

Research on the Interrelationship between the Financing Structure of State-owned Enterprises and Their Transnational Investment Behavior

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Abstract. The reform of state-owned enterprises and accelerated pace of "one belt and one road" construction led to the optimization of the policy system environment which have promoted the state-owned enterprises to become the main force of overseas investment. The preliminary formation of diversified financing pattern in which multiple financing modes coexist proves that the changes of the transnational investment behavior characteristics of State-owned Transnational Enterprises are related with the changes of financing environment and characteristics. This paper makes an empirical analysis of the overseas investment behavior of State-owned Transnational Enterprises under soft financing constraints, and draws the conclusion that the sensitivity of overseas investment to financing constraints is higher than that of investment opportunities, and the influence of home country's policies, especially the financing environment, is more prominent than that of host country's government's policies. The impact of investment opportunities on the overseas investment of multinational enterprises is more significant.

Keywords: State-owned Transnational Enterprises; Financing structure; Transnational investment behavior.

1. Introduction

With the deepening of the reform of state-owned enterprises and the increasing pace of construction of "one belt and one road" in China, more and more local state-owned or state holding enterprises have taken part in overseas market competition and gradually become the main force of China's overseas investment. Under the specific policy and institutional environment, State-owned Transnational Enterprises and non-State-owned Transnational Enterprises show different characteristics in financing channels, financing structure and financing constraints. Under incomplete market conditions, the financing structure of enterprises will affect their investment behavior through asymmetric information and various agency costs, resulting in over-investment and under-investment. However, there is little empirical experience on overseas investment of state-owned enterprises. With the deepening of the "one belt and one way" initiative, it is of great significance for the State-owned Transnational Enterprises to change their financing channels, optimize their capital structure and adjust their investment behavior. This paper explores the impact of the financing structure of State-owned Transnational Enterprises on the investment behavior, and proves that the overseas investment projects of State-owned Transnational Enterprises can be adjusted through the change of financing channels.

2. Theory Analysis and Research Hypothesis

The study on the investment behavior of enterprises under the framework of neoclassical economics holds that under the condition of complete market competition, the marginal return of capital equals the return when the cost of capital is used to maximize the profit of enterprises, which explains the reason of investment behavior of enterprises. However, the strict assumptions of this theory make the conclusions of the study lack empirical support. On the basis of Coase (1937), Alcline and Demsetz (1972), Jensen and Meckling (1976) introduced agency cost, and proposed

that the debt level and maturity, ownership structure, investment scale, cash flow of investment projects, tax rate, industry and many other factors may change or indirectly affect the agency cost of enterprises' liabilities. In the case of separation of ownership and management, the financing structure has an impact on investment decision-making through agency conflict, and clearly puts forward two kinds of impact: asset substitution and insufficient investment. At the same time, it further analyses the impact of issuance of enterprise risk bonds on enterprise investment decision-making. Dudley (2012) established a real option model including enterprise financing decision and investment decision and added the fixed cost of enterprise financing structure adjustment. When an enterprise invests, its profitability will be positively correlated with its leverage ratio. When the possibility of investment increases, the enterprise will put part of the funds from issuing creditor's rights into the cash account to support the upcoming investment. Chen et al. (2011) used the data of Listed Companies in China from 2002 to 2006 to reveal that administrative intervention will cause the investment efficiency of state-owned listed companies to be lower than that of non-state-owned listed companies. Some Chinese study such as Yang Huajun, Hu Yiming, (2007) and Yu Honghai(2010) pointed out that the Over-investment of state-owned enterprises is more obvious than that of non-state-owned enterprises, which results in low investment efficiency. But is there the same investment behavior conclusion in transnational investment? This paper considers that if there is a correlation between financing structure and transnational investment, regardless of the nature of ownership, the difference of financing structure between state-owned transnational enterprises and state-owned non-transnational enterprises can be deduced as one of the main reasons for the difference in investment behavior and effect between the two sides.

If the financing structure is the main reason for the difference of investment behavior and scale, the difference of investment efficiency between State-owned Transnational Enterprises and non-State-owned Transnational Enterprises in enterprises with similar asset-liability ratio should be insignificant, that is, the sensitivity of investment to investment opportunities is similar. In terms of investment efficiency, based on the sensitivity of investment to investment opportunities in previous studies, the higher the sensitivity coefficient, the higher the investment efficiency (e.g. Mortal & Reisel, 2013 ; Yu Kun, 2014). Therefore, this paper also uses the previous research methods to measure investment efficiency by using the investment-investment opportunity response coefficient.

Some scholars tried to analyze the financing structure adjustment behavior of enterprises when they have significant capital needs. The results show that enterprises will use the opportunity of large-scale investment to adjust their financing structure. Based on the above ideas, we further try to analyze whether the relationship between overseas investment and financing structure adjustment of State-owned Transnational Enterprises conforms to this judgment, that is, when faced with overseas investment, State-owned Transnational Enterprises will adjust their financing options. However, due to many risk factors of overseas investment, such as the intervention of national policy factors, the underdevelopment of capital market, the administrative approval of securities financing and other macro-factors, there may be higher costs in the adjustment of its financing structure, which may lead to the long-term deviation of the actual capital structure of enterprises from the target capital structure. Therefore, there is a significant relationship between overseas investment and capital adjustment. Then we have reason to believe that State-owned Transnational Enterprises can balance various stakeholder relationships through overseas investment, thus can change the deviation of their actual capital structure from the target capital structure. Frye and Shleifer (1997) proposed that state-owned equity embodies two different effects of "hand of plunder" and "hand of help". The administrative intervention brought about by state-owned equity will distort the optimal allocation of resources, which has been proved by Chinese scholars in state-owned listed companies. If the financing constraints of State-owned Transnational Enterprises are weaker than those of non-State-owned Transnational Enterprises, at the same time, the government supervision brought by state-owned equity can effectively restrain the phenomenon of "insider control" of listed companies, and prove the helpful role of the nature of ownership. So are these significant in transnational investment of multinational corporations? Based on these, this paper puts forward the following four hypotheses.

H1: The financing structure of State-owned Transnational Enterprises is significantly related to overseas investment. The higher the debt, the smaller the scale of transnational project investment; and vice versa.

H2: The sensitivity of transnational investment opportunities of State-owned Transnational Enterprises to investment is similar to that of non-State-owned Transnational Enterprises.

H3: There is a significant correlation between the adjustment of financing structure of State-owned Transnational Enterprises and the scale of overseas investment.

H4: The relationship between the debt ratio of State-owned Transnational Enterprises and the scale of overseas project investment is positive or negative, even if it is negatively correlated, its degree will be similar to that of non-state-owned multinational companies in China.

3. Methodology and Data

3.1 Methodology

This paper uses the annual investment rate of overseas projects to definite investment scale (overseas investment/total assets), using Inv_{it} representation, and takes investment scale as the explanatory variable in the empirical model. Asset-liability ratio is chosen as the explanatory variable of the model (Deb_{it}). Generally speaking, industrial factors may have an impact on the investment behavior of enterprises. However, by adding industrial virtual variables as the control variables in the model, the impact of industrial virtual variables on the results is not significant, and there are multiple collinearities. Therefore, the impact of industrial factors on the investment of State-owned Transnational Enterprises is not significant. This paper adopts the above research results and does not include the industrial dummy variables in the regression model. In order to verify the hypothesis above, this paper uses the following basic models to analyze:

$$Inv_{it} = \alpha Deb_{it} + c + \sum \chi_i + \sum \delta_t + \varepsilon_{it} \quad (1)$$

Among them, subscripts i and t represent companies and years respectively, χ_i and δ_t represent individual and time-fixed effects respectively, which are estimated parameters. For enterprise investment, since enterprise investment includes both capital expenditure and merger and acquisition expenditure, this paper uses total assets to standardize.

On the basis of model (1), we further introduce investment opportunity TobinQ (TQ) to express investment opportunity. As a test of investment opportunity and investment efficiency sensitivity, we get an empirical model (2).

$$Inv_{it} = \alpha Deb_{it} + \beta TQ_{it} + \gamma Ad_{it} + \theta Sta_{it} + c + \sum \chi_i + \sum \delta_t + \varepsilon_{it} \quad (2)$$

Subscriptions i and t represent companies and years respectively, and TQ represents investment opportunities, which is the ratio of the total market value of stocks to the book value of debts to the book value of total assets.

In order to verify hypothesis 3, the capital structure adjustment variable Ad is further introduced, which is expressed by the change rate of financial expenses. The other variables have the same meaning as model (1), (2) and the model (3) is obtained.

$$Inv_{it} = \alpha Deb_{it} + \beta TQ_{it} + \gamma Ad_{it} + c + \sum \chi_i + \sum \delta_t + \varepsilon_{it} \quad (3)$$

Regarding hypothesis 4, the model introduces a virtual variable representing state-owned holding. When the listed company in the sample is a state-owned multinational enterprise, $Sta = 1$,

otherwise $Sta = 0$. Other variables have the same meanings as model (1), (2), (3). Establish the model (4) as follows:

$$Inv_{it} = \alpha Deb_{it} + \beta TQ_{it} + \gamma Ad_{it} + \theta Sta_{it} + c + \sum \chi_i + \sum \delta_t + \varepsilon_{it} \quad (4)$$

Table 1. Variable specification

Variable name	Explanation
Inv	Overseas Investment and Standardization with Total Assets
Deb	Asset-liability ratio
TQ	(Total market value of stocks + book value of debts)/book value of total assets, net assets for non-tradable shares
Sta	If the actual controller of a company takes 1 from a state-owned enterprise, 0 from a non-state-owned enterprise.
Ad	Ring-to-Ring Variation Rate of Financial Expenses and Cost of Capital Structure Change

3.2 Data

Considering the disclosure time of cash flow statement of Listed Companies in China and the time of formal large-scale overseas investment, as well as the starting point of China's investment system reform (the promulgation of Decision in 2004), this paper collects the relevant information of Listed Companies in Chinese multinational companies from January 2005 to July 31, 2015. Financial data and specific sample period are determined according to specific research needs. According to the needs of empirical research in the following paper, in order to ensure the validity of the data and eliminate the influence of outliers on the conclusions of the study, the following constraints should be continued on the selected research samples: a. excluding ST and PT companies in listed companies; b. excluding the data of companies that delisted during the study period and failed to list and trade for various reasons; c. excluding total assets, Book Equity and Book liabilities (short term). Long-term and long-term) data missing samples. Through the above methods, a total of 7 592 "company/year" observations were obtained, including panel data of 95 listed companies' relevant financial indicators from 2005 to 2015. The main data used in this paper are from the Wind database of Wind Consulting and the Heritage/AEI 'China Global Investment Tracking' data set.

4. Methodology and Data

From the regression results, TobinQ means that the nature of investment opportunities and state-owned enterprises is not significant, while the debt ratio and the cost of capital structure adjustment are significantly negative at the significant level of 1%. It verifies the four hypotheses proposed before, and also shows that the optimization of capital structure of State-owned Transnational Enterprises has an important impact on the adjustment of overseas investment structure, and the target capital structure can be achieved by balancing the interests of stakeholders. The regression results are shown in Table 2.

From the results of model (1), we can see that the asset-liability ratio of transnational enterprises in China has a significant negative correlation with the investment rate of overseas investment projects. The regression results validate hypothesis 1, that is, the higher the asset-liability ratio, the lower the investment scale of overseas investment projects. It shows that the effect of over-investment caused by the debt analyzed before is weaker than that caused by risk aversion behavior under the balance of interests between creditors (commercial banks) and enterprise managers. It also further illustrates the role of the two stakeholders in promoting the balanced interests of the capital structure optimization.

Table 2. results

	Model(1)	Model(2)	Model(3)	Model(4)	Excluded variables
c	10.072***	10.377***	10.489***	10.569***	10.069***
Deb?	-0.027***	-0.032***	-0.033***	-0.032***	-0.027***
Tq?		-0.032	-0.001	-0.001	
Ad?			-0.011**	-0.011**	-0.008*
d?				-0.095	
Cross-section	Fixed	Fixed	Fixed	Fixed	Fixed
Period	Fixed	Fixed	Fixed	Fixed	Fixed
F-statistic	3.419***	3.240***	3.517***	3.460***	3.755***
Debj-R ²	0.527	0.5293	0.558	0.555	0.561

***, **, and * denote statistical significance at the 1 %, 5 %, and 10 % level.

From the regression results of model (2), we can see that the investment opportunities of transnational enterprises in China have no significant response to investment. That is to say, the investment efficiency of transnational enterprises in Chinese listed companies is not high. It further shows that the sensitivity of overseas investment of enterprises to financing constraints is higher than that of investment opportunities. It also shows that the policy of home countries, especially the impact of financing environment, is better than that of East. The investment opportunities promoted by the policies of the Taoist government have a significant impact on the overseas investment of multinational enterprises. Thus, it further illustrates that the equilibrium state of game between home government and host government can realize the optimization of enterprise capital structure and the improvement of investment efficiency.

From the regression results of model (3), we can see that the cost of capital restructuring of Chinese multinational companies is negatively correlated with investment. That is to say, hypothesis 3 is verified, that is, the lower the cost of capital restructuring of transnational enterprises in Chinese listed companies, the larger the scale of overseas investment, which further illustrates the sensitivity of enterprises' overseas investment to financing constraints. When multinational enterprises face overseas investment, they will adjust their financing choices, and then adjust their financing structure. The process of overseas investment is also a process of adjustment and optimization of financing structure. This is because enterprises balance various stakeholder relationships through overseas investment, so as to change the deviation of their actual capital structure from the target capital structure.

From the regression results of model (4), it can be seen that the parameter estimation of virtual variables of state-owned enterprise attributes is not significant. It shows that the administrative intervention brought by state-owned equity will distort the optimal allocation of resources in overseas investment is not significant, that is to say, it verifies hypothesis 4. State-owned Transnational Enterprises are subjected to the dual game between host country and home country, which weakens the negative hand effect of the predatory attributes of state-owned enterprises. At the same time, there is no difference between State-owned Transnational Enterprises and non-State-owned Transnational Enterprises in the impact of the capital structure of Chinese multinational companies on overseas investment, which contradicts the conclusion that the efficiency of state-owned enterprises investment is lower than that of non-state-owned enterprises in most previous literature studies, and that the financing dependence and restriction of state-owned enterprises have a significant impact on investment, and also illustrates the characteristics of overseas investment. It further proves that the feasible way to expand overseas investment and optimize the overseas decision-making of State-owned Transnational Enterprises is to optimize the capital structure.

5. Conclusion

This paper mainly studies the relationship between the financing structure of State-owned Transnational Enterprises and the scale of transnational investment, and further analyses the efficiency of transnational investment of State-owned Transnational Enterprises and the impact of

state-owned attributes on these relationships. The main purpose is to verify that the State-owned Transnational Enterprises can adjust the scale of overseas investment projects and improve the efficiency through the change of external financing.

The main conclusion confirms that the efficiency of transnational investment of Chinese transnational enterprises (whether state-owned or not) is not high, which further shows that the sensitivity of overseas investment of enterprises to financing constraints is higher than that of investment opportunities; moreover, the lower the cost of capital restructuring, the larger the scale of overseas investment, which further illustrates the sensitivity of enterprises' transnational investment to financing constraints; and State-owned Transnational Enterprises are subjected to the dual game between host country and home country, which weakens the negative hand effect of state-owned enterprise attributes.

Chinese State-owned Transnational Enterprises adjust their capital structure through the change of financing mode and financing proportion, and ultimately affect the scale and efficiency of transnational investment. Therefore, from the Government's Perspective, we need to ensure the normal financing channels and the high quality of financing environment. At the same time, we can indirectly influence the investment decision-making of State-owned Transnational Enterprises according to the policy adjustment role of capital market, instead of directly interfering with the investment efficiency. From the perspective of external financing, although the bond market has made great progress, it is still not perfect and open enough, leading to enterprises cannot make full use of the tax shield effect of debt to optimize their capital structure, and it is also difficult to effectively improve the efficiency of transnational investment. Therefore, we should further speed up the construction of China's bond market. Finally, the reform of state-owned enterprises needs to be further deepened, so as to give full play to the camera governance effect of debt and improve the ability to regulate transnational investment.

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