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Tax Cuts and Fee Reductions and Corporate Financing Constraints: Incentive or Restraint? -- Data of a-share listed manufacturing companies from 2011 to 2020

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Abstract: *In recent years, major events such as trade frictions between China and the US and the outbreak of COVID-19 have increased economic uncertainties and impacted corporate financing accordingly. To this end, our government implements active tax and fee reduction policies to stimulate the development of enterprises, especially manufacturing enterprises. Tax reduction and fee reduction can have an impact on the financing constraints of enterprises by reducing the burden of capital use. Therefore, it is an important practical issue to discuss whether tax and fee reduction policies can effectively alleviate the insufficient financing constraints faced by manufacturing enterprises in a highly uncertain environment. Therefore, based on the data of a-share listed manufacturing enterprises from 2011 to 2020, this paper will discuss the relationship between tax and fee reduction policies and financing constraints and analyze their possible influence channels, thus providing a basis for the formulation of relevant policies.*

Keywords: *Tax Cuts; Fee Reductions; Financing Constraints*

1. Introduction

Financing constraints refer to the constraints formed by the fact that enterprises cannot obtain capital at the normal cost price during financing due to information asymmetry in the market. Tax reduction and fee reduction can stimulate the vitality of enterprises by increasing corporate cash flow, reducing corporate expenses, reducing corporate financialization motivation, and improving labor productivity, thereby effectively reducing debt financing costs [1]. Through research, it is found that the increase of tax burden will significantly increase the financing constraints of enterprises [2]. Reducing the tax burden level of enterprises can reduce production costs, increase the internal cash flow of enterprises, reduce the uncertainty of future cash flow, and improve the internal financing capacity of enterprises [3].

Compared with private enterprises, state-owned enterprises are less efficient but can obtain more credit funds [4]-[5]. When banks face excess capital needs, banks are more likely to reduce the lending limit of private enterprises or even refuse to lend to them [6]-[7]. The study found that the reduction of the tax rate effectively alleviated the financing constraints of domestic enterprises [8]. The improvement of the quality of corporate information disclosure is an important channel leading to the loosening of interest rate controls and reducing financing constraints [9]. Enterprises with high accounting conservatism have low operating risks and high information quality, which can effectively reduce investment risks caused by uncertainty, and thus can alleviate debt financing constraints [10]-[11].

The main task of this paper is to empirically examine the role of tax reduction and fee reduction in corporate financing, and to verify whether it helps alleviate corporate financing constraints. At present, there are few empirical literatures on the relationship between tax cuts and fee reductions and corporate financing constraints. The possible contributions of this paper are: First, this paper will enrich the research on tax reduction and fee reduction and financing constraints. Second, this paper examines in detail the differences in the impact of financing constraints on companies with different ownership properties, types of accounting firms, commercial credit, and high-tech companies under the background of tax and fee reduction policies.

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2. Research Analysis

This paper uses the SA index to measure the financing constraints faced by listed companies. The calculation result of this index is negative. After taking the absolute value, the larger the value, the more serious the financing constraints. The specific calculation method of the SA index is as follows:

$$SA=-0.737\times Asset+0.043\times Asset^{2}-0.040\times Age \quad (1)$$

Where Asset is the natural logarithm of the company's total assets (in millions of yuan), Age is the time when the company was listed.

This paper selects size, cost, roe, fix, yield, lev as control variables, as shown in table 1.

Table 1: Control Variables

Size	Log total assets
Cost	Logarithm of operating costs
Roe	Net profit/Total assets
Fix	Net fixed assets/total assets at the end of the period
Yield	Investment income/total assets
Lev	Total Liabilities/Total Assets
Circle	Total asset turnove
Roa	Total Profit/Total Assets
Z	Shareholding ratio of the largest shareholder
Age	Shareholding ratio of the largest shareholder

The relationship between tax reduction and fee reduction and corporate financing constraints is:

$$FC=\beta_0+\beta_1 DjDt+\beta_2 Size+\beta_3 Cost+\beta_4 Roe+\beta_5 Fix+\beta_6\mathrm{Yield}+\beta_7\mathrm{Lev}+\beta_8\mathrm{Circle}+\beta_9\mathrm{Roa}+\beta_{10}\mathrm{Z}+\beta_{11}\mathrm{Age}+\varepsilon \quad (2)$$

Where FC is the explained variable of the model, DjDt is the explanatory variable of the model, ε is the random disturbance term, and the rest are control variables.

The nature of ownership, tax reduction and fee reduction and corporate financing constraints are:

$$FC=\beta_0+\beta_1 DjDt+\beta_2 Soe+\beta_3 Soe\times DjDt+\beta_4 Size+\beta_5 Cost+\beta_6 Roe+\beta_7 Fix+\beta_8\mathrm{Yield}+\beta_9\mathrm{Lev}+\beta_{10}\mathrm{Circle}+\beta_{11}\mathrm{Roa}+\beta_{12}\mathrm{Z}+\beta_{13}\mathrm{Age}+\varepsilon \quad (3)$$

Where Soe ×DjDt represents the intersection of tax burden and property.

The types of accounting firms, tax and fee reductions and corporate financing constraints are:

$$FC=\beta_0+\beta_1 DjDt+\beta_2 Big4+\beta_3 Big4\times DjDt+\beta_4 Size+\beta_5 Cost+\beta_6 Roe+\beta_7 Fix+\beta_8\mathrm{Yield}+\beta_9\mathrm{Lev}+\beta_{10}\mathrm{Circle}+\beta_{11}\mathrm{Roa}+\beta_{12}\mathrm{Z}+\beta_{13}\mathrm{Age}+\varepsilon \quad (4)$$

Where Big4 ×DjDt represents the intersection of tax burden and property.

The commercial credit, tax and fee reduction and corporate financing constraints are:

$$FC=\beta_0+\beta_1 DjDt+\beta_2 Businesscredit+\beta_3 Businesscredit\times DjDt+\beta_4 Size+\beta_5 Cost+\beta_6 Roe+\beta_7 Fix+\beta_8\mathrm{Yield}+\beta_9\mathrm{Lev}+\beta_{10}\mathrm{Circle}+\beta_{11}\mathrm{Roa}+\beta_{12}\mathrm{Z}+\beta_{13}\mathrm{Age}+\varepsilon \quad (5)$$

Where Businesscredit ×DjDt represents the intersection of tax burden and ownership.

The high-tech enterprises, tax and fee reduction and corporate financing constraints are:

$$FC=\beta_0+\beta_1 DjDt+\beta_2 Newhightechenterprise+\beta_3 Newhightechenterprise\times DjDt+\beta_4 Size+\beta_5 Cost+\beta_6 Roe+\beta_7 Fix+\beta_8\mathrm{Yield}+\beta_9\mathrm{Lev}+\beta_{10}\mathrm{Circle}+\beta_{11}\mathrm{Roa}+\beta_{12}\mathrm{Z}+\beta_{13}\mathrm{Age}+\varepsilon \quad (6)$$

Where Newhightechenterprise ×DjDt represents the intersection of tax burden and ownership.

3. Experiment Analysis

We adopt the analysis method of descriptive statistical results, and the results obtained are shown in Table 2. From Table 2, we can see that the maximum value of financing constraint FC is 7.923, the minimum value is 2.280, the mean value is 4.152, and the standard deviation is 1.067, indicating that the Financing constraints vary widely. The average value of DjDt for tax reduction and fee reduction is 0.883,

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and the standard deviation is 0.322, indicating that the vast majority of listed companies have enjoyed the tax reduction and fee reduction policy. The rest of the variables are within the normal range.

Table 2: Descriptive statistics results

Variable	N	SD	Mean	Min	Median	Max
size	6,411	0.955	21.70	19.90	19.90	24.69
cost	6,411	1.138	20.94	18.59	18.59	24.39
roe	6,411	0.0611	0.0499	-0.251	-0.251	0.211
fix	6,411	0.113	0.203	0.0158	0.0158	0.522
lev	6,411	0.172	0.337	0.0467	0.0467	0.756
yield	6,411	0.00803	0.00408	-0.00923	-0.00923	0.0496
circle	6,411	0.284	0.578	0.123	0.123	1.743
ownership	6,411	14.56	34.95	8.730	8.730	73.70
roa	6,411	0.0676	0.0593	-0.260	-0.260	0.245
age	6,411	0.441	2.590	1.099	1.099	3.332
FC	6,411	1.067	4.152	2.280	2.280	7.923
DjDt	6,411	0.322	0.883	0	0	1

We further analyze the impact of tax and fee reduction policies on corporate financing constraints through heterogeneity analysis. The results of tax reduction and fee reduction and corporate financing constraints are shown in Table 3. It can be seen from Table 3 that the coefficient of DjDt for the full sample is not significant at any level. In the correlation analysis, tax reduction and fee reduction have a significant negative impact on corporate financing constraints, which is -0.046.

Table 3: Full sample - tax and fee reduction and corporate financing constraints (preferential period is a control variable)

VARIABLES	FC
DjDt	0.00262
	(0.00219)
size	1.135***
	(0.00394)
cost	0.0138***
	(0.00390)
roe	0.138
	(0.116)
fix	0.0239***
	(0.00846)
lev	-0.0482***
	(0.00650)
yield	-0.302***
	(0.0733)
circle	-0.0274***
	(0.00742)
ownership	0.000470***
	(0.000110)
roa	-0.0696
	(0.108)
age	0.0368***
	(0.00571)
preferentialyear	-0.00205***
	(0.000773)
Constant	-20.61***
	(0.0382)
Observations	6,411
Number of code	959
R-squared	0.995

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We get the results of the nature of ownership, tax reduction and fee reduction and corporate financing constraints as shown in Table 4. Table 4 shows that the coefficient of DjDt is significantly negative, and the coefficient of the cross term Soe×DjDt is significantly positive. This shows that the reduction effect of tax and fee reduction policies on corporate financing constraints is more obvious in private enterprises.

Table 4: The nature of ownership, tax reduction and fee reduction and financing constraints (preferential period is the control variable)

VARIABLES	FC
DjDt	-0.0158**
	(0.00616)
Soe×DjDt	0.0204***
	(0.00635)
soe	-0.0133**
	(0.00672)
size	1.135***
	(0.00393)
cost	0.0135***
	(0.00390)
roe	0.135
	(0.116)
fix	0.0232***
	(0.00846)
lev	-0.0475***
	(0.00650)
yield	-0.303***
	(0.0732)
circle	-0.0272***
	(0.00741)
ownership	0.000460***
	(0.000110)
roa	-0.0686
	(0.108)
age	0.0368***
	(0.00571)
preferentialyear	-0.00177**
	(0.000778)
Constant	-20.60***
	(0.0386)
Observations	6,411
Number of code	959
R-squared	0.995

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We get the results of the types of accounting firms, tax and fee reductions, and corporate financing constraints. Table 5 shows that the coefficient of DjDt is not significant. However, the Big4×DjDt coefficient of the cross item is significantly negative, which can greatly reduce the information asymmetry of enterprises in terms of preferential tax policies, and then conduct tax planning reasonably and legally, which helps to reduce the amount of financing constraints of enterprises.

We get the results of commercial credit, tax reduction and fee reduction and corporate financing constraints as shown in Table 6. Table 6 shows that the coefficient of DjDt is not significant. However, the cross term Businesscredit×DjDt coefficient is significantly negative, and business credit can effectively reduce the dependence of enterprises on external financing, alleviate the problem of lack of funds faced by enterprises, and further ease the financing constraints of enterprises.

Table 5: Types of accounting firms, tax and fee reductions and financing constraints (preferential period is a control variable)

VARIABLES	FC
DjDt	0.00367*
	(0.00221)
Big4×DjDt	-0.0480***
	(0.0107)
big4	0.104***
	(0.0114)
size	1.134***
	(0.00391)
cost	0.00794**
	(0.00386)
roe	0.163
	(0.115)
fix	0.0195**
	(0.00838)
yield	-0.291***
	(0.0729)
circle	-0.0234***
	(0.00738)
ownership	0.000375***
	(0.000108)
roa	-0.0774
	(0.107)
age	0.0342***
	(0.00567)
preferentialyear	-0.00184**
	(0.000769)
Constant	-20.50***
	(0.0359)
Observations	6,411
Number of code	959
R-squared	0.995

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Table 6: Business credit, tax and fee reduction and financing constraints (preferential period is a control variable)

VARIABLES	FC
DjDt	0.000707
	(0.00236)
Businesscredit×DjDt	-0.0205**
	(0.00906)
Businesscredit	0.0201**
	(0.00907)
size	1.134***
	(0.00399)
cost	0.00911**
	(0.00393)
roe	0.160
	(0.116)
fix	0.0178**
	(0.00846)
yield	-0.314***
	(0.0737)
circle	-0.0257***
	(0.00750)
ownership	0.000402***
	(0.000110)
roa	-0.0735
	(0.108)
age	0.0360***
	(0.00573)
preferentialyear	-0.00207***
	(0.000777)
Constant	-20.52***
	(0.0362)
Observations	6,411
Number of code	959
R-squared	0.995

We get the results of high-tech enterprises, tax reduction and fee reduction and corporate financing constraints as shown in Table 7. Table 7 shows that the coefficient of DjDt is not significant. However, the Newhightechenterprise×DjDt coefficient of the cross item is significantly negative, which indicates that the reduction effect of tax and fee reduction policies on corporate financing constraints is more obvious in high-tech enterprises.

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Table 7: High-tech enterprises, tax and fee reduction and financing constraints (preferential period is a control variable)

VARIABLES	FC
DjDt	0.00427*
	(0.00227)
Newhightechenterprise×DjDt	-0.00867*
	(0.00450)
Newhightechenterprise	0.00507
	(0.00435)
size	1.135***
	(0.00393)
cost	0.0140***
	(0.00390)
roe	0.145
	(0.116)
fix	0.0247***
	(0.00846)
lev	-0.0486***
	(0.00649)
yield	-0.299***
	(0.0732)
circle	-0.0277***
	(0.00741)
ownership	0.000471***
	(0.000109)
roa	-0.0765
	(0.108)
age	0.0365***
	(0.00571)
preferentialyear	-0.00211***
	(0.000773)
Constant	-20.62***
	(0.0383)
Observations	6,411
Number of code	959
R-squared	0.995

4. Conclusion

Under the current background of tax reduction and fee reduction, this paper discusses the relationship between tax reduction and fee reduction policies and financing constraints based on the data of A-share listed manufacturing companies from 2011 to 2020. We found that tax cuts and fee reductions have no direct impact on financing constraints, but it will indirectly affect corporate financing constraints through some other factors. In addition, the reduction effect of tax and fee reduction policies on corporate financing constraints is more obvious in private enterprises. Considering the difference in the types of accounting firms, it is found that the tax reduction and fee reduction policy of hiring “big four” companies has a more obvious effect on reducing financing constraints than hiring non-“big four” companies. Commercial credit will enhance the effect of tax cuts and fee reductions and corporate financing constraints. Finally, the reduction effect of tax and fee reduction policies on corporate financing constraints is more obvious in high-tech enterprises.

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