The Impact of Government Subsidies on Enterprise Exports: Evidence from China

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Abstract

This paper selects the panel data from the merger of the China Industrial Enterprises Database and China Customs Database from 2000 to 2007, and uses a Fixed Effect Model to study the impact of government subsidies on corporate exports. In addition, the paper adds control scalars such as enterprise size, enterprise age, corporate profit margin, and corporate capital-labor ratio. Empirical results show that government subsidies have a significant positive impact on the current export of enterprises.

Keywords

1. INTRODUCTION

The Chinese economy is still in a special stage of transition to a market economy. The market mechanism and government intervention have jointly determined the investment and operation activities of the micro-economic entities. In most cases, the market as an "invisible hand" can effectively adjust the allocation of economic resources and promote a general equilibrium in the overall economic operation. However, when the market is in a state of failure, the market mechanism cannot fully play a role in regulating the allocation of resources. At this time, the government, as a "visible hand," can formulate correct economic policies to intervene in microeconomic activities to a certain extent, weakening The impact of "market failure" on microeconomic activities, thereby improving the efficiency of resource allocation. Government subsidies are a relatively common policy tool used by government departments to change economic policies. They mainly smooth out fluctuations in economic development by providing financial donations to enterprises, and gradually become an important factor affecting business decision-making and behavioral performance.

2. METHODOLOGY

2.1. Selection of Variables

The export value of an enterprise is affected by many factors: from the perspective of the enterprise, the size, age, profit margin, industry and industry of the enterprise are all important reasons affecting the final value of the enterprise's exports. From the analysis of external environmental factors: financing constraints, ownership and other factors may greatly affect corporate exports. The subject of this article is the degree of influence of government subsidies on corporate exports. Therefore, in addition to government subsidies for external factors, this article will also choose the size of the enterprise, the age of the enterprise, the profit rate of the enterprise, and the ratio of the labor capital of the enterprise as the control variables for analysis.

Table 1. Variable table

Variable	Definition
Export	Take the log of the current export value of the enterprise
Subsidy	Government subsidies
Scale	Take the log of the total number of employees in the enterprise
Year	Years of establishment
Profitablity	Logarithm of corporate profitability
Capital-labor rate	Annual average balance of the company's net fixed assets / total number of employees

2.2. Model Construction

In order to improve the accuracy of model estimation, this paper takes the logarithm of some variables when constructing the model. Since the calculation year of this paper is selected from 2000 to 2007, the focus is on analyzing the impact of government subsidies on the export of enterprises to meet the time and consistency of the enterprise. Therefore, a fixed-effect model is used.:

$$Export_{it} = \beta_0 + \beta_1 Subsidy_{it} + \beta_2 Scale_{it} + \beta_3 Year_{it} + \beta_4 Profitablity_{it} + \beta_5 Capital-laborrate_{it} + \sigma_{enterprise} + \rho_{time} + \tau_{it} \qquad (1)$$

Among them, i and t respectively represent the export value of the i-th enterprise in the t-year; the explained variable $Export_{it}$ represents the impact of government subsidies on the export of the enterprise; $Subsidy_{it}$ is the i-th enterprise at the t-th Government subsidies received in 2005; $Scale_{it}$, $Year_{it}$, $Profitablity_{it}$, and $Capital-laborrate_{it}$ represent each control variable, and the specific meaning is the scale of the i-th company, the age of the company, and the company Profit rate and enterprise capital-labor ratio; $\sigma_{enterprise}$ and ρ_{time} represent the fixed effects of the enterprise and time, respectively; τ represents the random interference term.

3. RESULTS AND DISCUSSION

3.1. Basic Regression Analysis

This paper uses a fixed-effects model to study the impact of government subsidies on corporate exports. The basic regression results are shown in Table 1. Model 1 represents the regression results of government subsidies on corporate exports, without controlling variables and fixed effects. According to the regression results, government subsidies have a significant positive impact on corporate exports. The coefficient of β_1 is 0.089, which is significant at the 1% display level. Model 2 shows that in addition to the effects of government subsidies on corporate exports, control variables such as enterprise size, corporate age, corporate profitability, and corporate capital-labor ratio have been added, but time and firm fixed effects have not been added. The regression results show that the government variables of the explanatory variables have a significant positive impact on corporate exports, while the control variables behave differently: the size and profitability of the enterprises have a significant positive impact on corporate exports, while the age of the enterprise and the labor capital of the enterprise The ratio will have a significant negative impact on corporate exports, but this is not consistent with our daily experience and judgment. Therefore, in Model 3, we mainly consider the extent to which the explanatory variable government subsidies affect the exports of the companies with the explanatory variables, adding fixed time and corporate effects, and not including the control variables for the time being. The results show that government subsidies

have a significantly positive effect on the export of enterprises, and the goodness of fit is improved compared to model one. Finally, in Model 4, we consider both explanatory variables, control variables, and the effects of time and firm fixed effects on firm exports. Regression results show that government subsidies, enterprise size, enterprise age, corporate profitability, and corporate capital-labor ratio all have significant positive effects on corporate exports, and the goodness of fit is improved compared to Model 2.

Taken together, government subsidies, business size, business age, business profitability, and business capital labor ratios will have a strong positive impact on business exports. According to the regression results, business profitability, business size, and business age affect The impact factor of corporate exports is relatively high.

Table 2. Basic regression results

	Model One (1)	Model Two (2)	Model Three (3)	Model Four (4)
Subsidy	0.0883***	0.0139**	0.0504***	0.0313***
	(0.0060)	(0.0060)	(0.0090)	(0.0080)
Scale		0.5322***		0.5878***
		(0.0140)		(0.0490)
Year		-0.1149***		0.1466***
		(0.0210)		(0.0540)
Profitability		0.8697***		0.9432***
		(0.1240)		(0.2080)
Capital-labor rate		-0.0174*		0.0742**
		(0.0100)		(0.0320)
Constant	13.6027***	11.2697***	14.0989***	10.2099***
	(0.0270)	(0.0810)	(0.0410)	(0.3710)
Firm fixed effect	N	N	Y	Y
Time fixed effect	N	N	Y	Y
Observations	30,3880	30,3880	17,5410	17,5410
R-squared			0.8420	0.8480

3.2. Heterogeneity Test

The degree of marketization is an important indicator of China's current economic construction's transition to a socialist market economy. It reflects the important role played by the market in the overall operation of the social economy and is an important manifestation of market resource allocation capabilities. China's economic level is significantly different, and the degree of marketization varies greatly in different regions. Even if the same region is in different industrial sectors, enterprises with marketization degrees have different regulatory effects. Especially when the government intervenes in the economy, the impact of marketization on the export of enterprises is more significant. The heterogeneity analysis in this paper is based on the method of Model 4 in the basic regression experiment results, that is, considering the effect of government subsidies on the export of enterprises, adding the fixed effects of time and enterprise, and considering the size, age, and profit rate of the enterprise And the impact of corporate capital-labor ratios on government subsidies.

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The regression estimation results show that government subsidies have the highest impact in markets with a low degree of marketization. For every 1 percentage point increase in government subsidies, the export of enterprises increases by 0.095 percentage points. In areas with a high degree of marketization, government subsidies show a positive impact on corporate exports, while in areas with a high degree of marketization, they show a negative impact. In terms of control variables, in regions with low marketization, the impact of enterprise size and enterprise age on corporate exports is negative, especially the age of the enterprise shows a negative effect, but the capital-labor ratio of the enterprise is significantly positive-labor-capital ratio For every one percentage point increase, the export of enterprises increases by 0.81 percentage point. It shows that in areas with less marketization, the export of enterprises is more dependent on government subsidies, and it is closely related to the industrial structure of enterprises. In regions with a moderate degree of marketization, the coefficient of corporate profitability on corporate exports is relatively the most significant—for each percentage point increase in corporate profitability, corporate exports increase by 1.31 percentage points. For regions with a higher level of marketization, the impact of enterprise size on enterprise exports is relatively the most significant-for each percentage point increase in enterprise size, enterprise exports increase by 0.61 percentage point. Comparing the regression results of the marketization degree test and the subregional test, it shows a general consistency.

Table 3. Heterogeneity test

	Low	Medium	High
Subsidy	0.0953	-0.0137	0.0331***
	(0.066)	(0.029)	(0.008)
Scale	-0.3169	0.2148	0.6061***
	(0.362)	(0.173)	(0.050)
Year	-3.4611	0.1297	0.1676***
	(2.497)	(0.245)	(0.049)
Profitability	1.2674	1.3071**	0.9185***
	(1.847)	(0.566)	(0.234)
Capital-labor rate	0.8094***	-0.0204	0.0721**
	(0.253)	(0.101)	(0.032)
Constant	20.2975***	12.4492***	10.1702***
	(6.054)	(1.406)	(0.368)
Observations	33	1,749	15,478
R-squared	0.971	0.831	0.851

4. CONCLUSION AND POLICY SUGGESTION

This article takes government subsidies as the research object, and uses the data from the merger of China's industrial enterprise database and customs database from 2000 to 2007 to analyze the impact of government subsidies on corporate exports using a fixed effect model. The conclusions of this article are:

Government subsidies have a significant role in promoting the export of Chinese enterprises. In addition, the size of the enterprise, the age of the enterprise, the profit margin of the enterprise, and the capital-labor ratio of the enterprise will have a strong positive impact on enterprise exports. The impact of firm size and firm age on firm exports is relatively high. In regions with a higher degree of marketization, the positive impact of the scale of enterprises on their exports is more significant. In areas where the degree of marketization is central, corporate profitability has a relatively more positive impact on corporate exports. In regions with low levels of marketization, the positive impact of government subsidies and labor-capital ratios is relatively obvious, reflecting the importance of government subsidies and industrial structures to regions with low levels of marketization.

According to the previous research results, we can see that government subsidies have a significant promotion effect on corporate exports. In order to support the government to make more reasonable government subsidies and support the development of enterprises, based on the above analysis, this article proposes the following:

Suggestions for the future development of enterprises: 1. Actively go to the international market, increase export intensity and foreign investment. Foreign direct investment will allow enterprises to penetrate into the host country market, which will bring more convenient conditions for enterprises to learn about foreign advanced technology opportunities. In the process of foreign direct investment, apply foreign advanced technology to your own enterprises, improve your own survivability, production efficiency, and innovation level. 2. Improve management efficiency and strengthen staff education. An efficient and scientific management system can ensure that companies implement various response strategies in a timely manner during the process of internationalization. 3. Increase the scale of enterprises and increase productivity. The large scale of the enterprise, the increase in productivity, and the effective enhancement of its strength in various aspects can enable it to better withstand the impact of external risks. Only by becoming bigger and stronger can we improve our competitiveness and achieve survival and development in international operations.

Policy recommendations for government subsidies:

Chinese companies have limited overseas operating experience. In the face of a complex international environment, companies want to "go global" while developing and expanding in the international market, realizing transformation and upgrading, and improving their management level and core competitiveness. Macro-control and policy support and support.

1. Strengthen the attention and support for export enterprises. Establish and improve export risk assessment institutions. In the initial stage of enterprise export, it faces relatively many difficulties. The government should increase capital subsidies and policy support to enable enterprises to transition smoothly. For example, for enterprises in the primary stage of export, a certain percentage of loss subsidies, export tax rebates, tax reductions and other policies are given. For export enterprises with certain experience, in order to increase the export intensity of enterprises after the steady transition of overseas markets, the government should pay attention to their core technologies or core products. Help them with brand building or promotion. For example, it supports research and development of its core products for export, establishes a dynamic subsidy mechanism, and formulates subsidies based on its export intensity to encourage it to increase its export intensity and focus on its core competitiveness in exports. 2. Guide enterprises to make foreign investments. On the one hand, companies are encouraged to make direct foreign investment in policies, and some policy support is given to companies that invest abroad. The "Belt and Road" development strategy has created better conditions for enterprises to make direct foreign investment, can provide enterprises with more information about these countries, promote exchanges and cooperation between enterprises and these countries, and make enterprises more willing to invest in these countries. . State-

owned enterprises that make foreign investment can also provide financial support for them. 3. Encourage enterprises to transform and upgrade, and increase innovation support and subsidies. In order to improve the core competitiveness of enterprises, the government can provide policy support to enterprises that have been transformed and upgraded, and encourage enterprises to introduce and develop new technologies. For enterprises that carry out innovation activities, the government must not only provide strong financial support, but also continue to pay attention to the rationality of the results of the innovation stage and the expected effects, to avoid large-scale subsidies that make innovative companies miscalculate the risk of innovation failure due to lack of failure pressure or The benefits of successful innovation, so that innovation decisions have an original adverse effect on the survival of the enterprise.

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