives, enterprises may pay more attention to market share and product innovation, and the effect of tax incentives on efficiency may not be as obvious as other competitive strategies.

The Wald test value of the sub-sample regression in columns (3) and (4) is 1.2550, and the critical value of less than 5% is 1.9600. The null hypothesis is not rejected, and the difference between the two groups of coefficients is not obvious, so the test fails. The impact of government subsidies on efficiency does not differ between firms with higher and lower levels of industry competition. This may be because the characteristics of different industries and the differences in the ability of enterprises themselves will also affect the effect of subsidy policies, not mainly reflected in the level

of industry competitiveness. In some technology-intensive or innovation-driven enterprises, enterprises may be more effective in using subsidies for technological innovation. In other industries, subsidies may be used more to maintain the status quo or for short-term gain.

Table 13. High vs. Low Competition Enterprises.

	High competition	Low competition	High competition	Low competition
	(1)	(2)	(3)	(4)
	Efficiency	Efficiency	Efficiency	Efficiency
Tax	0.2651***	0.5288***		
	(8.41)	(17.80)		
Subsidy			1.8302***	1.6871***
			(23.25)	(20.46)
Size	15.3232***	12.9909***	13.7761***	12.2439***
	(57.65)	(53.49)	(51.08)	(49.14)
Tenhold	0.1973***	0.1393***	0.1591***	0.1201***
	(12.69)	(10.23)	(10.38)	(8.85)
Separation	0.2419***	0.1096***	0.2188***	0.1134***
	(8.34)	(4.05)	(7.70)	(4.21)
MB	0.2759***	0.3346***	0.4110***	0.3585***
	(3.99)	(4.93)	(6.05)	(5.31)
Age	0.2353***	0.4539***	0.3139***	0.4981***
	(6.06)	(12.27)	(8.21)	(13.49)
Ind/ Year	YES	YES	YES	YES
Constant	-320.8246***	-273.6719***	-314.4330***	-276.5725***
	(-58.66)	(-55.83)	(-58.80)	(-56.88)
Obs	11260	10009	11260	10009
Adj-R^2	0.3888	0.4480	0.4132	0.4534

Note: t statistics in parentheses: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Based on the analysis of enterprise size, enterprises are divided into large and small enterprises according to enterprise size for regression. Enterprises are divided according to the size of assets, larger than the median size of enterprises is defined as large-scale, smaller than the median size of enterprises is defined as small-scale.

The Wald test value of the sub-sample regression in columns (1) and (2) is 0.4273, and the critical value of less than 5% is 1.9600. The null hypothesis is not rejected, and the difference between the two groups of coefficients is not obvious, so the

test fails. This may have something to do with the sample size we chose. China's tax incentives for enterprises do have requirements for the size of enterprises, which are mainly reflected in the definition of small and meager profit enterprises and preferential policies. Small and medium-sized enterprises refer to enterprises engaged in non-restricted and prohibited industries by the state, and at the same time meet the following three conditions: taxable income does not exceed 3 million yuan, employees do not exceed 300 people, and total assets do not exceed 50 million yuan. The State Council has also introduced a series of preferential tax policies to support the development of enterprises. In general, the core of many tax policies in China is to support the development of small, low-profit enterprises or other qualified enterprises. The enterprises selected in this dissertation are mainly listed companies, and although there is a big gap in the scale of enterprises, they all belong to the scope of large-scale enterprises in terms of tax incentives.

The Wald test value of the sub-sample regression in columns (3) and (4) is 0.6885, and the critical value of less than 5% is 1.9600. The null hypothesis is not rejected, and the difference between the coefficients of the two groups is not obvious, so the test fails. Government subsidies have no significant effect on the efficiency of companies with different asset sizes, which may be related to the relatively limited number of subsidies and the external competitive environment. For companies with large assets, the amount of government subsidies may account for a relatively small part of their overall capital structure, and it is difficult to have a significant impact on their efficiency. For small-scale companies, although the subsidy amount is relatively large, it is still not enough to significantly change their financing environment or conditions. In

addition, large companies usually have a high reputation and stable market position in the market, and can easily obtain financing, and government subsidies have limited effect on the improvement of their efficiency. Small companies face higher market risks and uncertainties, and even with government subsidies, it may be difficult to significantly improve their financing environment.

Table 14. Large vs. Small Scale Enterprises.

	(1) Large Efficiency	(2) Small Efficiency	(3) Large Efficiency	(4) Small Efficiency
Tax	0.3636***	0.3820***		
	(12.93)	(11.69)		
Subsidy			1.7822***	1.7043***
			(22.54)	(21.06)
Size	10.5560***	20.6923***	9.4329***	19.6843***
	(25.47)	(58.32)	(22.87)	(55.52)
Tenhold	0.0132	0.1947***	0.0001	0.1622***
	(0.82)	(13.72)	(0.01)	(11.54)
Separation	0.1746***	0.2371***	0.1706***	0.2218***
	(6.33)	(8.36)	(6.28)	(7.93)
MB	0.0540	0.3997***	0.1935***	0.4142***
	(0.85)	(5.29)	(3.08)	(5.55)
Age	0.2561***	0.4479***	0.3516***	0.4836***
	(6.01)	(12.45)	(8.32)	(13.61)
Ind/ Year	YES	YES	YES	YES
Constant	-215.1477***	-437.1367***	-218.0236***	-437.6055***
	(-26.19)	(-57.60)	(-27.02)	(-58.65)
Obs	10634	10635	10634	10635
Adj-R2	0.2248	0.3840	0.2486	0.4011

Note: t statistics in parentheses: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

CHAPTER 5

CONCLUSION AND SUGGESTION

Empirical Conclusions

Based on the above analysis, this dissertation selects the listed companies in China's Small and Medium-Sized Enterprise (SME) board and Growth Enterprise Market (GEM) from 2009 to 2022 as research samples to investigate the influencing factors, internal mechanisms and heterogeneity of macro-policies and enterprises themselves on the efficiency of small and medium-sized enterprises. The following conclusions are drawn:

First, from the perspective of macro policies, both tax incentives and financial subsidies can promote improving corporate efficiency. From the perspective of the enterprise itself, the scale of the enterprise, the concentration of ownership, the separation rate of two rights, market-to-book ratio and the established time of the enterprise can promote the efficiency of the enterprise. In contrast, the market-to-book ratio can inhibit the efficiency of the enterprise. To sum up, the efficiency of enterprise financing is affected by many aspects of macro policies and enterprises themselves.

Second, in the case of financing constraints, tax incentives and government subsidies have a negative significant effect on financing constraints, which is part of the intermediary effect. For enterprises subject to financing constraints, tax incentives and government subsidies directly reduce financing pressure, promote the use of internal funds, and improve efficiency. At the same time, better financial status and reputation may remove financing constraints, improve financing conditions, promote enterprises to

obtain financing more effectively, and play an intermediary effect. In the case of enterprise innovation, tax incentives and government subsidies positively affect financing constraints, which is part of the intermediary effect. Tax incentives and government subsidies can encourage investment in innovation, increasing firm value and market competitiveness. Innovation attracts investors, reduces financing uncertainty, and improves efficiency. Subsidies stimulate innovation, increase investment flow to innovative projects, improve corporate credibility, improve financing conditions, promote efficiency, and play an intermediary effect.

Third, based on the analysis of industry competition degree, the effect of tax incentives on efficiency is more obvious in industries with low industry competition degree. Tax incentives can promote corporate efficiency more in industries with low competition, which may be related to the relative impact of tax incentives, cost sensitivity and other factors. In addition, through the analysis of equity nature and enterprise size, tax incentives and financial subsidies do not significantly improve efficiency, which may be related to the market competition environment and sample selection scope.

Suggestion

1. Improve the company's internal governance.

Through the above analysis, the development of the enterprise itself, the degree of financial soundness, the degree of ownership concentration, and the scale of the enterprise are all key factors affecting the efficiency of the enterprise. For the enterprise itself, improving the internal management mechanism and enhancing the comprehensive competitiveness of the enterprise can effectively improve the efficiency of the enterprise

in the state of domestic internal volume. Enterprises should give full play to market advantages, and small and medium-sized private enterprises will have huge development potential due to their stronger mobility and liquidity.

2. Improve the external market operating environment and improve financial services for small and medium-sized enterprises.

On the one hand, improve the equity investment ecology of the primary market, combine the government investment and financial investment institutions, increase the investment of small and medium-sized enterprises, and help small and medium-sized enterprises to solve the problem of insufficient research and development funds in the early stage and insufficient market promotion costs in the later stage. Especially in the current situation of slowing economic development, the government should increase the policy preference, tax incentives and financial subsidies for small and medium-sized enterprises. Help small and medium-sized enterprises to overcome financial difficulties. On the other hand, banks should establish a set of special evaluation index system for small and medium-sized enterprises, improve the credit evaluation mode of small and medium-sized enterprises and improve the bank credit information system, so as to solve the loan problems of small and medium-sized enterprises efficiently and quickly. Banks should vigorously promote inclusive finance, use digital technology to build a digital financial platform, concentrate high-quality resources of enterprises, standardize services with standardized models, reduce financing costs, achieve scale effects, and complete the sharing of resources.

3. Improve relevant laws and regulations.

To promote the growth of small and medium-sized enterprises to establish a special fund, and clear requirements. And relevant small and medium-sized enterprises to provide free subsidies, discount loans, government procurement services, incentives, and other forms of government purchase. Moreover, regulations on the use of matching funds and penalties for violations are formulated to prevent unauthorized interception, crowding or misappropriation.

BIBLIOGRAPHY

Belghitar, Y., Clark, E., Dropsy, V., & Mefteh-Wali, S. (2021). The effect of exchange rate fluctuations on the performance of small and médium-sized enterprises: Implications for Brexit. The Quarterly Review of Economics and Finance, 80, 399-410.

Bester, H. (1987). The role of collateral in credit markets with imperfect information. European Economic Review, 31(4), 887-899.

Chen, G. & Wang, D. (2020). Does social Status Affect Corporate financing constraints? -- Empirical evidence from A-share private listed companies. Economic management (02) 160-174.

Chen, J. & Zheng, H.Q. (2020). Financing constraints, customer bargaining power and Corporate Social Responsibility. Journal of Accounting Research, 8, 50-63.

Chu, Z. & Sun, Y.J. (2021). The impact of tax incentives on financing constraints of SMEs: Based on the analysis of Growth Enterprise Market (GEM) listed companies. Accounting Research (12),31-35.

Fee, C. E., Hadlock, C. J., & Pierce, J. R. (2009). Investment, financing constraints, and internal capital markets: Evidence from the advertising expenditures of multinational firms. The Review of Financial Studies, 22(6), 2361-2392.

Feng, Q., Zhai, X.J., and Li, T. (2023). A study on the impact of preferential fiscal and tax policies on the efficiency of small and medium-sized enterprises: from the perspective of enterprise life cycle theory. Finance and Economics (07),37-47.

Gong, N.Q. (2020). Analysis of influencing factors on efficiency of listed SMEs in Anhui Province -- based on Small and Medium-sized Enterprise (SME) and Growth Enterprise Market (GEM) markets. Journal of Guiyang University (Natural Science Edition)(03),28-30.

Gu, L.L., Guo, J.L. & Wang, H.Y. (2020). Corporate Social Responsibility, financing constraints and corporate financialization. Journal of Financial Research, 476(2), 109-127.

Hewlett, R. (2011). Treasury value creation: Integrating strategic planning, capital budgeting, enterprise risk management, and liquidity. Journal of Corporate Treasury Management, 4(2), 106.

Huang, Y.Y., Yu, K.J. & Lou S.Z. (2015). Research on influencing factors of Small Medium-Enterprise (SME) efficiency from the perspective of integration. Science and Technology Progress and Countermeasures (15),103-109.

Kuang, X.W., Shi Z.Y., & He, E.L. (2010). Design and evaluation of Financing constraint Index of Chinese listed companies. Journal of Shanxi University of Finance and Economics, (5), 110-117.

Ma, H. & Wang, Y.Y. (2017). Macroeconomic policies, financing constraints and corporate financing structure adjustment: Based on empirical data of listed companies in China. Financial review (01), 58-66.

Meuleman, M., & De Maeseneire, W. (2012). Do R&D subsidies affect SMEs' access to external financing? Research Policy, 41(3), 580-591.

Ministry of Industry and Information Technology, National Bureau of Statistics, National Development and Reform Commission, Ministry of Finance. (2011). Small and medium-sized enterprise classification standards. The People's Republic of China Ministry of Industry and Information Technology website. https://www.miit.gov.cn/jgsj/qyj/wjfb/art/2011/art_235af1ade45c4865957adeed23f9d949.html

National Bureau of Statistics of the People's Republic of China. (2009). The second national economic census main data bulletin. https://www.stats.gov.cn/sj/tjgb/jjpcgb/qgjpgb/202302/t20230206_1901969.html

Qi, J.B. (2020). International comparison and analysis of influencing factors on financing availability of SMEs. Shanghai Financial (06), 2-10.

Romano, P. L. (1987). Techniques in inventory management and control. Management Accounting, 68, 46-7.

Stiglitz, J. E., & Weiss, A. (1981). Credit rationing in markets with imperfect information. The American Economic Review, 71(3), 393-410.

Wang, X.T. (2022). Study on the easing effect of Supply Chain Finance on financing constraints of small and medium-sized enterprises: Based on the analysis of financial data of listed companies in China's small and medium-sized board. China Sankei (20),47-49.

Wu, H.J., Liu, Q.R. & Wu, S.N. (2017). Corporate environmental information disclosure and financing constraints. The World Economy (5), 124-147. doi: 10.19985 / j.carol carroll nki cassjwe. 2017.05.007.

Wu, Q.S. & Huang, X.H. (2017). Functional allocation of financial companies and alleviation of financing constraints of Group members listed companies. China's Industrial Economy (09), 156-173.

Xie, J. & Huang, Z.Z. (2014). The impact of macro-monetary policy and regional financial development degree on corporate investment and financing constraints. Journal of Financial Research (11), 64-78.

Yu, H.S. & Yang, Z.Q. (2016). The impact of tax incentives on the investment and financing ability of SMEs. Fiscal Research (12), 101-110.

Yu, W., Wang, M.J. & Jin, X.G. (2012). Political relevance and financing constraints: Information effect and resource effect. Journal of Economic Research (09),125-139.

Zeng, Y. (2023). Resource mismatch, debt governance and corporate financing constraints. Journal of Inner Mongolia University of Finance and Economics (5), 77-81.

Zhang, Y.M., Zhang, F, & Li, Y.X. (2017). Accounting conservatism, financing constraints and investment efficiency. Accounting Research, (9), 35-40.

Zhao, L.L. & Ma Z.F. (2020). Evaluation and influencing factors of operational efficiency of Chinese internet enterprises. Journal of statistical (06), 1-12.

Zhao, J, & Feng, Z. X. (2007). Empirical analysis of credit financing constraints for SMEs. Productivity Research (5), 3.

Zhou, H.M. & Xia, M. (2015). Study on the relationship between accounting conservatism and corporate efficiency. Journal of Central South University (Social Science Edition) (05),162-168.

Zhu, L. (2023). Structural monetary policy easing SMEs' financing constraints (a master's degree thesis, East China Normal University).