

Research on the Impact of a New Round of Tax Reduction and Fee Reduction Policies on the High Quality Development of Small and Medium-sized Enterprises

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Abstract: As a powerful measure to deepen the supply-side structural reform, tax reduction and fee reduction policies play an important role in promoting the high quality development of small and medium-sized enterprises (SMEs). This paper selects 582 SMEs listed on China's A-share market from 2018 to 2021 to measure their high quality development level and explore the policy effect of the new round of tax reduction and fee reduction policies implemented since 2018. The results show that the reduction and exemption of value-added tax (VAT) and social insurance premiums are conducive to improving the high quality development level of SMEs, and the impact of income tax reduction on the high quality development level of enterprises is not significant, and the income tax burden between enterprises is quite different. Therefore, this paper puts forward some policy suggestions to further implement of the tax and fee reduction policies, consolidate the achievements of the existing tax and fee reduction policy, improve the tax structure of enterprise VAT and social insurance premiums, implement differentiated income tax reduction and exemption policy, and guide the high quality development of SMEs.

1. Introduction

"High quality development" was first proposed at the 19th National Congress of the Communist Party of China, indicating that China's economy has shifted from a stage of high-speed growth to a stage of high quality development. High quality development is the theme of China's economic and social development during the 14th Five-Year Plan period and beyond. In the report of the 20th National Congress of the Communist Party of China, General Secretary Xi Jinping stressed that we should accelerate the construction of a new development pattern and focus on promoting high quality development. As micro-entities of the market economy, enterprises are important carriers of high-quality economic development. The high quality development of enterprises constitutes the micro-foundation of high-quality economic development. SMEs play an irreplaceable role in creating new jobs and invigorating the market economy. As an important part of the proactive fiscal policy, tax and fee cuts is one of the external factors for the high quality development of SMEs, which plays an important role in promoting the high quality development of SMEs. Past practice has shown that SMEs are the biggest beneficiaries of tax and fee cuts.

Since 2018, China has introduced more intensive tax and fee cuts than before. In 2018, the Ministry of Finance and the State Administration of Taxation issued the Notice

on Further Expanding the Scope of Preferential Income Tax Policies for Small and Low-Profit Enterprises (Finance and Taxation [2018] No. 77), which stipulates that from January 1, 2018 to December 31, 2020, the annual taxable income ceiling of small and low-profit enterprises will be raised from 500,000 yuan to 1 million yuan, and for small and low-profit enterprises whose annual taxable income is less than 1 million yuan (including 1 million yuan), their income will be reduced by 50%, and the corporate income tax will be paid at the tax rate of 20%. In 2019, the Ministry of Finance and the State Administration of Taxation issued the Notice on Implementing the Policy of Inclusive Tax Reduction and Exemption for Small and Micro Enterprises (Finance and Taxation [2019] No. 13), which stipulates that small-scale VAT taxpayers with monthly sales of less than 100,000 yuan (including this amount) will be exempted from VAT. In 2020, the Ministry of Human Resources and Social Security, the Ministry of Finance and the State Administration of Taxation jointly issued the Notice on Phased Reduction and Exemption of Enterprise Social Insurance Premiums (issued by the Ministry of Human Resources and Social Security [2020] No. 11), which stipulates that starting from February 2020, all provinces, autonomous regions and municipalities directly under the Central Government (except Hubei Province) and the Xinjiang Production and Construction Corps can, based on the impact of the epidemic and the affordability of the fund, the contribution of the three social insurance units of

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Micro, SMEs is exempted, and the exemption period shall not exceed 5 months.

Affected by the epidemic, many SMEs are struggling to operate and some face the risk of bankruptcy. They urgently need support from policies related to tax reduction and fee reduction. The Chinese government has increased the intensity of "tax reduction and fee reduction". The preferential tax policies for small and micro businesses introduced by the government in 2021 include reducing VAT, extending the implementation period of some preferential tax policies, halving corporate income tax, and reducing or exempting corporate social insurance premiums. The Announcement on Issues concerning the Collection and Administration of VAT Exemption for Small-scale Taxpayers (Announcement No.5, 2021 of the State Administration of Taxation) issued by the State Administration of Taxation stipulates that small-scale taxpayers who have VAT taxable sales and the total monthly sales volume does not exceed 150,000 yuan will be exempted from VAT; The Announcement on Matters related to the Implementation of Preferential Policies to support the Development of Income Tax for Small and low-profit Enterprises and Individual Industrial and Commercial Households (Announcement No.8, 2021 of the State Administration of Taxation) stipulates that the part of the annual taxable income of small and low-profit enterprises not exceeding 1 million yuan shall be reduced by 12.5% into the taxable income amount, and the enterprise income tax shall be paid at the rate of 20%.

In recent years, China's tax reduction and fee reduction policies have covered a wide range and implemented on a large scale, reflecting the universality and comprehensiveness of the tax reduction and fee reduction policies. It will help relieve the pressure on SMEs and help them tide over difficulties. At the same time, it is conducive to improving the operating conditions of SMEs, promoting the transformation of enterprises to the direction of innovative, coordinated, green, open and shared development, and improving the high quality development level of enterprises.

2 Literature review and research hypotheses

2.1 Connotation and measurement of enterprise high quality development

At present, the academia has not reached a conclusion on the meaning of high quality development of enterprises, but most scholars agree that the high quality development of enterprises should change from "quantity" to "quality", and pay attention not only to the enterprise's own business efficiency, but also to the enterprise's ability to create social value and sustainable development. Based on the research on the high quality development of state-owned enterprises, Huang Sujian et al. (2018) argued that the high quality development of enterprises can be defined as the pursuit of high-level, high-level and efficient economic and social value creation, as well as the goal state or development paradigm of shaping the excellent quality

and ability of sustainable growth and sustainable value creation of enterprises^[1]. Zhang Junkuo et al. (2019) argued that high quality development is the high-efficiency, fair, green and sustainable development that aims to meet people's growing needs for a better life^[2]. Starting from a micro perspective, Zhou Zhilong et al. (2021) defined high quality development of enterprises as a development state in which quality management and process control are achieved through strategic coordination of supply chain based on certain technical means within the constructed platform ecosystem on the premise of meeting security compliance, so as to provide high-quality products and services to the whole society and enable win-win cooperation among stakeholders^[3].

To measure the level of high quality development of enterprises, scholars mainly select relevant indicators based on the five concepts of "innovation, coordination, green, openness and sharing" to build an evaluation system for high quality development of enterprises. Fu Pengxia and Liu Qingsong (2020) selected specific indicators from four perspectives: economic efficiency, green ecological evaluation, SME development, and open innovation, and constructed an indicator system for the high quality development of regional SMEs^[4]. Zhou Zhilong et al. (2021) constructed a theoretical model of enterprise high quality development evaluation from four dimensions: safety compliance and quality management, product capability and customer capability, supply chain management and platform operation, and business performance and operation efficiency^[3]. Ma Zongguo and Cao Lu (2020) introduced the index of "high-quality social sharing" and selected three secondary indicators of external investment, employee rights and social value when constructing the evaluation system of high quality development of manufacturing enterprises^[5]. When measuring the level of high quality development of enterprises, Yang Lin and Shen Chunlei (2021), Duan Shu et al. (2022), Li Xiaoqing et al. (2022) use total factor productivity to measure the level of high quality development of enterprises^{[6]-[8]}, which comprehensively measures the impact of various factors input on enterprise development. However, its essence is to pursue input-output efficiency, which is not completely consistent with the current definition of high quality development of enterprises, and it is difficult to comprehensively measure the social value creation ability of enterprises. Therefore, based on the five development concepts, this paper selects relevant indicators from two aspects of the enterprise's own business efficiency and social value creation, and constructs the high quality development evaluation system of SMEs.

2.2 Research on the relationship between tax and fee reduction and the high quality development of SMEs

Since the "high quality development" was proposed, many scholars have explored the relationship between tax reduction and fee reduction policies and the high quality development of SMEs. VAT is the most important source of tax revenue in China, and the reduction of VAT burden

will have a great impact on SMEs. By studying the data of A-share listed companies from 2005 to 2017, Zhang Yan et al. (2022) found that the VAT reform helped to release the innovation dividend. In the industries with higher human capital level, higher capital intensity and more full market competition, the VAT reform more effectively promoted corporate innovation^[9]. Huang Xianhuan and Zhang Xianjing (2022), by studying the sample data of A-share listed companies in non-financial and non-real estate industries in Shanghai and Shenzhen from 2007 to 2020, found that the reduction of VAT tax burden through the mechanism of "real investment effect" and "cash holding effect", thus inhibiting the "from real to virtual" of real enterprises^[10].

Most scholars believe that the burden of corporate social insurance payment in China is too heavy. Wei Zhihua and Xia Taibiao (2020) found that the burden of social insurance contribution increases the labor cost of enterprises, which may lead to the decline of enterprises' free cash flow^[11]. Hu Dun and Li Qiaomin (2021) found that China's private enterprises bear a heavy burden of social insurance payment through a comparative analysis of the proportion and base of social insurance payment of Chinese enterprises, and a comparative analysis of the payment of three different sizes of private enterprises in Taiyuan, Shanxi Province^[12]. Reducing the social insurance burden of enterprises is also the focus of China's tax and fee reduction in recent years. Based on the data of 245 SMEs in Hubei province, Yang Bo (2022) tracked the changes in the level of social insurance burden from 2017 to 2020, and found that the effect of reducing fees and burdens from 2018 to 2020 gradually appeared, and the effect of reducing fees and burdens in 2020 was very significant. Compared with 2019, the average reduction was 60.37%^[13]. Cheng Yu et al. (2021) analyzed the impact of the "phased fee reduction" reform of pension insurance in 2016 on the actual fee reduction effect of enterprise pension insurance, and found that although the "phased fee reduction" reform caused the loss of enterprise pension insurance income, it also obtained social benefits from the aspects of enterprise profits and employee compensation and welfare^[14]. At the same time, there are a few scholars who believe that the reduction of social insurance premium rate has not really reduced the burden of enterprises. Zhang Yuhua and Lu Jun (2019), based on the adjustment event of China's social insurance premium rate since 2015, found that after the reduction of enterprises' social insurance premium rate, the labor cost of enterprises increased significantly^[15]. Guo Lei and Hu Xiaomeng (2020) analyzed the effects of the two policy effects of reducing the contribution ratio of enterprise employees' basic endowment insurance in 2016 and Shanghai's spontaneous reduction of urban employees' basic endowment insurance, basic medical insurance and unemployment insurance rates in 2013, and found that the actual burden of enterprise payment was not significantly reduced^[16].

There is a synergistic effect between the tax reduction policy and the fee reduction policy, and the new round of tax reduction and fee reduction policies has achieved good results on the whole. The study by Ma Jinhua et al. (2021)

shows that the reduction of corporate tax burden can improve the total factor productivity of manufacturing industry and promote high-quality economic development. Among them, reducing the VAT and income tax burden can increase the cash flow of enterprises and the investment in scientific and technological research and development, thus improving the production efficiency; However, the reduction of social insurance costs can only stimulate total factor productivity by increasing cash flow^[17]. Duan Shu et al. (2022) found that tax reduction and fee reduction policies improve firms' TFP through R&D investment, financing constraints and scale effect, and the synergistic effect of tax reduction and fee reduction policies is greater than the impact of individual policies^[7]. Yang Lin and Shen Chunlei (2021) analyzed the data of China's SME Board and Growth Enterprise Market Board from 2011 to 2019, and found that tax and fee cuts are conducive to improving the total factor productivity and value creation ability of SMEs, enabling high quality development of SMEs, but have heterogeneous effects on them in different life cycle, market competition degree and policy environment^[6]. Wang Yebin and Xu Xuefang (2019) explored the impact of tax reduction and fee reduction policies on the labor productivity of small and micro enterprises and found that tax reduction and fee reduction policies can effectively improve the labor productivity of small and micro enterprises^[18].

In addition, scholars have also analyzed the effect of tax reduction and fee reduction policies on the high quality development of enterprises from different perspectives, such as easing working capital pressure, improving the cost structure of enterprises, expanding production, expanding profit margin, improving financing difficulties, promoting enterprise innovation, stabilizing enterprise confidence, and improving the business environment.

Based on the above analysis, this paper puts forward the following hypotheses:

Hypothesis H_1 : The new round of tax reduction and fee reduction policies has a positive role in promoting the high quality development of SMEs.

Hypothesis H_{1a} : The reduction of VAT burden is conducive to improving the high quality development level of SMEs.

Hypothesis H_{1b} : The reduction of social insurance burden is conducive to improving the high quality development level of SMEs.

3 Measurement of the high quality development level of SMEs

The high quality development of SMEs is reflected in the improvement of the overall comprehensive ability of the enterprise. On the basis of focusing on traditional financial indicators such as profitability and risk management ability, the measurement of high quality development of SMEs should also focus on the long-term development of enterprises, pay attention to the creation of social value and the sustainable development ability of enterprises. Based on the five new development concepts of "innovation, coordination, green, openness and sharing",

this paper pays attention to the traditional financial indicators of SMEs to measure their own operating benefits. To sum up, this paper selects 17 indicators from six dimensions of enterprise innovation ability, enterprise financing and debt paying ability, enterprise growth ability, safety and environmental protection and quality control, foreign trade level, and social sharing level to construct the measurement index system, and uses the entropy weight method to carry out relevant measurement. Entropy weight method, as an objective weighting method, determines the weight through the data information reflected by each index, which is conducive to avoiding the deviation caused by subjective weighting. The specific index system is shown in Table 1.

According to the above evaluation indicators, this paper selects A-share listed SMEs from 2018 to 2021 as samples for research, and the data are from the CSMAR database. The sample data are processed as follows: first, the enterprises with missing sample data are excluded; second, the enterprises with losses for two consecutive years or more are excluded; third, the enterprises with ST, PT and ST* are excluded; fourth, the enterprises with

abnormal operating data are excluded; fifth, the enterprises in the financial industry are excluded. Finally, the data of 582 enterprises were selected.

As can be seen from Figure 1, in general, the high quality development level and growth rate of SMEs showed an upward trend from 2018 to 2021.

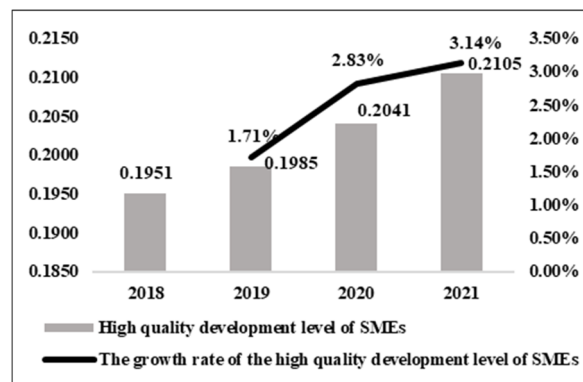


Figure 1: Overall high quality development level and growth rate of SMEs from 2018 to 2021

Table 1: Indicator system for measuring the high quality development level of SMEs

Target layers	Subsystem	Criterion layer	Specific indicators and explanations
High quality development level of SMEs	Enterprise innovation ability	Investment in innovation	R&D expenses as a percentage of revenue
		Number of R&D personnel	The ratio of the number of R&D personnel to the total number of employees in the company
		Patent design and invention	Number of patents obtained versus designs
	Enterprise financing and debt paying ability	Commercial credit financing ability	The ratio of business accounts payable to sales revenue
		Asset-liability ratio	Ratio of total liabilities to total assets
		Current ratio	Ratio of current assets to current liabilities
	Enterprise growth ability	Business operating cash flow	The ratio of cash flow from operating activities to total assets
		Profitability	Net profit
		Return on equity	The ratio of net profit to average net assets
		Earnings per share	The ratio of total profits to total equity
	Safety and environmental protection and quality control	Level of operating income	Growth rate of operating income
		Safety and environmental protection	Investment in safety and environmental protection
		Quality management level	Have passed ISO9000 quality management system certification
	Foreign trade level	Level of environmental management	Whether it has passed ISO14000 environmental management system certification
		Export capacity	Share of overseas operating income in operating income
	Social sharing level	Salary level of employees	Average employee salary
		Social contribution	Amount of social donations

4 Measurement model setting and empirical analysis results

4.1 Data sources

The tax and fee data and enterprise size data of the above 582 SMEs are from the Wind database, and the rest are from the CSMAR database.

4.2 Variable selection

1. Explained variable. In this paper, the measured high quality development level of SMEs is selected as the explanatory variable (Y).

2. Main explanatory variables. Taking into account the sources of enterprise tax and fee burden and the focus of national tax reduction and fee reduction, this paper selects

the following three variables as the main explanatory variables: VAT burden (Tb1), income tax burden (Tb2) and social insurance premiums burden (Tb3). The actual corporate income tax burden refers to the method of Porcano (1986), and the specific

calculation formula is actual corporate income tax burden = (income tax expense - deferred income tax expense)/operating profit^[19]. This paper uses the method of Fan Ziyang and Peng Fei (2017) to calculate the VAT paid by SMEs by using the inverse extrapolation method of education fees. Then the proportion of VAT in business income is used as the index to measure the actual VAT burden of enterprises^[20]. The social insurance burden is the ratio of the sum of the five insurances and housing funds paid by the company to the operating income.

3. Control variables. To avoid missing variables and ensure the reliability of the research results, the paper selects the following indicators as the control variables of this paper: enterprise size (Size), enterprise property (Property), board size (Scale), chairman's shareholding

ratio (Ratio1), general manager's shareholding ratio (Ratio2), shareholders' meeting attendance (Attendance), management expense ratio (Expense), enterprise age (Age).

The specific definitions of each variable are shown in Table 2.

Table 2: Variable names, symbols and meanings

Variable names	Variable symbol	Variable meaning
VAT burden	Tb1	(Education surcharge /0.03- consumption tax)/operating income
Income tax burden	Tb2	(Income tax expense - deferred income tax expense)/operating profit
Social insurance premiums burden	Tb3	Social insurance premium/operating income
Enterprise size	Size	Divided by enterprise size type by standard
Enterprise property	Property	Nature of ownership of the business
Board size	Scale	Number of board members
Chairman's shareholding ratio	Ratio1	Total number of shares held by the Chairman/total number of shares
General manager's shareholding ratio	Ratio2	Total number of shares held by general manager/total number of shares
Shareholders' meeting attendance	Attendance	The proportion of shares present at the general meeting to the total number of shares
Management expense ratio	Expense	Overhead/operating income
Enterprise age	Age	Year of the year minus the year the company founded

4.3 Model construction

To test the hypotheses of this paper, this paper constructs the multiple regression model as follows:

$$Y_{it} = \alpha_0 + \alpha_1 Tb1_{it} + \alpha_2 Tb2_{it} + \alpha_3 Tb3_{it} + \alpha_4 Size_{it} + \alpha_5 Property_{it} + \alpha_6 Scale_{it} + \alpha_7 Ratio1_{it} + \alpha_8 Ratio2_{it} + \alpha_9 Attendance_{it} + \alpha_{10} Expense_{it} + \alpha_{11} Age_{it} + \varepsilon_{it}$$

Where the subscript *i* represents the individual enterprise; *t* represents the year; *Y* represents the high quality development level of the SMEs, *Tb_{it}* represents the corporate tax burden, which is the key explanatory variable in this paper and measured by VAT burden (*Tb1*), income tax burden (*Tb2*) and social insurance premiums burden (*Tb3*); α_1 - α_{11} represent variable coefficient; ε_{it} represents the random disturbance term.

4.4 Analysis of empirical results

4.4.1 Descriptive statistics

In this paper, descriptive statistics are performed on the data, and the results are shown in Table 3. SMEs' VAT burden and income tax burden is heavier, which is higher than the social insurance premiums burden of enterprises. Therefore, tax reduction and fee reduction should focus on reducing SMEs' VAT burden and income tax burden. Table 3 shows that the mean value and standard deviation of SMEs' VAT burden are more significant than the income tax burden, which is mainly affected by a few large deals. It can be seen from Figure 2-5 that the difference in the income tax burden of SMEs from 2018 to 2021 is significantly more significant than that of the VAT burden and social insurance premiums burden after removing a few large values. The gap in tax burden among different SMEs will lead to the distortion of resource allocation, which is not conducive to fair competition among enterprises and not conducive to SMEs' high quality development.

Table 3: Descriptive statistics of variables

Variables	Observations	Mean	Standard deviation	Maximum	Minimum
<i>Y</i>	1781	0.203	0.049	0.383	0.105
<i>Tb1</i>	1781	0.138	2.424	86.843	0.025
<i>Tb2</i>	1781	0.124	0.291	4.488	1.890
<i>Tb3</i>	1781	0.002	0.022	0.756	0.001
<i>Size</i>	1781	2.924	0.287	3.000	1.000
<i>Property</i>	1781	0.309	0.462	1.000	0.000
<i>Scale</i>	1781	7.752	1.503	17.000	3.000
<i>Ratio1</i>	1781	13.253	15.815	69.640	0.000
<i>Ratio2</i>	1781	9.286	13.825	64.690	0.000
<i>Attendance</i>	1781	47.384	17.750	90.262	0.361
<i>Expense</i>	1781	0.132	0.525	18.042	0.004
<i>Age</i>	1781	18.977	5.670	41.000	4.000

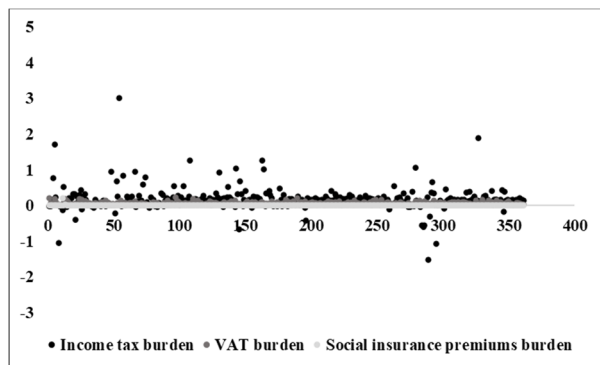


Figure 2: Comparison of the tax burden of SMEs in 2018

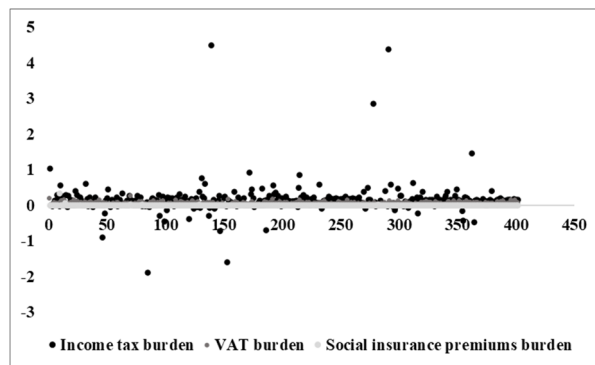


Figure 3: Comparison of the tax burden of SMEs in 2019

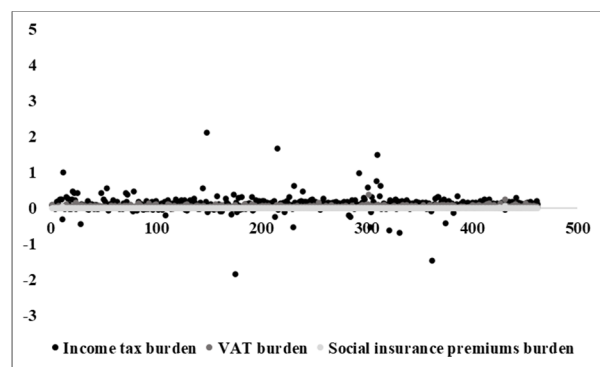


Figure 4: Comparison of the tax burden of SMEs in 2020

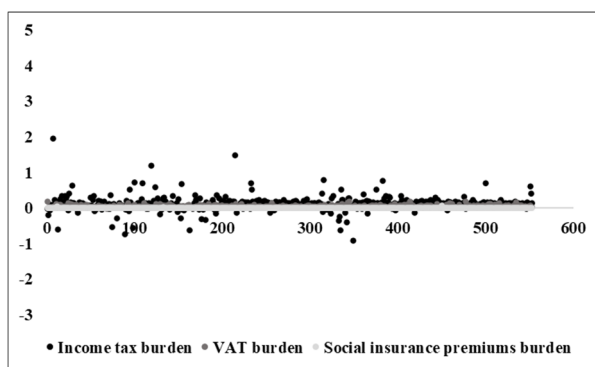


Figure 5: Comparison of the tax burden of SMEs in 2021

4.4.2 Correlation analysis

To avoid the measurement error caused by multicollinearity among the dependent variables of the empirical results, this paper conducts Pearson correlation

coefficient analysis on each variable to ensure the credibility of the observed effects. The correlation analysis results are shown in Table 4. Table 4 shows that the correlation coefficients between variables are all low, which excludes the possibility of multicollinearity.

Table 4: Correlation analysis results of variables

Variables	Y	Tb ₁	Tb ₂	Tb ₃	Property	Scale	Scale	Ratio1	Ratio2	Attendance	Expens	Age
Y	1											
Tb1	-0.0292	1										
Tb2	0.0026	-0.0186	1									
Tb3	-0.003	0.6411**	-	1								
Size	0.0424*	0.0101	0.0702**	0.0062	1							
Property	-0.0086	-0.0239	0.0003	0.0029	-0.0348	1						
Scale	0.0063	0.0265	0.0093	0.0329	0.0684**	0.0933**	1					
Ratio1	0.1520**	-0.0312	0.0174	0.0466*	0.0749**	0.2385**	-	1				
Ratio2	0.1309**	-0.0247	0.0083	-0.0355	0.0527*	0.1853**	-	0.7070*	1			
Attendan	0.1699**	-0.0134	0.0591*	-0.0105	0.1052**	0.1636**	-0.0437*	0.2814*	0.2619*	1		
Expense	0.0044	0.0502*	-0.0364	0.1516**	0.0931**	-0.0047	0.0110	0.0612**	0.0468*	-0.0604**	1	
Age	-	0.1618**	0.0333	-0.0251	0.0373	0.0238	0.0408*	0.0834**	-	-	0.0203	1

Note: ***, ** and * indicate significance levels at 1%, 5% and 10%, respectively.

4.4.3 Analysis of empirical results

The fixed effect model is selected in this paper, and the empirical results are shown in Table 5. The regression results of VAT burden and social insurance premiums burden positively correlate with the high quality development level of SMEs. They are significant at the level of 1%. There is no significant correlation between the income tax burden and the high quality development level of SMEs. This shows that the reduction of enterprise VAT and social insurance premiums is conducive to improving the innovation ability of enterprises, improving their financing and debt repayment ability, improving their

growth ability, promoting enterprises to strengthen quality and safety management and environmental protection investment, improving the level of foreign trade, and improving the level of social sharing, thereby promoting the high quality development of small and medium-sized enterprises. The regression results preliminarily verify this paper's hypotheses and hypotheses. That is, the new round of tax reduction and fee reduction policies has a positive role in promoting the high quality development of SMEs. Removing the VAT burden is conducive to improving the high quality development level of SMEs. Also, reducing the social insurance premiums burden is conducive to enhancing the high quality development level of SMEs.

Table 5: Regression results of the model

y	Coefficient	std. err.	t	P > t
Tb1	0.0001	0.0000	3.16	0.002
Tb2	0.0000	0.0029	0.01	0.994
Tb3	0.0189	0.0071	2.66	0.008
Size	0.0000	-	-	-
Property	0.0000	-	-	-
Scale	0.0013	0.0012	1.12	0.262
Ratio1	0.0003	0.0001	2.01	0.045
Ratio2	0.0003	0.0002	1.50	0.134
Attendance	0.0000	0.0001	0.18	0.854
Expense	0.0038	0.0004	8.80	0.000
Age	0.0021	0.0008	2.52	0.012
_cons	0.1717	0.0211	8.14	0.000

F (9639) = 12.29 Prob > F = 0.0000
 R-squared = 0.0497

4.4.4 Robustness test

This paper uses the placebo test method, referring to the way of Sun Xuejiao et al. (2019), to randomly assign the VAT burden (Tb1) and social insurance premiums burden (Tb3) to SMEs, and regression the newly generated samples 500 times according to the established model^[21].

The regression results are shown in Figures 6-7 and Table 6-7, which have few significantly positive and significantly negative coefficients, indicating that the virtual treatment effect does not exist. Therefore, the improvement of enterprises' high quality development level is indeed caused by the reduction of VAT tax and social insurance premiums burden rather than other accidental factors, which verifies the robustness of the above conclusions.

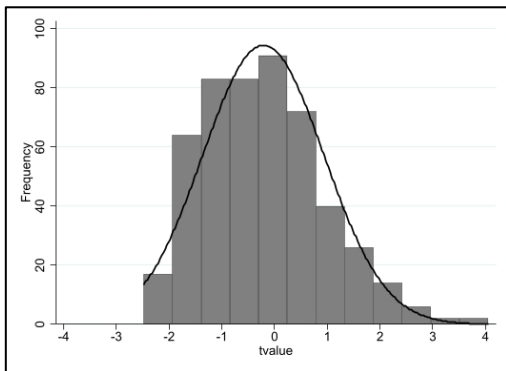


Figure 6: Test results of VAT burden (Tb1)

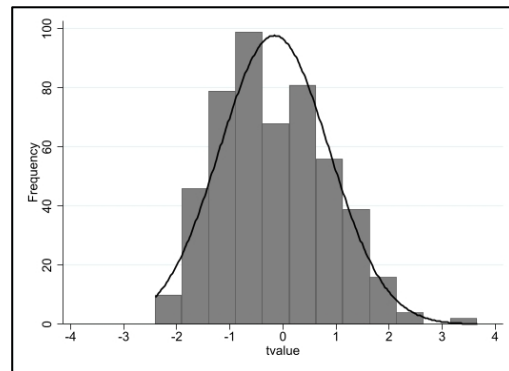


Figure 7: Test results of social insurance premiums burden (Tb3)

Table 6: Statistical distribution of regression results of the VAT burden (Tb1) dummy treatment effect

Methods	Variables	Mean	5% quantile	1/4 percentile	Median	3/4 quantile	95th spot	Standard deviation	N
	Coefficient	-0.00009	-0.00079	-0.00050	-0.00012	0.00022	0.00079	0.00049	500
	t value	-0.21248	-1.86069	-1.16635	-0.28118	0.51440	1.85356	1.14996	500

Table 7: Statistical distribution of regression results of the dummy treatment effect of social insurance premiums burden (Tb3)

Methods	Variables	Mean	5% quantile	1/4 percentile	Median	3/4 quantile	95th spot	Standard deviation	N
	Coefficient	-0.00776	-0.08256	-0.04671	-0.01076	0.02768	0.07528	0.05008	500
	t value	-0.16008	-1.70238	-0.96296	-0.22209	0.57095	1.55230	1.03258	500

4.4.5 Heterogeneity analysis

(1) Enterprise scale. Different enterprise sizes represent differences in their competitiveness in the market, and the national tax reduction and fee reduction policies has different levels of reduction and exemption for SMEs. This paper divides the whole sample into two parts: medium, and small and micro. The regression results are shown in Table 8. The VAT burden and the social insurance premiums are positively correlated with the high quality development of medium-sized enterprises at the significance level of 1%. In contrast, the income tax burden has no significant correlation. Reducing the VAT, income tax, and social insurance burden for small and micro enterprises does not significantly correlate with their high quality development. Medium-sized enterprises have a more robust response to tax reduction and exemption, and the effect of the policy on medium-sized enterprises is more significant than that on small and micro enterprises. Small and micro enterprises are a group greatly affected by the epidemic in recent years. Their financing, operation and resource allocation are all facing challenges, and implementing favorable policies for small and micro enterprises needs further expansion.

(2) The nature of enterprise ownership. Due to the different characteristics of requests, enterprises will face different market environments, business conditions, and resource sources. Their sensitivity to tax burden and the degree of response to the reduction and exemption of different tax categories are also different. Referring to the

research of Zhang Ruichen et al (2022) and Yan Guowan and Xia Xue. (2022), this paper analyzes the heterogeneity of tax reduction and fee reduction on the nature of enterprise ownership^{[22]-[23]}. The results show that for non-collective enterprises, the VAT and social insurance premiums burden are positively correlated with high quality development at the significance level of 1%. For enterprises with collective nature, the correlation between tax and fee burden and high quality development of enterprises is insignificant. In recent years, with the deepening of the domestic economic system reform and the arrival of a new scientific and technological revolution, the innovation and development of private enterprises are vigorous, and the positive impact of tax and fee reduction policies on their high quality development has become more significant.

(3) Management expense rate. Administrative expenses are an essential factor affecting the profitability of SMEs, reflecting the level of enterprise operation and management. This paper divides the management expense rate into low and high groups according to the median, and the results are shown in the following table. For enterprises with a high management expense rate, the impact of VAT burden and social insurance premiums burden on their high quality development is significant at 1% and 5%, respectively. In contrast, there is no powerful performance for enterprises with low management expense rates. This shows that the reduction of tax and fee reduces the administrative expense burden for enterprises, enabling SMEs to invest the funds used for tax into business operations and promote the high quality development of SMEs.

Table 8: Results of heterogeneity analysis

	Medium size	Small Micro	Collective nature	Non-collective nature	Low management Expense rate	High management Expense rate
	(1)	(2)	(3)	(4)	(5)	(6)
Tb_1	0.0001*** (3.32)	-0.0810 (-1.42)	0.01158 (0.26)	0.0001*** (3.58)	0.0537 (0.98)	0.0001*** (2.74)
Tb_2	-0.0004 (-0.14)	0.0035 (1.13)	-0.0022 (-0.30)	0.0008 (0.29)	0.0018 (0.41)	-0.0027 (-0.67)
Tb_3	0.0185*** (2.88)	-0.0320 (-0.04)	0.0434 (2.54)	0.0204*** (3.16)	-3.0294 (-1.21)	0.0190** (2.30)
Control variables	yes	yes	yes	yes	yes	yes
Time	yes	yes	yes	yes	yes	yes
Business	yes	yes	yes	yes	yes	yes
Number of observations	1657	124	551	1230	891	890
R^2	0.0180	0.0245	0.0541	0.0040	0.0185	0.0025

Notes: ***, ** and * indicate significance at 1%, 5% and 10%, respectively, and the values shown in parentheses are t-values.

5 Research conclusions and policy implications

5.1 Research conclusion

Based on the business data of SMEs from 2018 to 2021, this paper empirically analyzes the impact of a tax burden on the high quality development level of SMEs. The results show that with the intensive promulgations of tax reduction and fee reduction policies in recent years, the tax burden of SMEs has been reduced, their operating

conditions have been improved, and the high quality development level of SMEs has increased year by year. And the growth rate has accelerated. After controlling the influence of enterprise size, enterprise property, board size, chairman's shareholding ratio, general manager's shareholding ratio, shareholders' meeting attendance, management expense ratio and enterprise age, the reduction and exemption of VAT and social insurance premiums for SMEs have a significant role in promoting the high quality development level of SMEs. The impact of income tax reduction or exemption on SMEs' high quality development level is insignificant. The reason may be that the income tax burden of different SMEs varies greatly, which impacts the fair competition and high quality development of SMEs.

5.2 Policy implications

1. Further implement the tax reduction and fee reduction policies and consolidate the achievements of the existing tax reduction and fee reduction policies. In recent years, China has introduced a number of tax reduction and fee reduction policies. The healthy development of SMEs in the future needs the continuous help of tax reduction and fee reduction policies. Therefore, we should actively promote the implementation of tax reduction and fee reduction policies, improve the tax and fee supervision system, and ensure that SMEs can enjoy real tax and fee reduction preferences.

2. Improve the structure of enterprise VAT and social insurance premiums, and introduce more vigorous tax reduction and fee reduction policies. By improving the structure of enterprise VAT and social insurance premiums, we will further reduce the VAT burden and social insurance premiums burden of SMEs and guides enterprises to pursue profitability improvement. It also pays attention to SMEs' long-term sustainable development, improving innovation, quality, safety and environmental protection, and improving foreign trade. The achievements of promoting enterprise development should be shared with all employees and society.

3. Implement differentiated income tax reduction and exemption policies to promote fair competition among enterprises. Income tax is the main tax burden for many SMEs. Theoretically, the reduction of enterprise income tax has a significant role in reducing the burden of SMEs, improving their business conditions and promoting high quality development levels. However, in practice, the reduction of enterprise income tax has yet to enhance SMEs' high quality development level effectively. Because the income tax burden varies greatly among enterprises, which is not conducive to fair competition and high quality development level of SMEs, precise and differentiated income tax reduction and exemption policies should be implemented for different SMEs.

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References

1. Huang Sujian, Xiao Hongjun & Wang Xin. (2018). On the high-quality development of state-owned enterprises. *China Industrial Economics* (10), 19-41. doi:10.19581/j.cnki.ciejournal.2018.10.002.
2. Zhang Junkuo, Hou Yongzhi, Liu Peilin, He Jianwu & Zhuo Xian. (2019). Goal requirements and strategic path of high-quality development. *Management World* (07), 1-7. doi:10.19744/j.cnki.11-1235/f.20190711.001.
3. Zhou Zhilong, Deng Qian, Shen Xiaohan & Xiao Yilun. (2021). Research on Theoretical Model of Enterprise High Quality Development Evaluation—Based on the Case Analysis of BESTORE. *Macro Quality Research* (01), 80-95. doi:10.13948/j.cnki.hgzlj.2021.01.007.
4. Fu Pengxia & Liu Qingsong. (2020). Construction of High-quality Development Evaluation System for Small and Medium Enterprises. *Information Communication Technology and Policy* (05), 83-86. <https://kns.cnki.net/kcms/detail/detail.aspx?FileName=DXWJ202005018&DbName=CJFQ2020>
5. Ma Zongguo & Cao Lu. (2020). Construction and Measurement of High-Quality Development Evaluation System for Manufacturing Enterprises—Data Analysis of 1881 Listed Companies from 2015 to 2018. *Science and Technology Progress and Countermeasures* (17), 126-133. <https://kns.cnki.net/kcms/detail/detail.aspx?FileName=KJJ B202017019&DbName=CJFQ2020>
6. Yang Lin & Shen Chunlei. (2021). Does tax reduction and fee reduction enable the high-quality development of small and medium-sized enterprises?—Based on the empirical research of listed companies on the small and medium-sized board and the GEM. *Economic System Reform* (02), 194-200. <https://kns.cnki.net/kcms/detail/detail.aspx?FileName=JTG202102029&DbName=DKFX2021>
7. Duan Shu, Liu Xia, Yin Rong & Cai Lei. (2022). Does tax reduction and fee reduction enable high-quality development of enterprises? . *Economic Issues* (01), 20-30. doi:10.16011/j.cnki.jjwt.2022.01.004.
8. Li Xiaoqing, He Weixuan, Huo Yudan & Zhou Jian. (2022). How does digital innovation affect the high-quality development of enterprises - the moderating effect of digital financial level. *Journal of Capital University of Economics and Business* (01), 80-95. doi:10.13504/j.cnki.issn1008-2700.2022.01.007.
9. Zhang Yan, Liu Chong & Sha Xuekang. (2022). Will tax cuts help release innovation dividends—Theoretical and empirical evidence from value-added tax transformation reform. *Journal of Zhongnan University of Economics and Law* (06), 68-81. doi:10.19639/j.cnki.issn1003-5230.2022.0067.

10. Huang Xianhuan & Zhang Xianjing. Value-added Tax Burden, Bargaining Power and Enterprises "Turning from Reality to Virtuality". *Foreign Economics and Management*: 1-19. doi:10.16538/j.cnki.fem.20221128.203.
11. Wei Zhihua & Xia Taibiao. (2020). Social insurance payment burden, financial pressure and corporate tax avoidance. *China Industrial Economics* (07), 136-154. doi:10.19581/j.cnki.ciejournal.2020.07.019.
12. Hu Dun & Li Qiaomin. (2021). Research on the "burden" of social insurance payment and its impact on private enterprises. *Economic Issues* (03), 56-61. doi:10.16011/j.cnki.jjw.2021.03.008.
13. Yang Bo. (2022). Evaluation of the Effect of Reducing Social Insurance Fees and Burdens of Enterprises—A Study Based on the Accounting Data of Small and Medium-sized Enterprises in Hubei. *Friends of Accounting* (11), 96-104. <https://kns.cnki.net/kcms/detail/detail.aspx?FileName=KJZY202211014&DbName=CJFQ2022>
14. Cheng Yu, He Yixin & Liu Yuping. (2021). Policy Effect Evaluation of Social Security Fee Reduction Reform—Based on the Perspective of Enterprise Heterogeneity. *Journal of Shanxi University of Finance and Economics* (08), 1-15. doi:10.13781/j.cnki.1007-9556.2021.08.001.
15. Zhang Yuhua & Lu Jun. (2019). The impact of social insurance rate adjustment on enterprise labor costs. *Shandong Social Sciences* (08), 165-171. doi:10.14112/j.cnki.37-1053/c.2019.08.025.
16. Guo Lei & Hu Xiaomeng. (2020). Can lowering the social insurance premium rate reduce the payment burden of enterprises - based on the double test of central compulsory and local voluntary. *Scientific Decision* (01), 1-26. <https://kns.cnki.net/kcms/detail/detail.aspx?FileName=KXJC202001002&DbName=CJFQ2020>
17. Ma Jinhua, Lin Yuan & Fei Kunjie. (2021). Analysis of the impact of corporate tax burden on high-quality economic development—Evidence from my country's manufacturing industry. *Contemporary Finance and Economics* (03), 40-52. doi:10.13676/j.cnki.cn36-1030/f.2021.03.005.
18. Wang Yebin & Xu Xuefang. (2019). Tax cuts and fee reductions and high-quality economic development—Microscopic evidence from small and micro enterprises. *Taxation Research* (12), 16-21. doi:10.19376/j.cnki.cn11-1011/f.2019.12.003.
19. Porcano, T.M. (1986) 'Corporate Tax Rates: Progressive, Proportional, or Regressive', *Journal of the American Taxation Association*, 7(2),17. <https://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=6145060&lang=zh-cn&site=ehost-live> (Accessed: 13 January 2023).
20. Fan Ziyang & Peng Fei. (2017). The tax reduction effect and division of labor effect of "replacing business tax with VAT": Based on the perspective of industrial interconnection. *Economic Research* (02), 82-95. <https://kns.cnki.net/kcms/detail/detail.aspx?FileName=JJYJ201702007&DbName=CJFQ2017>
21. Sun Xuejiao, Zhai Shuping & Yu Su. (2019). Can Flexible Tax Collection and Management Ease Corporate Financing Constraints—Evidence from the Natural Experiment of Tax Credit Rating Disclosure. *China Industrial Economics* (03), 81-99. doi:10.19581/j.cnki.ciejournal.2019.03.015.
22. Zhang Ruichen, Wen Lei, Song Minli & Yang Siying. (2022). Tax and fee reduction, corporate financialization and corporate value creation. *Economic Issues* (08), 79-85. doi:10.16011/j.cnki.jjw.2022.08.007.
23. Yan Guowan & Xia Xue. (2022). Tax cuts and fee reductions and high-quality development of enterprises—Evidence from total factor productivity. *Contemporary Economic Science*: 1-15. <https://kns.cnki.net/kcms/detail/detail.aspx?FileName=DJKX20221222001&DbName=CAPJ2022>