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Performance Evaluation of OFDI of Chinese Listed Enterprises

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***Abstract*—** *Based on the foreign direct investment practice of 157 Chinese listed enterprises from 2010 to 2019, an enterprise OFDI performance comprehensive evaluation index system composed of investment status, operation effectiveness and growth potential is constructed. It is found that the OFDI performance of Chinese listed enterprises generally shows an "M" change trend. It reaches the highest performance point of foreign direct investment in 2013 and 2017 respectively; Among them, the OFDI performance of state-owned enterprises fluctuated from 2010 to 2013 and gradually decreased after 2013, but it was always better than that of non-state-owned enterprises before 2017; The OFDI performance of enterprises that adopting M&A investment is consistent with the overall performance of OFDI. It is significantly better than that of green space investment.*

Keywords*—Investment type: Listed enterprises: Nature of ownership: OFDI performance*.

I. INTRODUCTION

China's foreign direct investment started since the implement of the reform and opening up. China is on the fast lane of the process of OFDI. In fact, many countries hope to build trade relations with China because of the "Belt and Road". China's foreign direct investment flow has rapidly climbed from 55.91 billion dollar in 2008 to 136.91 billion dollar in 2019, taking the second place in the world and ranking among the largest foreign direct investment countries. Although the total outflow of global foreign direct investment shrank in 2019, China's foreign non-financial investment flow still maintained a growth trend as well as the stock of foreign direct investment 2198.88 billion dollar. At the same time, the location and industry of Chinese enterprises' foreign investment is gradually diversified.

The performance of enterprises' foreign direct investment has always been an important topic in the academic field. The evaluation of foreign direct investment performance should not only focus on the consideration of enterprise financial and operational indicators, but also the evaluation of enterprise competitiveness, development potential and other indicators. This paper conducts a comprehensive evaluation of the performance of foreign direct investment of Chinese listed enterprises based on three dimensions of investment status, operation effectiveness and growth potential.

II. LITERATURE REVIEW

A. Enterprise OFDI Performance

Some domestic and foreign scholars focus on the macro impact of OFDI on economic growth, industrial structure upgrading, trade, technological progress and employment. Additionally, the micro level researches mainly focus on the business performance of enterprises that participate in foreign direct investment. Beamish① and Lenn② studied the OFDI performance of enterprises in Europe and the United States. They believe that the degree of internationalization has a positive impact on the business performance of enterprises but its marginal return is decreasing. Collins③ and siddharthan④ found that OFDI has a negative impact on the improvement of business performance. Gazaniol ⑤ studied the operating performance of French enterprises that participated in OFDI and found that foreign direct investment was able to improve the operating conditions of local French joint ventures. Ye Jiao⑥ proved that the foreign investment of enterprises has promoting effects on the total factor productivity of enterprises. Liu Xiaodan ⑦ discussed the impact of heterogeneous OFDI on enterprises performance.

B. Enterprise OFDI Performance Measurement

At present, scholars generally use the Event Study Method and Accounting Target Method to study the performance in the literature. Some scholars use Propensity Score Matching (PSM), Data Envelopment Analysis (DEA) and Theory of Factor Analysis to study the performance of foreign direct investment.

Du Xiaojun⑧ used the Event Study Method to draw the conclusion that China's OFDI performance was in a period of shock adjustment during the investigation period. Hu Ning⑨ analyzed listed aquatic products processing companies through the Event Study Method and came to the conclusion that overseas investment events have a significant positive impact on stock prices.

Healy⑩ adopted the Accounting Target Method to obtain the conclusion that overseas investment has significantly improved the return on equity of the enterprises. Nitsch⑪ analyzed the maturity OFDI performance of 300 Japanese enterprises distributed in Europe through Accounting Target Method and concluded that OFDI performance was not satisfactory. Lin Sha⑫ used the Accounting Target Method to analyze the financial performance of Chinese enterprises which participated OFDI from 2002 to 2005 and found that the operating performance of Chinese enterprises increased first and then decreased.

Gazaniol⑤ used PSM to study the business performance of French enterprises OFDI. Li Qianqiang ⑬ takes China's A-share listed companies from 2011 to 2015 as the analysis object, applying PSM to find that cross-border M&A of

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Chinese listed companies cannot improve but reduce the business performance of enterprises generally. Yang Ji[14] took the A-share listed companies with foreign direct investment from 2013 to 2017 as a sample and used PSM-DID to study the impact of foreign direct investment on enterprises performance.

Some scholars began to explore the multi-latitude performance evaluation system of enterprises OFDI. Globerman[15] and others believe that the performance of enterprises' foreign direct investment should be measured by indicators such as employment, wages, R&D expenditure, trade and tax in the home country. Yeung[16] believes that the OFDI performance of Chinese enterprises should be investigated from the indicators of the host country and the home country. Ban Bo[17] built an enterprise OFDI performance evaluation system, which included financial and non-financial performance. Wen Ning[18] constructed a performance evaluation system for enterprises' foreign direct investment by investigating the OFDI motivation and investment risk of small and medium-sized enterprises. Zhao Wennan, Jin Jiao[19] used principal component analysis to construct an evaluation index system, including activity, growth factor, number of cases factor and investment amount factor. Xu Xinhua[20] evaluated the performance of enterprises' foreign direct investment from the individual level and the overall level. Guan Huiming, Liu Ligang [21] constructed the OFDI performance evaluation system from the four dimensions of profitability, debt service level, operation level and development potential.

Most of the evaluation indicators of the existing foreign direct investment performance evaluation system relate to the financial performance of enterprises, which can only reflect the OFDI performance of enterprises in the short term. In fact, evaluating the foreign direct investment performance of enterprises from the perspective of long-term and development is necessary as OFDI has an impact on the degree of internationalization and R&D investment of enterprises. Based on the long-term and development perspective, this study takes into account the enterprise's internal control level, internationalization level, R&D investment and other indicators to build a more sound OFDI performance evaluation system.

III. Construction of Enterprise OFDI Performance Evaluation Index System

A. Determine Evaluation Indicators

1. Investment status

The investment status reflects the characteristics of the enterprise's foreign direct investment event itself, including both the scale of investment and the location of investment (see Table I). On the one hand, enterprises with large scale of foreign direct investment and high proportion of shares bear relatively high costs and risks. On the other hand, it is also easier to help enterprises open new markets in the early stage and obtain economies of scale. Enterprise investment location mainly reflects the ability of enterprises to deal with the risks caused by the uncertainty of overseas market when conducting OFDI. When enterprises first enter the overseas market, they often suffer losses because they are not familiar with local laws, regulations and customs. A short cultural distance will enable enterprises to adapt to the local market faster and reduce risks and costs. Herfindahl-Hirschman Index (HHI) can truly reflect the size gap between enterprises in the market as well as reflect the change of enterprise dominance to a certain extent. This paper uses HHI index to reflect the market concentration of enterprises.

2. Operational effectiveness

Operational effectiveness reflects the ability of an enterprise to obtain profits, expand the market and maintain its own survival stability in the process of production and operation, which can be reflected from the profitability and solvency of the enterprise (see Table I). In the process of OFDI, enterprises are mainly to expand overseas markets as well as integrate domestic and foreign resources to maximize profits. In the process of overseas market expansion, enterprises face greater risk costs and greater debt repayment pressure. In this paper, the return on net assets is used to reflect the ability of enterprises to obtain profits from their production experience, and the year-on-year growth rate of operating profits is used to reflect the ability of enterprises to expand overseas markets. Equity multiplier and asset liability ratio are used to reflect the solvency and solvency pressure of enterprises.

3. Growth potential

The growth potential of an enterprise reflects its comprehensive competitiveness and long-term development prospects, including its competitiveness and development capacity (see Table I). The enterprise internal control index can not only reflect the realization degree of the five objectives of enterprise internal control compliance, reporting, asset safety, operation and strategy, but also reflect the healthy and stable degree of enterprise internal operation. To some extent, the internationalization level reflects the ability of enterprises to adapt to overseas markets and deal with the risks and costs brought by cultural differences. The ratio of R&D to revenue and the growth rate of R&D investment can reflect the importance of enterprises to improve their core competitiveness. For enterprises, higher internal control index, internationalization level and R & D investment means greater growth potential. See Table I.

TABLE I. Enterprise OFDI Performance Evaluation Index System.

Enterprise OFDI performance evaluation index system.		
Primary index	**Secondary index**	**Observation index**
Investment status	Investment scale	Investment amount
		Share proportion
	Investment location	Market concentration (HHI)
		Cultural distance
Operational effectiveness	Profitability	Return on net assets (ROE)
		growth rate of operating profit
	Solvency	Equity multiplier
		Asset liability ratio
Growth potential	competitive power	Internal control index
		Internationalization level (FSTS)
	Development capacity	R & D / operating income
		Growth rate of R & D investment

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IV. OFDI Performance Evaluation of Chinese Listed Enterprises

A. Determination of Evaluation Weight

Lin Sha[12] used principal component analysis to determine the index weight; Xu Xinhua[20] adopted comprehensive weighting to determine the weight of the evaluation index system; Wen Ning[18] adopted analytic hierarchy process; As for Guan Huiming, Liu Ligang[21], the weight of each index is expressed by the proportion of the share capital of listed companies in the total share capital of all enterprises and each index is weighted average. In order to avoid the influence of subjective factors and make the evaluation results more scientific, this paper uses entropy weight TOPSIS method to calculate the index weight of enterprise OFDI performance evaluation system. It is found that the investment status, especially the investment scale, accounts for most of the evaluation of the performance of enterprises' foreign direct investment; Secondly, the growth potential of enterprises, especially the proportion of R & D investment in operating revenue, plays an important role in evaluating the performance of enterprises' OFDI.

TABLE II. Weight of OFDI Performance Evaluation Index System of Listed Enterprises

Enterprise OFDI performance evaluation index system.		
Primary index	**Secondary index**	**Observation index**
Investment status (0.8465)	Investment scale (0.8775)	Investment amount (0.8546)
		Share proportion (0.1454)
	Investment location (0.1225)	Market concentration (HHI) (0.7207)
		Cultural distance (0.2793)
Operational effectiveness (0.0112)	Profitability (0.0199)	Return on net assets (ROE) (0.6636)
		growth rate of operating profit (0.3364)
	Solvency (0.9801)	Equity multiplier (0.7782)
		Asset liability ratio (0.2218)
Growth potential (0.1423)	competitive power (0.1800)	Internal control index (0.1216)
		Internationalization level (FSTS) (0.8784)
	Development capacity (0.8200)	R & D / operating income (0.7263)
		Growth rate of R & D investment (0.2737)

B. Sample Selection and Data Sources

The research sample of this paper comes from EMIS global emerging market business information database, which contains M&A events in the world's emerging markets. In order to ensure that the research is more targeted and persuasive, this paper selects the OFDI events of Chinese enterprises of Shanghai and Shenzhen A-share listed companies from 2010 to 2019 as the analysis object. In order to ensure the objectivity and accuracy of the research results as much as possible, the samples were screened according to the following standards:

(1) Enterprises that were ST or *ST during the study period were excluded

(2) Enterprises whose listing time is later than or equal to the time of foreign direct investment are excluded

(3) Excluding related party transactions

(4) Eliminate extreme outliers

(5) Since a foreign direct investment event will have an impact on enterprise performance for a long time in the future, the early investment event will be taken into account in the later OFDI performance calculation.

The index data used to calculate the enterprise OFDI performance are from WIND database, PATSNAP global patent database and CSMAR database. Excluding the samples of listed companies with incomplete and missing data, this paper obtains 510 OFDI events from 157 enterprises.

C. Analysis of Evaluation Results

1. Overall analysis of OFDI performance of Chinese listed enterprises

From 2010 to 2019, the overall performance of OFDI of Chinese listed enterprises showed an "M" trend. Performance of OFDI in 2013 and 2017 were the two best years. Before 2013, the overseas M&A investment of Chinese listed enterprises generally showed an upward trend. From 2013 to 2015, due to the weak global economy, the overall performance of OFDI of Chinese listed companies was poor. The bold attempt of Chinese Internet enterprises to list on NASDAQ in 2014 provided a demonstration for Chinese enterprises. From 2015 to 2017, under the background of the revival of A-share blue chip and the appreciation of RMB, the performance of Chinese listed enterprises OFDI rebounded significantly. At the beginning of 2018, affected by Sino US trade frictions, Chinese enterprises had a difficult living environment. OFDI performance declined but still higher than that in 2013.

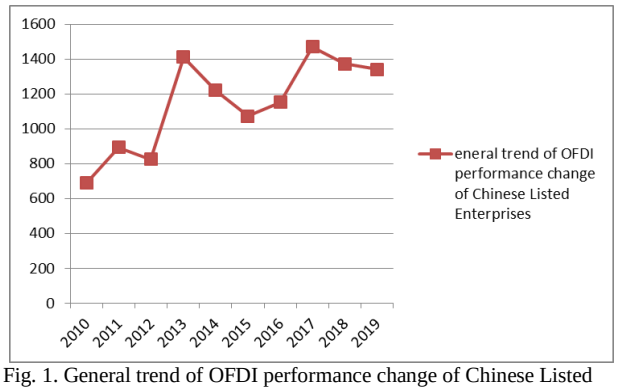

Fig. 1. General trend of OFDI performance change of Chinese Listed Enterprises

2. Differences in OFDI performance of enterprises with different ownership

Since 2013, the OFDI performance of state-owned listed enterprises has obviously begun to decline and the OFDI

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performance of non-state-owned enterprises is basically consistent with the overall performance trend. On the one hand, at the beginning of 2013, the proportion of non-state-owned enterprises continued to expand, the flow proportion of state-owned enterprises decreased to 40%. By the end of 2013, state-owned enterprises accounted for 55.2% and non-state-owned enterprises accounted for 44.8%. On the other hand, affected by the European debt economic crisis in 2012, China's economic growth slowed down.

In the process of foreign direct investment of listed companies, China's non-state-owned enterprises performed better. Especially after 2016, the foreign direct investment performance of non-state-owned enterprises exceeded that of state-owned enterprises. The reasons for this difference are as follows. Firstly, non-state-owned enterprises are more flexible and easy to reform their business strategies. Secondly, in recent years, due to preferential policies for non-state-owned enterprises, more and more non-state-owned enterprises participate in the OFDI process and play the more important role in the process of foreign direct investment. At the end of 2018, non-state-owned enterprises accounted for 52% of the non-financial foreign direct investment of $1764.37 billion.

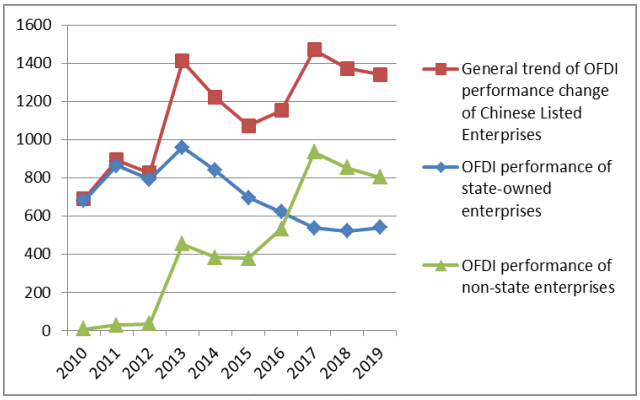

Fig. 2. Changes in OFDI performance of state-owned and non-state-owned listed enterprises

3. Differences in OFDI performance of different investment methods

The OFDI performance of Chinese listed enterprises invested by M&A is basically consistent with the overall performance, while the OFDI performance of enterprises invested by Greenland has been in a downturn. Firstly, this is due to the characteristics of green space investment and the performance evaluation method of OFDI in this paper. Green space investment means high labour power and financial costs, long construction cycle and great risk faced by enterprises. At the same time, the investment return period of green space investment is long, the rewards of green space investment has not been shown as this paper only examines the performance of enterprises' foreign direct investment in the past ten years. Additionally, green space investment needs a lot of preparatory work, the planning cycle is long, the construction speed is slow, and it has high requirements for the enterprise's own economic strength and M & A experience, which is lack of flexibility. In the process of green space investment, Chinese enterprises are prone to conflict with host country enterprises in terms of culture, laws and regulations. All these risks will be borne by home country enterprises, so there is great uncertainty. After the completion of the investment, the newly-built company needs to develop its own market locally, facing the shortage of high-quality talents in technology and management. Therefore, Chinese listed companies that adopt green investment tend to have a low level of OFDI performance.

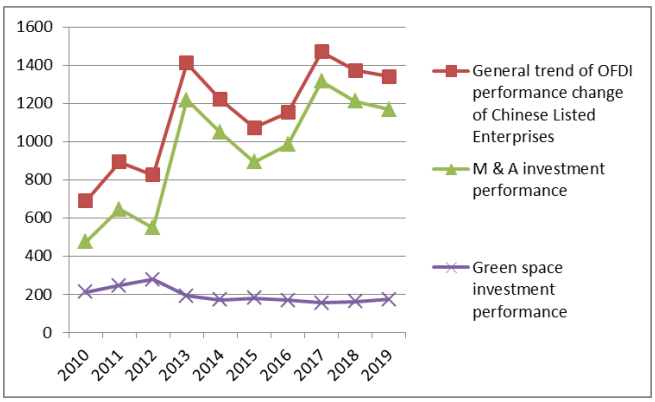

Fig. 3. Green space and M & A investment mode and changes in OFDI performance

V. Main Enlightenment

1. Select appropriate investment methods and enhance cross-cultural coordination capacity

According to the analysis and research of this paper, the scale and quantity of foreign direct investment of Chinese listed enterprises are increasing year by year but the performance of foreign direct investment does not show an upward trend year by year. This is because in the process of foreign direct investment, Chinese enterprises are prone to blindly follow the trend and misjudgment due to insufficient preliminary preparations, resulting in the reduction of the overall performance of foreign direct investment. Therefore, before making foreign direct investment, enterprises should have a clear understanding of their own situation, formulate appropriate business strategies and investment objectives in combination with the market characteristics, customs and culture, laws and regulations of the host country, then select an appropriate foreign investment scale and investment location to reduce their own risks and improve their performance level.

2. Improve the level of internal control and improve enterprises' operation ability

If enterprises want to make good use of domestic and foreign resources and develop domestic and foreign markets, they must determine the reasonable proportion of various assets, improve the utilization efficiency of various assets and avoid idleness. Additionally, they should determine the debt ratio of enterprises according to different stages of foreign direct investment to avoid excessive debt repayment pressure. Last but not least, they are supposed to cultivate professional operation talents to explore the local market as much as possible.

3. Increase R&D investment and improve the core competitiveness of enterprises

In the process of foreign direct investment, Chinese enterprises will probably be subject to investment surveys from host countries, such as CFIUS of the United States. These surveys will lead to the obstruction of China's foreign direct investment, thus affecting the performance of foreign direct investment. This requires Chinese enterprises to improve their growth potential in the process of foreign direct investment, enhance their core competitiveness by increasing R & D investment, improve their management level and legal awareness and increase new profit points.

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