Research on the Impact of Fiscal and Tax Policies on Total Factor Productivity of Enterprises

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Abstract

Specialized, refined, distinctive, and innovative small and medium-sized enterprises with specialized, refined, distinctive, and innovative characteristics are important supports for the future industrial chain. As the leaders of specialized, refined, distinctive, and innovative small and medium-sized enterprises, "Little Giant" enterprises are the bellwethers of the small and medium-sized enterprise group and also the target of some small and medium-sized enterprises for future transformation and development. However, in the current uncertain environment of domestic and international development, their development still faces difficulties in starting, sustaining, and strengthening. To promote the high-quality development of specialized, refined, distinctive, and innovative small and medium-sized enterprises, it is necessary to focus on the improvement of total factor productivity. As an important policy tool for national governance, the implementation and adjustment of fiscal and tax policies have a profound impact on the survival and development of enterprises. This article uses the sample data of the first four batches of selected national-level specialized, refined, distinctive, and innovative "Little Giant" A-share listed companies from 2019 to 2021 announced by the Ministry of Industry and Information Technology to empirically analyze the impact of fiscal subsidies and tax incentives on total factor productivity of enterprises, aiming to provide reasonable suggestions for the government to design fiscal and tax policies to promote the development of specialized, refined, distinctive, and innovative small and medium-sized enterprises.

Keywords

Financial subsidies; Tax incentives; Total factor productivity.

1. Introduction

In the current uncertain environment of domestic and international development, small and medium-sized enterprises are the driving force for stabilizing the industrial chain and improving economic quality. Promoting the specialized, refined, unique, and innovative development of small and medium-sized enterprises is an important proposition for achieving high-quality economic development. At present, specialized, refined, and innovative small and medium-sized enterprises have increasingly become an indispensable component and force in China's national innovation system. Specialized, refined, and innovative small and medium-sized enterprises have been entrusted with the mission of filling gaps and filling gaps in China's manufacturing industry and supply chain, providing a strong driving force for the transformation and upgrading of China's manufacturing industry. In recent years, the country has issued a series of policy documents in order to provide better direction guidance and resource support for the development of specialized, refined, and innovative small and

medium-sized enterprises. In 2011, the Ministry of Industry and Information Technology first identified "specialization, refinement, uniqueness, and innovation" as an important direction for promoting the growth and cultivation of small and medium-sized enterprises in the "Twelfth Five Year Plan" for the growth of small and medium-sized enterprises. In 2016, the country officially launched the policy of specialized, refined, unique, and new certification, aiming to promote the development of high-tech enterprises, improve their independent innovation capabilities and core competitiveness, and enable them to enjoy financial subsidies, tax incentives, and other benefits. In 2018, the Ministry of Industry and Information Technology proposed for the first time the cultivation of specialized, refined, and innovative "little giant" enterprises, which has significant practical significance for accelerating the resolution of "bottleneck" problems, exploring international markets, and promoting high-quality economic development. At the 24th meeting of the Central Commission for Deepening Reform in 2022, it was explicitly proposed to "support and guide specialized, refined, and innovative enterprises that master key core technologies to deepen reform, strengthen innovation, and increase cultivation efforts.". Not only that, the 20th National Congress of the Communist Party of China also clearly pointed out the implementation of industrial foundation reconstruction projects and major technological equipment research projects, supporting the development of specialized, refined, special, and new enterprises. It can be seen that the country has always regarded achieving specialized, refined, unique, and innovative development as an important measure to promote the development of small and medium-sized enterprises. However, despite this, the development of specialized, refined, and innovative small and medium-sized enterprises still faces difficulties in starting, sustaining, and strengthening. Difficulties in financing and bottleneck issues constrain the innovation of specialized, refined, and innovative small and medium-sized enterprises, thereby inhibiting the improvement of their total factor productivity.

Improving total factor productivity is the driving force for high-quality development. Developing specialized, refined, and innovative small and medium-sized enterprises in Dali is of great significance in promoting industrial transformation and upgrading, and achieving highquality economic development. The 19th National Congress of the Communist Party of China first proposed that we must adhere to the principle of quality first and efficiency first, take supply side structural reform as the main line, promote changes in the quality, efficiency, and driving force of economic development, and improve total factor productivity. The 20th National Congress of the Communist Party of China further proposed to focus on improving total factor productivity and regard it as one of the tasks within the major theme of promoting high-quality development. As an important policy tool for national governance, the implementation and adjustment of fiscal and tax policies have a profound impact on the survival and development of enterprises. Through fiscal subsidies and tax incentives, they can provide a large amount of financial support for specialized, refined, and new small and mediumsized enterprises, reduce various uncertainties and risks they face in the innovation process. However, whether these measures can effectively improve their total factor productivity level still needs further exploration. Therefore, this article empirically analyzes the impact of fiscal subsidies and tax incentives on the total factor productivity of enterprises based on the sample data of the first four batches of A-share listed companies selected as national level specialized, refined, special, and new "Little Giants" published by the Ministry of Industry and Information Technology from 2019 to 2021. It has strong theoretical significance and practical value for establishing a sound long-term mechanism to promote the improvement of enterprise total factor productivity and solving the difficulties faced by the development of specialized, refined, special, and new small and medium-sized enterprises.

2. Literature Review

The relationship between fiscal and tax policies and total factor productivity, as well as specialized, refined, unique, and new small and medium-sized enterprises, has always been a hot topic in academic research. Currently, research by domestic and foreign scholars mainly focuses on the following three aspects:

(1) Research on the measurement and influencing factors of total factor productivity. The research on total factor productivity in foreign countries predates that in China, mainly due to economists exploring the sources of economic growth. Currently, Levinsohn and Petrin's (2003) [4] study (LP method) and Olley and Pakes's (1996) [5] study (OP method) hold a pioneering position in the study of total factor productivity. Some scholars in China also use the Malmquist index method of the DEA model to measure total factor productivity. For example, Feng Zhijun (2013) [6] used this method to measure the R&D innovation total factor productivity of large and medium-sized industrial enterprises in China and decomposed it into technical efficiency and technological progress.

(2) A study on the effects and impact pathways of fiscal and tax policies on total factor productivity of enterprises. Most scholars choose to study the impact of fiscal subsidies or tax incentives on total factor productivity of enterprises separately, while a small number of scholars choose to analyze the impact of both on total factor productivity simultaneously. Based on the research results, some scholars believe that fiscal and tax policies have an incentive effect on the improvement of total factor productivity, while the opposite view suggests that they will inhibit the improvement of total factor productivity. As Bai Jie (2020) [7] examined the heterogeneous impact and mechanism of government subsidies on the total factor productivity of high-tech enterprises, it was found that government subsidies can promote the improvement of enterprise total factor productivity; Liu Fang et al. (2020) [8] showed that financial support and tax incentives have a significant promoting effect on the total factor productivity of high-tech industries, while fiscal subsidies have a restraining effect on total factor productivity; Han Fengqin et al. (2021) [9] empirically analyzed the support effect of tax incentives on technological innovation in enterprises based on the DMC model and PSM model. The study found that tax incentives may exacerbate rent-seeking behavior in enterprises and be detrimental to the improvement of TFP.

(3) Research on the development of specialized, refined, and innovative enterprises. Scholars are more concerned about the impact of being selected as specialized, refined, and innovative enterprises on small and medium-sized enterprises, as well as how to promote their innovation. Wang Heqian et al. (2022) [10] believe that the selected "Little Giant" enterprises can increase their research and development investment by increasing their non operating income, alleviating financing constraints, and other channels; Zhang Wei (2024) [11] found through research that government subsidies and institutional environment can promote innovation in specialized, refined, and innovative "little giant" enterprises.Government subsidies have a greater incentive effect on innovation in technology intensive, growth oriented, and eastern enterprises.

Based on the existing research results, there are currently inconsistent conclusions among scholars on the impact of fiscal and tax policies on total factor productivity of enterprises, and there are few articles that study fiscal subsidies, tax incentives, total factor productivity, and specialized, refined, and innovative enterprises together. Therefore, based on the existing literature research results, this article intends to analyze and verify the impact of financial and tax policies on the total factor productivity of enterprises from the perspective of assisting the development of "specialized, refined, unique, and new" enterprises, aiming to provide rational suggestions for the government to properly design financial and tax policies to promote the development of specialized, refined, unique, and new small and medium-sized enterprises.

3. Research Design

3.1. Sample selection and data sources

After the "trade war" and "bottleneck" incident between China and the United States in 2018,the Ministry of Industry and Information Technology proposed for the first time to cultivate specialized, refined, and innovative "little giant" enterprises.Therefore, in recent years, specialized, refined, and innovative "little giant" enterprises have also become akey target of government cultivation.Therefore, this article willconduct empirical analysis on specialized, refined, and innovative "little giant" enterprises of specialized, refined, and innovative "little giant" enterprises asrepresentatives of specialized, refined, and innovative "little giant" enterprises asrepresentatives of policy effects and the availability of data, the sample period was selected from 2019 to 2022.The data in this article are all sourced from Guotai An Database, Ruisi Financial Database, and annual reports of various enterprises. After excluding data from abnormal listed companies (ST, ST*, and PT), extreme values, missing values, and a sample of companies listed only for one year, a total of 36 national level specialized and innovative "little giant" companies were finally obtained from 2019 to 2022. The data processing and statistical analysis in this article were conducted using Stata17.0 software.

3.2. Variable Selection

3.2.1. The dependent variable

Total Factor Productivity (TFP_LP). As LP and OP methods can better avoid endogeneity issues, this article draws on the LP method proposed by Levinsohn, Petrin, Lian Yujun and other scholars to calculate total factor productivity as the dependent variable, and draws on the OP method proposed by Olley, Pakes and other scholars to calculate total factor productivity as a new dependent variable for robustness testing.

3.2.2. Explanatory variables

Financial subsidies (Sub). This article uses the total amount of government subsidies received by enterprises to measure the level of financial subsidies, mainly obtained from the financial statements of listed companies. The specific calculation formula is: other income+government subsidy items in non operating expenses, and the calculation results are logarithmically processed.

Tax incentives. The tax incentives for specialized and innovative enterprises mainly include R&D expense incentives, value-added tax refunds, income tax reductions, etc., covering a wide range of links and with a strong degree of preferential treatment. This article follows the approach of Chu Deyin (2017) and uses "total corporate profits*nominal income tax rate-income tax expenses" to represent the level of tax incentives. The calculation results are logarithmically processed.

3.3. Control variables

Age of the enterprise. The age of a company represents its lifecycle, represented by "year - year of listing+1".

Asset turnover rate (Income).Asset turnover rate is an important indicator for measuring a company's sales ability, asset investment efficiency, and comprehensive operating ability, expressed as "operating income/total assets". Generally speaking, the higher the asset turnover rate, the higher the asset utilization efficiency, investment efficiency, and business performance of the enterprise, which is also conducive to the improvement of total factor productivity.

Asset liability ratio (Lev). The asset liability ratio represents the capital structure of a company, expressed as "total liabilities/total assets", and its value reflects the degree of protection that the company provides to its creditors. A lower debt to asset ratio indicates a more optimistic debt situation, with lower financial risk, but the lower the debt to asset ratio, the better.

Number of employees (Num). Based on the number of registered employees of the enterprise, the more employees there are, the more technical personnel the enterprise has and the greater investment in research and development. Moreover, enterprises with a larger number of employees also indicate a larger scale, and larger enterprises often have superior resource integration capabilities, which can help them save production costs, maximize economies of scale, and thereby improve their total factor production rate.

Variable type	Variable Name	Variable symbols	Computing method
Dependent variable	Total factor productivity	TFP_LP	UsingLPmethod for calculation
	Financial subsidies	Sub	The logarithm of total government subsidies
Explanatory			The logarithm of "total corporate
variables	Tax incentives	Tax	profit*nominal income tax rate-income tax
			expenses"
	Enterprise age	Age	Year - Year of listing+1
Control	Asset turnover rate	Income	Operating income/total assets
variable	Asset liability ratio	Lev	Total liabilities/total assets
	Number of	Num	Number of registered employees of the
	employees		enterprise

Table 1. Definition and Explanation of Variables

3.4. Model settings

By constructing a fixed effects model, further analyze the impact of fiscal and tax policies on the total factor productivity of enterprises. To comprehensively consider the impact of other factors on total factor productivity, four indicators were selected as control variables: enterprise age, asset turnover rate, asset liability ratio, and total number of employees. In order to alleviate the volatility and heteroscedasticity issues in the data, the variables of fiscal subsidies and tax incentives are logarithmically processed.

Toexamine the relationship between fiscal subsidies and total factor productivity, model(1) is constructed as follows:

TFP_LP_{it}= $\beta_0 + \beta_1$ Sub_{it}+ β_2 Age_{it}+ β_3 Income_{it}+ β_4 Lev_{it}+ β_5 Num_{it}+ ε_{it} (1)

To examine the relationship between tax incentives and total factor productivity, model (2) is constructed as follows:

TFP_LP_{it}= $\beta_0 + \beta_1 Tax_{it} + \beta_2 Age_{it} + \beta_3 Income_{it} + \beta_4 Lev_{it} + \beta_5 Num_{it} + \varepsilon_{it}$ (2)

In order to test the differences in the promotion of total factor productivity by fiscal subsidies and tax incentives in enterprises, Suband Tax were simultaneously included in the model, and model (3) was constructed as follows:

TFP_LP_{it}= $\beta_0+\beta_1$ Sub_{it}+ β_2 Tax_{it}+ β_3 Age_{it}+ β_4 Income_{it}+ β_5 Lev_{it}+ β_6 Num_{it}+ ϵ_i (3) In the above model, i represents the sample individual, t represents the data year, β_0 is the intercept term, β_1 , β_2 , β_3 , β_4 , β_5 is the regression coefficient for each variable, ϵ_{lt} is a random error term.

4. Empirical Analysis

4.1. **Descriptive statistical analysis**

Table 2. Descriptive statistics of variables

Variables	N	Mean	SD	Min	Max
TFP_LP	144	8.009	0.836	5.947	11.05
Sub	144	7.211	1.074	3.539	9.620
Tax	144	6.975	6.243	-11.29	11.70

Age	144	2.628	0.233	2.303	3.258
Income	144	0.614	0.576	0.0789	3.521
Lev	144	0.351	0.158	0.0695	0.801
Num	144	1,635	1,490	187	7,754
Number of ID	36	36	36	36	36

According to Table2, the mean of total factor productivity is 8.009, with a standard deviation of 0.836 less than 1, indicating that the difference in total factor productivity levels among the sample enterprises is relatively small; The average of financial subsidies is 7.211, with a standard deviation of 1.074. The maximum value (9.620) is 2.72 times the minimum value (3.539), indicating that there is a certain gap in the government's financial subsidies for various specialized, refined, and innovative "little giant" enterprises; The average value of tax incentives is 6.975, and the difference between the maximum value (11.70) and the minimum value (-11.29) is very prominent, indicating that there are significant differences among enterprises in enjoying tax incentives due to their own conditions and other factors; The standard deviations of enterprise age, asset turnover ratio, and asset liability ratio are 0.233,0.576, and 0.351, respectively, with mean values of 2.628, 0.614, and 0.158. This indicates that there are also certain differences in the enterprise age, asset turnover ratio, and asset liability ratio of the sample enterprises, but the overall differences are relatively small compared to other variables; The difference between the average, standard deviation, maximum, and minimum values of the number of employees is also relatively large, indicating that there are significant internal differences in the various control indicators of the sample, and the level of internal development is not the same.

4.2. Benchmark regression analysis

This article selected a fixed effects model and conducted regression analysis on the model using Stata 17.0. The regression results are shown in Table3.

Variablea	Model (1)	Model (2)	Model (3)
variables	TFP_LP	TFP_LP	TFP_LP
Sub	0.117***		0.109***
	(3.90)		(3.77)
Тах		0.008***	0.007***
		(3.20)	(3.05)
Age	0.342**	0.418**	0.378**
	(2.10)	(2.51)	(2.41)
Income	1.195***	1.148***	1.138***
	(10.59)	(9.81)	(10.34)
Lev	0.350*	0.446**	0.471**
	(1.80)	(2.20)	(2.46)
Num	0.000***	0.000***	0.000***
	(5.09)	(4.58)	(5.10)
Constant	5.107***	5.713***	5.021***
	(11.50)	(13.91)	(11.72)

According to Model (1) in Table3, when only considering fiscal subsidies, the regression coefficient between fiscal subsidies and total factor productivity is 0.117, which is significant the 1% probability level, indicating that increasing fiscal subsidies is beneficial for improving the total factor productivity of specialized, refined, and innovative "little giant"

enterprises.According to Model (2) in Table4, when only considering tax incentives, the impact of tax incentives on total factor productivity is alsosignificantat the 1%probability level, indicating that tax incentives are also beneficial for improving the total factor productivity of specialized, refined, and innovative "little giant" enterprises.However, it is worth noting that although implementing fiscal subsidies and tax incentives separately can improve the total factor productivity of enterprises, the positive incentive effect of fiscal subsidies on specialized, refined, and innovative "little giant" enterprises is more obvious.

According toModel (3) in Table3, the simultaneousimplementation of fiscal and tax policies does not affect the improvement of total factor productivity. The regression coefficients of fiscal subsidies and tax incentives are0.109and0.007, respectively.Both have a positive incentive effect on total factor productivity, but the effect is relatively small compared to other variables. Moreover, fiscal subsidies have a significantly better promoting effect on total factor productivity of enterprises than tax incentives. This result indicates that fiscal subsidies, as an important macroeconomic policy tool, can alleviate the financial pressure on enterprises and encourage specialized, refined, and innovative "little giant" enterprises to engage in technological innovation. However, in the future, the subsidy intensity still needs to be expanded;When the government increases tax incentives, it will accelerate the free flow of funds for specialized and innovative "little giant" enterprises, alleviate their financial pressure, encourage them to increase innovation investment by reducing production costs, and thereby improve their total factor productivity. In summary, financial and tax policies are conducive to improving the survival environment of specialized, refined, and innovative "little giant" enterprises, guiding them to invest more funds in research and development, reduce financing constraints, increase the proportion of research and development personnel, accelerate digital transformation to achieve high-qualitydevelopmentof enterprises, and alleviate their difficulties in financing, development, and sustainability. However, it is worth noting that the impact of tax incentives on total factor productivity is significantly smaller than that of fiscal subsidies. This may be becausespecialized, refined, and innovative "little giant" enterprises receive relatively rich financial support due to policy support, which reduces the pressure on enterprise development. Therefore, their sensitivity to tax incentives is lower than that of fiscal subsidies, limiting the incentive effect of preferential policies.

For the control variables, as shown in Model (3) in Table3, the regression coefficients for asset enterprise age, asset turnover ratio, liability ratio, and number of employeesare0.3783472,1.138383,0.0001804, and0.0047061, respectively, showing a positive correlation and significant at the 1%or5% probability level. This indicates that increasing asset turnover ratio, asset liability ratio, and number of employees is beneficial for improving the total factor productivity of enterprises, and as the age of enterprises increases, total factor productivity also improves. This result indicates that the assetturnover rate has the most significant positive incentive effect on the total factor productivity of enterprises, indicating that the higher the efficiency of fund utilization, the stronger the operating ability, which is conducive to the improvement of the total factor productivity of enterprises;Larger enterprises have economies of scale effects, with more specialized equipment and more detailed labor division, which may be more conducive to integrating resource advantages and improving total factor productivity; According to Table2, the standard deviation of the asset liability ratio of China's specialized, refined, and innovative "little giant" enterprisesis relatively small, and the overall level is relatively low. This indicates that increasing liabilities appropriately is beneficial forenterprises tofully utilize financial leverage, improve their ability to use external funds, accelerate their innovation and development pace, and promote the improvement of total factor productivity; The promotion effect of enterprise age on total factor productivity is relatively small, but the more experienced the enterprise, the greateritstotal factor productivity.

4.3. Robustness testing

Robustness testing is to verify the reliability of estimation results. Common methods include increasing or decreasing sample size, changing estimation methods, and replacing variables. In this article, the method of replacing variables is used for robustness testing. The OPmethodis used to measure total factor productivity as the dependent variable in the regression, and the robustness test results are compared and analyzed with the original model regression analysis results to prove the reliability of the empirical results.

Variables	(1)	(2)	
Variables	TFP_LP	TFP_OP	
Sub	0.109***	0.097***	
	(3.77)	(3.82)	
Tax	0.007***	0.008***	
	(3.05)	(3.64)	
Age	0.378**	0.413***	
	(2.41)	(2.98)	
Income	1.138***	1.099***	
	(10.34)	(11.30)	
Lev	0.005**	0.004**	
	(2.46)	(2.34)	
Num	0.000***	0.000**	
	(5.10)	(2.45)	
Constant	5.021***	3.778***	
	(11.72)	(9.99)	

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Table4.	Robustness	Test Results

According to Table4, the estimated coefficient of fiscal subsidies has decreased from 0.109 to 0.097, which weakens the promoting effect on total factor productivity of enterprises; The estimated coefficient of tax incentiveshasincreasedfrom0.007to0.008, which enhances the promoting effect on the total factor productivity of enterprises. The coefficients for controlling variables such as enterprise age, asset turnover ratio, asset liability ratio, and numberofemployeesare0.413,1.099,0.004, and0.00008, respectively, which are significant at a probability level of1%or5%. The estimated coefficients have a slight change, but the sign of the estimated coefficients remains consistent with the previous text. Therefore, it can be concluded that the model construction in this article is reasonable, and the estimated results are robust and effective.

5. Conclusion and Suggestions

5.1. Conclusion

This article empirically analyzes the relationship between fiscal and tax policies and total factor productivity of enterprises based on the data from the first four batches of A-share listed companies selected as national level specialized, refined, and innovative "little giants" announced by the Ministry of Industry and Information Technology from 2019 to 2021. The research results show that fiscal subsidies and tax incentives can promote enterprises to improve total factor productivity, and the effect of fiscal subsidies is stronger than that of tax incentives, but weaker compared to asset turnover. This indicates that in the future, the country still needs to increase fiscal subsidies and tax incentives, improve subsidy accuracy, and formulate more inclusive innovative preferential policies; The total factor productivity of

enterprises is influenced by a combination of multiple factors. The increase in age, asset turnover ratio, asset liability ratio, and number of employees can all promote the increase in total factor productivity of enterprises. Moreover, asset turnover ratio has the greatest positive promoting effect on total factor productivity of enterprises, followed by age, asset liability ratio, and number of employees. This indicates that in the future, the country should consider multiple factors and build an effective coordination mechanism to promote the improvement of total factor productivity of enterprises.

5.2. Suggestions

Specialized, refined, and innovative small and medium-sized enterprises are leading enterprises that focus on segmented markets, have strong innovation capabilities, high market share, master key core technologies, and have excellent quality and efficiency. They have gradually become the backbone of enhancing economic resilience, and whether they can effectively improve their total factor productivity has become a top priority in national governance. Therefore, this article will focus on proposing more targeted suggestions in terms of fiscal expenditure and tax incentives. In addition, to address the shortcomings and deficiencies in fiscal policy, a more comprehensive and effective collaborative mechanism will be proposed by integrating multidimensional elements.

(1) Optimize the structure and regulatory mechanism of fiscal subsidies, and provide precise support for the production and research and development of specialized, refined, and innovative small and medium-sized enterprises. In recent years, China has been strengthening financial subsidies for enterprises, but the accuracy of financial subsidies may be lacking, which can lead to the phenomenon that some enterprises cannot effectively and reasonably utilize the funds spent by the government. Therefore, the government needs to improve the effectiveness of policy implementation through various means. On the one hand, when formulating fiscal policies, it is necessary to establish hierarchical and differentiated management and effective process supervision mechanisms for small and medium-sized enterprises with different levels of development. While reasonably guiding enterprise development, it can also encourage specialized, refined, and new enterprises to increase research and development investment, help enterprises seize opportunities in core technology fields, and promote the improvement of total factor productivity of enterprises. On the other hand, combining fiscal expenditure policies with regional economic development policies, specialized, refined, and innovative small and medium-sized enterprises are important entities in the development of small and medium-sized enterprises in China. For enterprises in regions with different levels of economic development, specific problems should be analyzed and the fiscal expenditure mechanism should be refined. For example, the development of specialized, refined, and innovative small and medium-sized enterprises requires the effective integration of China's advanced manufacturing industry, innovative industries, and distinctive industrial structure. It is also necessary to actively strengthen exchanges and cooperation with other small and mediumsized enterprises, and comprehensively enhance the innovation capabilities of various types of small and medium-sized enterprises.

(2) Further increase the support for income tax incentives and enhance the innovation enthusiasm of specialized, refined, and innovative small and medium-sized enterprises. Although China has introduced many preferential policies for income tax, the results have been unsatisfactory. Tax incentives are mainly based on income tax incentives. In some regions, income tax preferential policies may cause a large influx of capital, leading to imbalanced development between regions and posing risks to tax collection and management. For example, if taxpayers evade taxes or evade taxes, it will to some extent increase the cost of tax collection and management. Therefore, to further increase the preferential treatment of income tax, optimization measures can be proposed from the following points. Firstly, on the basis of the

existing income tax benefits, further expand the scope of benefits, including taxpavers, taxpayers, tax rates, etc. This study also confirms that China's tax incentives can indeed improve the total factor productivity of "little giant" enterprises. Secondly, by lowering the entry threshold for some tax incentives, the government should formulate more innovative and inclusive preferential policies. Finally, the government should continuously optimize the tax rate structure based on the actual development of enterprises. From the perspective of corporate income tax, China's corporate income tax rate has always been relatively high, and the tax burden on enterprises is also heavy. The government can introduce multi-level tax rates to reduce the tax burden on specialized, refined, and new small and medium-sized enterprises, increase their cash flow, and also improve their total factor productivity.

(3) Taking into account multiple factors, specialized, refined, and innovative small and mediumsized enterprises should stimulate their internal drive and improve the total factor of production rate. This study found that there are many factors that affect the development of enterprises. In addition to leveraging external conditions, it is also necessary to rely on specialized, refined, and innovative small and medium-sized enterprises to seek their own solutions and solve development challenges. Firstly, it is necessary to increase asset turnover and debt to asset ratio appropriately, improve the efficiency of fund utilization, and improve the profitability of the enterprise by increasing operating income and controlling costs. At the same time, it is also necessary to fully utilize financial leverage and make reasonable use of external funds to promote the operation and development of the enterprise itself. Secondly, the high-quality development of specialized, refined, and innovative small and medium-sized enterprises cannot be separated from the guarantee and support of talents. Talents are the primary productive force of enterprises, and attention should be paid to the construction of high-precision and cutting-edge human resources teams. For example, enterprises can formulate scientific plans to attract talents from both domestic and foreign sources, build comprehensive and advanced laboratory platforms to provide good hard conditions for technology research and innovation, and increase support for talent subsidies. Then, specialized, refined, and new small and medium-sized enterprises should strive to develop economies of scale and maintain flexibility in organizational changes. For example, specialized, refined, and new small and medium-sized enterprises can reduce production and operation risks by splitting, merging, or establishing branch offices on the basis of maintaining their original development advantages. Finally, specialized, refined, and innovative small and medium-sized enterprises should focus on technological innovation and long-term sustainable development, cultivate core competitive advantages in high-tech, and avoid being "choked"; To optimize the trade and investment structure, actively engage in trade cooperation with countries around the world, build overseas information exchange platforms, and better explore foreign markets and expand commodity exports. At the same time, it is necessary to make good use of financial leverage to better serve the development of the real economy, effectively reduce the risk of overseas investment by enterprises, and thus better enable enterprises to "go global" smoothly.

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References

- [1] Wu Zhongxin, Huang Yingying, Wu Huizhi. Will specialized and innovative policies promote highquality development of small and medium-sized enterprises -- Evidence from Total Factor Productivity [J]. Journal of Central South University (Social Sciences Edition), 2023,29 (03): 129-140.
- [2] Wang Yao, Zeng Deming, Li Jian, et al. Bridging Scientists Founders and Enterprise Technology Innovation Performance: An Analysis Based on Specialized, Refined, and New "Little Giant" Enterprises [J]. Scientific Research, 2023,41 (09): 1690-1701.
- [3] Liu Qian, Li Hualin. Research on Innovation Policy, Executive Technical Background, and Innovation Performance of Specialized, Refined, and New "Little Giant" Enterprises [J]. Science and Industry, 2024,24 (03): 98-105.
- [4] Olley G S, Pakes A. The Dynamics of Productivity in the Telecommunications Equipment Industry [J] Econometrica, 1996, 64 (6): 1263-1297.
- [5] Levinsohn J, Petrin A. Estimating production functions using inputs to control unobservables [J] The Review of Economic Studies, 2003, 70 (2): 317-341.
- [6] Feng Zhijun, Chen Wei. Technology Sources and R&D Innovation Total Factor Productivity Growth: An Empirical Study Based on Regional Large and Medium sized Industrial Enterprises in China [J]. Science and Technology Management, 2013,34 (03): 33-41.
- [7] Bai Jie. The Heterogeneity Impact of Government Subsidies on Total Factor Productivity of High tech Enterprises [J]. Learning and Practice, 2020 (09): 66-74.
- [8] Liu Fang, Zhao Yanyun. Financial support, fiscal and tax incentives, and total factor productivity of high-tech industries: an empirical study based on enterprises in Zhongguancun Haidian Science and Technology Park. Research World, 2020 (10): 26-32.
- [9] Han Fengqin, Chen Yaping. Does tax incentives really promote technological innovation in enterprises-- Evidence from 15% tax incentives for high-tech enterprises [J]. China Soft Science, 2021 (11): 19-28.
- [10] Wang Heqian, Chen Kaiyang. The Impact of Innovation Support Policies on Enterprise R&D Investment and Business Performance: Micro evidence from Specialized, Refined, and New "Little Giant" Enterprises [J]. Southern Finance, 2022 (11): 22-35.
- [11] Zhang Wei. Government Subsidies and Innovation of Specialized, Refined, and New "Little Giant" Enterprises: From the Perspective of Institutional Environment [J/OL]. Journal of Chongqing University of Science and Technology (Social Science Edition): 2024:1-24
- [12] Wang Liya Research on the Impact of Government Subsidies and Tax Incentives on Total Factor Productivity of High tech Enterprises [D]. Beijing University of Posts and Telecommunications, 2024 (01).
- [13] Sun Lieju, Song Liangrong. Impact and Heterogeneity Analysis of Financial and Tax Policies on Total Factor Productivity of Enterprises: An Empirical Study Based on 48 Listed Intelligent Manufacturing Enterprises in China from 2016 to 2021 [J]. Accounting Research, 2023 (05): 4-10.
- [14] Bai Jie. The Heterogeneity Impact of Government Subsidies on Total Factor Productivity of High tech Enterprises [J]. Learning and Practice, 2020 (09): 66-74.