

Empirical Analysis on the Factors Affecting the Location Choice of China's FDI

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Abstract: As the main way to participate in the international division of labor and the opening up to the outside world, international direct investment is an important link to maintain the development of the world economy. With the rapid development of economy, China's foreign direct investment (FDI) has gone through the stages of germination, take-off and rapid development. At present, the scale of China's outward direct investment (ODI) is continuously expanding, the main investors are increasingly diversified, and the net ODI is increasing year by year. Location choice is an important factor affecting China's foreign direct investment.

1. Introduction

The concept of OFDI comes from the category of international direct investment. According to the flow direction of international capital and from the perspective of the investing country, international direct investment is called FDI or FDI outflow(Outward Foreign Direct Investment); From the perspective of recipient country, international direct investment is called foreign direct investment(Inward Foreign Direct Investment).OFDI refers to the investment made by investors directly in establishing and operating enterprises in foreign countries. It is also a means of international investment. Outward direct investment can be divided into:

(1) Participate in capital, only participate in a small amount of investment, do not participate in the operation, when necessary, also send technical personnel and consultants as guidance.

(2) Establish a joint venture. Both parties shall jointly invest and send representative personnel to participate in the operation. At present, in order to protect their own interests, some developing countries have legislated restrictions on the proportion of foreign capital in joint ventures.

(3) Buy existing enterprises.

(4) The establishment of a subsidiary (or branch), funded by the head office, in accordance with local laws to set up an independent business. OFDI is generally manifested as that investors export capital, directly set up factories and branch stores in foreign countries, or buy local original enterprises, or cooperate with local governments, organizations and private enterprises to obtain the right to operate enterprises directly.

FDI is widely accepted because it helps the recipient countries to solve their financial difficulties, introduce advanced technologies, expand export trade and increase employment opportunities. At present, in order to promote their own economic development, most countries in the world adopt open policies to absorb foreign direct investment, and pay attention to formulate corresponding policies and laws to protect national rights and interests. With the rapid development of economy, China's foreign direct investment (FDI) has gone through the stages of germination, take-off and rapid development. At present, the scale of China's OFDI is continuously expanding, the investment subjects are increasingly diversified, and the net OFDI is increasing year by year. In addition, the implementation of China's One Belt And One Road strategy provides a new opportunity for the development of OFDI. Among them, location selection is the primary problem for OFDI, which directly affects the play of the advantages of investment enterprises, and then affects the profit and success of the investment activities of enterprises in the investing country.

2. Theoretical model construction

Since the 1960 s, American scholar hammer with monopoly advantage theory, the economists from the theory of international trade on the basis of explanation of FDI, or from the difference of factor endowments to analyze the investment behavior of multinational corporations, and in view of the enterprise in the location choice of FDI activities less comparison, the lack of a general FDI location selection theory to explain the factors of location selection of direct investment by transnational corporations. Combining with the research results of xiang benwu, a famous Chinese scholar, he believes that the location selection of FDI in Chinese enterprises is mainly affected by the host country's GDP, market size, exchange rate level, per capita GDP and other factors. Based on the theoretical research of scholars, this paper selects factors and variables that may have an impact on the location selection of direct investment of transnational corporations in China, establishes a cross-section data model and makes an empirical analysis of the assumptions, and explains the role of factors affecting FDI in statistical and economic sense.

3. Data source and description

3.1 Data sources

The data used in this paper are from the statistical bulletin of China's outbound direct investment in 2017. The current direct investment flow (DIA) from China to the host country was selected as the explained variable, and 10 countries including the United States, Indonesia, the United Kingdom, Australia, Russia, Thailand, Vietnam, South Africa, Germany and Singapore were selected as samples for analysis in 2017.

3.2 Variable description

Five explanatory variables were selected, and it was assumed that these five variables had a significant impact on DIA. A cross-section data model was established with 2017 as the sample period.

a) The gross national product of the host country (GDP, unit: millions of us dollars), the gross national product is the market value of all final products produced by a country or region in a certain period of time.

b) Per capita disposable income of the host country (GNIP, unit: us \$), per capita disposable income is the total amount of residents' disposable income that can be used for final consumption expenditure and savings, that is, residents' disposable income.

c) Current exchange rate of host country (EXCH, unit: currency of host country/us dollar), current exchange rate

d) China's current export volume to the host country (EXPO, unit: usd 100 million), the current export volume refers to the total value of commodities exported from China to foreign countries in the current period

Table 1 Five items of data from ten countries(DIA, GDP, GNIP, EXCH, EXPO)

Country	DIA	GDP	GNIP	EXCH	EXPO
Singapore	631990	323902	53224.27	0.725304	453.7
America	642549	19390600	55904.3	1	5076
Germany	271585	3684816	41267.31	1.143954	817.7
Australia	424196	1379548	51641.63	0.769057	491.5
Russia	154842	1527469	8447.42	0.016858	428.76
British	206630	2624529	44117.8	1.301134	567.18
Indonesia	168225	1015411	3415.83	0.000075	357.6
Vietnam	76440	220408	2170.88	0.000044	585
Thailand	105759	455378	5426.3	0.029443	447.3
South Africa	31736	349299	5783.5	0.076883	152.4

4. Estimate and test the model

4.1 Variable notation

Table 2 factors influencing current direct investment flows (DIA) from China to the host country

variable	indicators
GDP	Host country GNP (millions of us dollars)
GNIP	Per capita disposable income of host country (us dollar)
EXCH	Current exchange rate of the host country (one currency of the host country/one us dollar)
EXPO	China's current export to the host country (usd 100 million)
UR	Current unemployment rate of the host country

4.2 Model estimation and test

a) Model estimation

Table 3. model estimation results

Explained variable: current direct investment flow from China to host country (DIA)	Number of samples 10			
	Coefficient estimate	standard error value	T value	P value
Gross national product of the host country	0.004	0.0435	0.085	0.932
Per capita disposable income in the host country	14.145	2.705	5.229	0.006
Current exchange rate of host country	-363985.3	135480.3	-2.687	0.055
China's current exports to the host country	18.113	171.083	0.106	0.925
Current unemployment rate of the host country	-333840.5	358247.6	-0.932	0.404
F =415.56, P=0.01				

$$DIA=63023.53+0.003712GDP+14.14554GNIP-3639.85EXCH+18.11321EXPO-333840.5UR$$

$$R^2=0.954565 \quad F=16.80748$$

Thus, the goodness of fit of the model is 0.954565, and the F statistic is 16.80748. The model fits well and the regression equation is significant on the whole. However, when $\alpha=0.1$, the coefficient t test of GDP, EXPO and UR is not significant, indicating that there may be a multicollinearity.

b) Model test

Through the b-p test, the p-value is more than 10%, which proves that the equation has no heteroscedasticity.

Through the establishment of correlation coefficient matrix, it is found that the correlation coefficient between each explanatory variable is relatively high, especially between GDP and EXPO, GNIP and EXCH, and the correlation coefficient is above 0.8, which indicates the existence of multicollinearity in the model.

c) Multicollinearity correction

The step by regression method is used to test and solve the multicollinearity problem. The one-dimensional regression of DIA for GDP, EXPO, EXCH, UR and GNIP is made respectively. The regression results are as follows:

Table 3: regression results of DIA on GDP, EXPO, EXCH, GNIP and UR

variable	GDP	EXCH	EXPO	GNIP	UR
Parameter estimate	0.023	250046.6	92.005	8.092	-1054815
T statistic	2.068	2.131	2.163	4.88	-1.12
R^2	0.348	0.362	0.369	0.749	0.135
\bar{R}^2	0.267	0.282	0.290	0.717	0.027

Among them, GNIP has the largest degree of goodness of fit, so GNIP is used as the basis to add other variables step by step regression.

In the same way, other variables are added to GNIP for regression. After multiple regression, GDP and UR are eliminated, and the revised regression result is: 0.914719, indicating that the regression has a good fitting degree.

F value is 33.17794, indicating that the whole equation is significant.

The t values of the slope coefficients are all greater than the t statistics, and the t test is significant.

5. Conclusions and recommendations

5.1 Statistical significance analysis

The first slope coefficient of 14.32820 indicates that the per capita disposable income of the host country has a direct positive correlation with the direct investment from China. In other words, for every US \$1 increase in the per capita disposable income of the host country, the direct investment from China to the host country increases by us \$143,200.

The second slope coefficient 33.55437 indicates that China's exports to that country in the current period are positively correlated with China's direct investment in that country. That is, for every US \$100 million of Chinese exports to that country in the current period, China's direct investment in that country increases by us \$335,400.

The third slope coefficient -357059.5 indicates that the current exchange rate of the host country is directly negatively correlated with China's direct investment in the host country. In other words, for every 0.01 percentage point increase in the current exchange rate of the host country, China's direct investment in the host country will decrease by us \$35705900.

5.2 Analysis of economic significance

GNIP and the relationship between the DIA show that people's living standard and foreign direct investment is positive causal relationship between residents' disposable income growth is the basis of expanding domestic demand and the safeguard, the increase of the per capita disposable income, means the residents in the end the expansion of consumer demand, this will expand the scale of the country's market, bring the increase of foreign direct investment in the country.

The relationship between EXPO and DIA indicates that the relationship between exports and OFDI is a promoting one. In fact, in previous scholars' studies, FDI is used to maintain and expand the existing market. For example, export and FDI complement each other, which is a major strategy to occupy the foreign market. In developing countries, foreign direct enterprises are easier to export than local enterprises. China's export to the host country is conducive to the accumulation of investors' understanding of the host country, especially about the host country's market, and plays a positive role in promoting China's direct investment in the host country.

The relationship between EXCH and DIA shows that there is a reaction between the exchange rate and OFDI. When other factors remain unchanged, the appreciation of the host country's currency will reduce the production cost of the country to the host country, especially the labor cost, and such cost reduction will increase the return on capital of FDI, thus promoting the inflow of FDI.

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