The Effect of Financing Constraints on China's Enterprise Export

YONGHUA YANG and LINHUA WANG

ABSTRACT

This paper constructs an export model of heterogeneous enterprises with financing constraints and put forward the hypothesis of financing constraints and export. Based on the panel data of China's industry enterprises from 2005 to 2014, this paper establishes a model and estimates the hypothesis. The main conclusions are as follows: the larger the financing constraint, the less export; Compared with domestic financing constraints, export enterprises are more constrained by external financing constraints; In the process of export, the state-owned enterprises are less constrained than the private ones, and the private ones are heavily affected by the financing constraints. Among them, the influence of exogenous financing constraints is the biggest.

KEYWORDS

Financing constraints, export, heterogeneous enterprises.

INTRODUCTION

Since the reform and opening up, trade in goods in China has grown tremendously. With China joined the WTO in 2001 and the implementation of the "go out" strategy, the size of China's exports continued to expand. The total exports of China in the world ranking rose to No. 2 in 2007, from 28th in 1980 and China had been the world's top exporter from 2009 to 2016. Therefore, it was always a hot spot to explore the factors of China's export growth. With the outbreak of the international financial crisis in 2008, the global economy was depressed, and the export of China had been greatly hit. The export growth of China slowed to -16.0% in 2009 while an average of 14.4% in 1981-2000 and 24.7% in 2001-2008. Based on this, many scholars had conducted research for the financing constraint factors for the export of China.

LITERATURE REFERENCES

Hoshi (1991) believed that the enterprise owned the host bank can alleviate the problem of information asymmetry and reduce the cost of obtaining exogenous funds. But the independent enterprise without host bank faced higher external financing costs and they were constrained by external financing in the credit markets. Greenaway et al. (2005) conducted an empirical study on the scale of UK firms' export and the level of corporate financing constraints. The results showed
that British companies can more easily obtain the support of foreign funds to overcome the sunk costs in the export process under the conditions of low levels of exogenous financing constraints. Therefore, the ease of the extent of exogenous financing constraints was good for enterprises export trade. Based on the literature of corporate financing constraints, Manova (2008) further empirically tests reached the conclusion that firms can obtain exogenous financing through the external financial sector to cover the sunk cost in the export process. The development and improvement of external financial markets can improve the conditions for financing constraints of enterprises and make it easier for enterprises to obtain the support of external funds. Sun et al. (2011) empirically studied the impact of cross-border financing constraints for the export trade of China by using the probit model. The results showed that the main obstacle to the export of enterprises was exogenous financing. And the study found that State-owned enterprises were not significantly affected by external financing constraints, while private enterprises relied heavily on exogenous financing in the process of cross-border investment. They thought that corporate financing constraints would affect the size of their export trade. Combined with Business micro-panel data, Chen et al. (2012) conducted an empirical test for the impact of enterprise exogenous financing on enterprise export by establishing a firm-level fixed effect panel model. They thought that the exogenous financing of enterprises not only affected the export decision-making of enterprises, but also affected the scale of export of enterprises. By using the data of industrial enterprises, Xu et al. (2015) added financing constraint variables based on the heterogeneity theory model of enterprises and used the data of Chinese industrial enterprises to make an empirical analysis on the impact of financing constraints for enterprises' participation in export. Research showed that the companies with more mortgage assets can easier access exogenous financing. Enterprises with financial support can overcome the fixed costs of exports and make it easier for enterprises to enter foreign markets.

THE HYPOTHESES ABOUT THE EFFECT OF FINANCING CONSTRAINTS FOR EXPORT OF ENTERPRISES

In exports, the fixed costs of an enterprise include the purchase of raw materials, the labor force employed to produce the goods, the search for export decision information, etc. According to the above model analysis, when the enterprise pursues the profit maximization under the financing constraint, there is a critical value of the financing constraint. When it is greater than the critical value, corporate profits are positive, enterprises participate in export activities. When it is less than the critical value, the profits derived from the export of the enterprises are not enough to cover the investment costs, and the enterprises will reduce the exports. So we can get it:

Hypothesis 1: The greater financial constraints are faced by enterprises, the smaller the export possibility and the export scale, and the smaller financial constraints are faced by enterprises, the greater the export possibility and the export scale.

In the financial market, issues of asymmetric information, imperfect development and etc. result corporate faces complex procedures for borrowing in the process of loaning to financial institutions. And businesses have many
constraints, such as higher lending rates, higher mortgage requirements, inadequate loan size, and short repayment periods.

Hypothesis 2: The higher the dependence of enterprises on the exogenous financing in the financial market, the more the ones are constrained by the exogenous financing.

Empirical analysis of relevant literature shows that the effect of degree of financing constraints for different ownership of enterprises has a significant difference, which led to different ownership of enterprises making different export decisions. So we can get it:

Hypothesis 3: The order which is about the size of the impact of financing constraints on the export of enterprises, in descending order, is private ones, foreign-funded ones, state-owned ones.

AN EMPIRICAL ANALYSIS ABOUT THE IMPACT OF FINANCING CONSTRAINTS ON EXPORT OF ENTERPRISES

The construction of measurement model

In order to test the effect of financing constraints on the export of Chinese enterprises, based on the above theoretical analysis we build the model as follows:

\[
\ln EX_t = \alpha_0 + \alpha_1 \ln \text{PROBIT}_t + \alpha_2 \ln RA_t + \alpha_3 \ln IE_t + \epsilon_t
\]  

Interpreted variable EX is the export of enterprises. Explanatory variables include total profit PROBIT, which measures endogenous financing constraints, commercial credit accounts receivable RA, interest payment IE which is the index of exogenous financing pages.

Empirical results and analysis

Exogenous financing constraints of enterprises, measured by interest expense logarithm, have a greater impact on corporate exports. The coefficient is 0.432 means that for every additional unit of interest payment, the enterprise's export volume will increase by 0.432 units. In addition, the coefficient of loan receivables that affect the export value of enterprises is 0.412, which is significant at the 5% level. The coefficient of total profit, which measures the firm's internal financing constraints, is 0.321, which is significant at the 5% level. Through the empirical analysis, it is found that the explanatory variable financing constraints have a significant impact on the explained variable enterprises' exports, which is in line with the theoretical hypothesis 1 proposed in this paper: the smaller the financing constraints, the larger the enterprise's exports. Similarly, by comparing the variables of various financing constraints on the export coefficient of enterprises, we can get financing constraints indicators which affect the export of enterprises: the interest payments of enterprises, the loan receivables and the total amount of profits in decreasing order of decreasing. Among them, interest payment which is an enterprise financial measure of exogenous financing constraints, have the greatest impact coefficient on exports, validated the theoretical hypothesis 2.
TABLE 1. EMPIRICAL RESULT OF ECONOMETRIC MODELS.

<table>
<thead>
<tr>
<th></th>
<th>Ln EX</th>
<th>T-Statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ln PROBIT</td>
<td>0.321**</td>
<td>1.957</td>
</tr>
<tr>
<td>Ln RA</td>
<td>0.412**</td>
<td>1.234</td>
</tr>
<tr>
<td>Ln IE</td>
<td>0.432** **</td>
<td>1.854</td>
</tr>
</tbody>
</table>

Note: Values in parentheses are t-statistic, * represents affect is significant at 10% level, ** represents affect is significant at 5% level and *** represents affect is significant at 1% level.

THE IMPACT OF FINANCING CONSTRAINTS ON THE EXPORT OF DIFFERENT OWNERSHIP ENTERPRISES

Constructing empirical measurement model

In the study of the impact of financing constraints on the export of enterprises, we adopt the same explanatory variables, including the total corporate profits, loan receivables and interest payments to measure the financing constraints faced by enterprises. The explained variables of the model become the export volume of enterprises EX, and logarithm of the data of the variables makes the empirical results of the regression more significant.

\[ \ln EX = \alpha_0 + \alpha_1 \ln \text{PROBIT}_t + \alpha_2 \ln \text{RA}_t + \alpha_3 \ln \text{IE}_t + \alpha_4 \ln L_t + \alpha_5 K_L + \epsilon_t \]  

(2)

Empirical results and analysis

The data mainly include the export of industrial enterprises from 2005 to 2014 as explained variables. In the model, the explanation variables which measures enterprises' financing constraints indicators are mainly the total profit (PROBIT), accounts receivable (RA), interest expense (IE). According to the formula (2), regression results are as follows:

The empirical results show that the financing constraints have an impact on the export of enterprises. Among them, the enterprise internal financial constraints measured by the total amount of corporate profits have an impact coefficient on the export volume of enterprises of 0.404, which is significant at the level of 10%. Second, the coefficient of influence of trade receivables which represents business credit on corporate exports is -0.915, also is significant at the 10% level. In addition, the coefficient of corporate interest expense is 0.433, which is significant at the level of 10%. Except that financing constraints affect the export of enterprises, the scale and capital intensity selected by the model also significantly affect the export of enterprises. Among them, the estimated coefficient that the enterprise size variable affects its exports is 1.184, which is significant at 1% level. This shows that the larger the scale of enterprises, enterprises export more easily. At present, there is no significant causal relationship between the volume of export transactions of Chinese enterprises and their own capital intensity. This conclusion is in line with the forecast of Heckscher-Ohlin resource endowment model. On the whole, the competitive advantage of Chinese enterprises in exporting commodities still depends on the traditional cheap labor endowments.
### TABLE 2. THE EMPIRICAL RESULT OF FINANCING CONSTRAINTS AFFECTS THE EXPORT.

<table>
<thead>
<tr>
<th>Dependent variable LNEX</th>
<th>All enterprises</th>
<th>State-owned enterprises</th>
<th>Private enterprises</th>
<th>Foreign enterprises</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total profit logarithm</td>
<td>Ln PROBIT</td>
<td>0.404*</td>
<td>0.101</td>
<td>0.158</td>
</tr>
<tr>
<td>Accounts receivable logarithm</td>
<td>Ln RA</td>
<td>-0.915*</td>
<td>-0.455</td>
<td>1.724*</td>
</tr>
<tr>
<td>Interest expense logarithm</td>
<td>Ln IE</td>
<td>0.433*</td>
<td>0.629*</td>
<td>0.312**</td>
</tr>
<tr>
<td>Enterprise size</td>
<td>Ln L</td>
<td>1.184***</td>
<td>0.693*</td>
<td>0.519*</td>
</tr>
<tr>
<td>Capital density</td>
<td>K L</td>
<td>0.142</td>
<td>0.043</td>
<td>0.337</td>
</tr>
<tr>
<td>R-squared</td>
<td></td>
<td>0.998</td>
<td>0.997</td>
<td>0.995</td>
</tr>
</tbody>
</table>

Note: Values in parentheses are t statistic, * stands for significance at 10% level, ** stands for significance at 5% level and *** stands for significance at 1% level.

The impact of corporate financing constraints on exports is significantly different due to different ownership. The impact of financing constraints on the export of state-owned enterprises and foreign-funded enterprises is not significant; while the financing constraints have a significant impact on the exports of private enterprises. The empirical results show that, in private enterprises, the regression coefficient of commercial credit constraint variables which is measured by loan receivables is 1.724, which is significant at 5%. This shows that in the process of export, private enterprises have a significant hindrance to the volume of their export transactions due to commercial credit constraints. It is difficult for private enterprises to obtain credit support and lack of funds, so it is hard to overcome the costs that the export market needs to pay. Second, in private enterprises, the estimated coefficient of exogenous financing constraint variables measured by interest expense is 0.312, which is significant at 1% level. This shows that private enterprises tend to have a negative impact on the volume of their export transactions due to the constraints of foreign financing. Compared with private enterprises, state-owned enterprises and foreign-funded enterprises have a relatively low degree of financial constraints, and state-owned enterprises have basically no external financing constraints. Owing to credit discrimination based on the nature of ownership, enterprises can obtain sufficient external funds to easily pay fixed costs. Therefore, exogenous financing constraints can’t play a key role in the export of state-owned enterprises. Compared with private enterprises, foreign-funded enterprises are more easily to receive financial support from their home country companies. Therefore, the inward financing of foreign-funded enterprises is less limited by financing constraints. In the regression model, the scale of export of foreign-funded enterprises is less affected by the endogenous financing constraints.

In addition, the results of empirical research show that: in the export process, the size of enterprises will have an impact on state-owned enterprises, private enterprises and foreign-funded enterprises. According to the estimation results, using the fixed assets of enterprises to measure the size of enterprises has a significant effect on the state-owned enterprises, private-owned enterprises and foreign-funded enterprises. The estimated coefficient of effect of enterprise size variables on state-owned enterprises is 0.639, which is significant at 10% level. The estimated coefficient of effect of enterprise size variables on private enterprises is 0.519, which is significant at 5% level. The estimated coefficient of effect of enterprise size variables on foreign companies is 1.445, which is significant at 1% level. As for the impact of the scale of enterprises which measured by fixed assets...
on the export of enterprises, in terms of enterprise ownership, the impact on foreign-funded enterprises is greater than that of private-owned enterprises, and the impact on private-owned enterprises is greater than that of state-owned enterprises. The impact of firm capital intensity on different ownership enterprises is not obvious. That is, the theoretical hypothesis 3 is verified: the impact of financing constraints on the export volume of enterprises from big to small in turn is private enterprises, foreign-funded enterprises, state-owned enterprises.

CONCLUSION AND COUNTERMEASURES

The financing constraints of enterprises have an important impact on their exports. The improvement of corporate financing environment can effectively help enterprises overcome the fixed costs and smoothly enter the international market. The study found that compared with the private-owned enterprises, state-owned enterprises are facing a relatively low degree of financial constraints. The export of private-owned enterprises is heavily influenced by the financing constraints, of which the exogenous financing constraints are the most. Compared with state-owned enterprises and private-owned enterprises, the impact of financing constraints on the export of foreign-funded enterprises is not significant. It shows that there is a positive correlation between the export enterprises and the profits and retained earnings created by the enterprises themselves. Therefore, when enterprises ease the financing constraints of export, from the perspective of enterprises, perfecting and promoting the deepening reform of China's financial system can enable enterprises to have more ways and channels for financing, ease the constraints and costs of corporate financing constraints, and promote enterprises to export.

ACKNOWLEDGMENTS

This research is supported by the project of Philosophy and Social Science Research of Yunnan Province (No. JD2015YB23) and Department of Science and Technology of Yunnan Province under grant number 2016FB118.

Corresponding author: Linhua Wang, 1121862789@qq.com, School of Economics and Management, Yunnan Normal University, Kunming 650500, China

REFERENCES