

An Empirical Study on the Relationship between Foreign Direct Investment and Economic Growth in Eastern China——Based on the PVAR Model

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ABSTRACT

Over the years, the research on foreign direct investment, economic growth, and financial development has attracted a lot of attention in business studies at home and abroad. Foreign direct investment is widely considered to have an important impact on economic development. The introduction of foreign direct investment not only directly or indirectly affects the regional economic development, but also has a comprehensive impact on the regional export trade, employment, international payments and other aspects of the national economy. Taking the eastern region of China as the research object, this paper studies the relationship between foreign direct investment and regional economic growth by establishing PVAR model, in order to contribute to regional economic development.

Keywords: Foreign direct investment, Economic development, Eastern China, PVAR Model.

1. INTRODUCTION

Foreign direct investment (FDI) refers to the form of investment that obtains the management authority or control authority of a foreign enterprise. It is one of the basic forms of international capital flow. With the increasing internationalization of production, foreign direct investment has become an important channel for the host country to achieve technological progress, develop the labor market, and boost economic and financial development. Its impact mechanism and theoretical analysis on the host country have attracted the attention of many scholars and become a current research hotspot.

2. LITERATURE REVIEW

Foreign direct investment (FDI) is regarded as an important driving force force for economic development. For decades, with the development of theory and measurement technology, many scholars have put forward different views on foreign direct investment, economic growth and financial development. Next, this paper presents a literature review of the relevant theoretical and empirical research of foreign scholars.

Based on theoretical and empirical research, many scholars have found that there is a one-way or two-way

relationship between foreign direct investment and economic growth. Chakraborty and Nunnenkamp analyzed the relationship between FDI and economic gain after India's economic reforms from different sectors, and verified that the growth effect of FDI in India varies from sector to sector. Through Granger causality test, the result shows that there is a two-way causality between FDI and economic growth. And the transformation from FDI to economic income is affected by the total amount of FDI, investment type and investment structure [1]. Using the data of 28 EU countries during the 2008-2014 European economic crises, Simionescu confirmed that there has been a mutually beneficial two-way positive relationship between the two countries of 28 EU countries since the beginning of the 2008 crisis. Although different countries have different forces to absorb FDI due to regional differences, and the driving force of economic development on FDI is also different, the gap in the ability of countries to attract FDI has further narrowed over time [2]. Ojewumi and Akinlo constructed a PVAR model with data from 33 sub-Saharan African countries from 1980 to 2013. The empirical analysis results show that there is a dynamic two-way interaction between FDI and economic returns. The interaction between them ranges from 13.1% to 32.8%. The dynamic impact also confirms that the growth of FDI promotes the

growth of real GDP [3]. Lasbrey et al. confirmed the relationship between FDI and economic growth by using the data from 1980 to 2018. Although some verification results indicate that there is a negative or invalid correlation between them, the overall bias tends to have a significant positive impact. Most studies show that FDI has a one-way positive effect on the economic growth of the host country [4]. Based on the data samples of Gulf Cooperation Council countries (Saudi Arabia, United Arab Emirates, Qatar, Kuwait and Oman) from 1995 to 2017, Dkhili and Dhiab found that there is positive and significant correlation between FDI and economic growth. FDI creates positive externalities for the host country. And the trade opening of related countries can attract FDI and become a major source of economic growth [5]. Hanafy and Marktanner used data from Egyptian provinces from 1992 to 2007 and found that the impact of FDI on economic growth is not unconditional. Among them, FDI in manufacturing has no obvious impact on economic gain, FDI in agriculture has a slowing effect on economic growth, and FDI in service industries and DPI promote each other, which has an obvious positive effect on economic returns [6]. Soe used the PVAR model to study the impact of FDI on regional and sectoral economic growth in Myanmar. The empirical test shows that at the regional level, there is a two-way relationship between FDI and economic growth in investment intensive areas. FDI in non-investment-intensive areas will worsen the economy, but economic growth will still induce FDI [7]. Based on the data from 54 developed and developing countries from 1996 to 2018, Qureshi et al. studied the dynamic relationship between FDI, corruption and economic gain and found that FDI plays an important role in the economic growth of developed (developing) economies, FDI and the economic growth of developed (developing) economies have a two-way impact [8].

Based on the theoretical and empirical research, many scholars have found that there is a certain relationship between foreign direct investment and economic growth and financial development. Fauzel used the PVAR model to study the relationship and development of FDI, financial development, and economic gain in some small island economies from 1990 to 2013. The study found that foreign direct investment is an important factor for small island economies to promote economic growth and develop financial markets. Economic growth also plays a vital role in promoting financial development [9]. Majumder collected annual data from 1989 to 2015 and studied the relationship between economic growth, FDI and financial development in Bangladesh using the method of automatic decreasing distribution lag. The result shows that FDI is a key factor in determining the country's financial development. A 1% change in the ratio of FDI to GDP will lead to a 0.139% change in the ratio of domestic private sector credit to GDP [10].

Bayar and Gavriletea analyzed data across central and Eastern European countries from 1996 to 2015. FDI inflows have no causal relationship with the progress of the financial sector and have no significant impact on the short-term and long-term process of the financial sector. However, there is single track causality between the progress of the financial sector and the inflow of foreign direct investment, and its impact is significant [11]. Through the research on studied the interaction between FDI, national trade and financial progress in the BRIC countries (Russia, China, Brazil, India, South Africa, and Turkey), Sahin concluded that FDI promotes financial progress in Brazil, Russia and China and there is no causal relationship between FDI and financial development in India, South Africa, and Turkey, but financial development promotes FDI in these countries [12]. Based on India's FDI and financial development data from 1980 to 2017, Mishra found that the progress of India's financial sector (especially the banking industry and capital market) has played an important role in attracting FDI, and the substantial growth of FDI will have a significant positive impact on economic growth [13]. Based on data from the 10 contracting states of the West African Economic Community from 1970 to 2017, Keho found a two-way causal relationship between financial progress and short-term economic returns, as well as between money supply and foreign direct investment. In the long run, economic growth will trigger FDI and money supply [14].

In China, the research on foreign direct investment and economic development has also gained popularity among many scholars. Specifically, many scholars have changed their perspectives and started to study the relationship between regional foreign direct investment and regional economic development. Di conducted an empirical study using the data of Yunnan Province from 1986 to 2014. According to the data model, it is found that the FDI plays a strong role in promoting the economy of Yunnan Province, and its influence is becoming more and more prominent. For every 1% increase in FDI, the GDP of Yunnan Province will rise by 0.47%. The effect of FDI on the economy of Yunnan Province is very significant [15]. Le analyzed the data of FDI, output value of foreign invested industrial enterprises and regional GDP of Hubei Province from 2000 to 2013. It is found that there is a certain gap between the ability of Hubei Province to attract FDI and the average level of China, but the entry of FDI is beneficial and necessary for the economic development of Hubei Province [16]. Lai and Han used the actual utilization of FDI and regional GDP of Xinjiang Uygur Autonomous Region from 1985 to 2016 as data resources. Through empirical research, they found that there is a long period and stable relationship between FDI and regional GDP in Xinjiang, and there is a two-way causal relationship between them. FDI plays a good role in promoting regional economic development in the

short term, but the economic growth of Xinjiang plays a greater role in promoting the growth of regional FDI [17]. Zhu and Miao constructed a VAR model based on the annual data of Anhui Province from 1998 to 2017. The empirical evidence shows that FDI has a positive effect on economic growth and there is a long-term balanced relationship between them. At the same time, the impact of FDI on GDP is one-way [18]. Yu and Liu used the VAR model to describe the correlation between import and export trade, FDI and GDP in Shenzhen from 1979 to 2018, and then analyze the impact of import and export trade and FDI on economic growth. The results show that there is a long period equilibrium relationship among FDI, import and export trade and GDP. Import and export trade plays a positive role in promoting Shenzhen's economic growth, and FDI has a certain response to Shenzhen's economic development [19].

Many scholars have introduced multiple variables to study the relationship between foreign direct investment, economic growth and other factors. Lei and Chen empirically analyzed China's inter-provincial panel data from 1987 to 2010, and test the relationship between FDI, exports and economic growth. The research shows that there is a two-way causal relationship between FDI, exports and economic growth, but the causal relationship between different provinces is heterogeneous. FDI in the twelve provinces and regions in central and western China helps to promote regional economic growth, but the reverse promotion effect of economic growth on FDI is not obvious [20]. After analyzing the relationship between FDI, foreign trade and economic growth in 29 provinces (municipalities and autonomous regions) in China from 1991 to 2012, Zhu and Pu considered that there is a long-term equilibrium of two-to-two co-integration among the three and each pair is a positive promotion to each other. In the long run, there is a one-way causal relationship between economic growth, FDI and foreign trade. In the short term, the three are mutually causal [21]. Shen and Yu selected panel data of 27 provinces in China from 1995 to 2012 to study the dynamic relationship between FDI, economic growth and carbon emissions. The research shows that FDI is the inducement of carbon emission, economic growth and carbon emission are mutually causal, FDI is the inducement of economic growth and shows a one-way promoting effect [22]. Based on the provincial panel data of China from 1998 to 2013, Ye and Zheng analyzed the time transmission process of economic growth, FDI and environmental pollution, and found that the three affect each other. Economic growth, FDI effect and pollution effects of economic growth all have obvious regional characteristics. The economic growth impact of major economic provinces will have a positive impact on FDI, and the investment growth of major FDI provinces has a long-term effect on the economy [23]. Using panel data

of 43 countries along the "Belt and Road" from 1995 to 2014, Wang concluded that both FDI and carbon emissions have promoted the economic growth of countries along the route [24]. Cao conducted an empirical analysis using the data sets of 30 provinces in China from 2007 to 2018 and found that FDI first inhibited economic progress and then promoted green economic development. Different technological innovations play a mediating role in FDI and green economy [25].

Taken as a whole scholar at home and abroad have conducted a lot of research on foreign direct investment, economic growth and financial development, and achieved many empirical results. However, most studies focus on related topics in different countries or provinces and cities, and there is a relative dearth of empirical research on Eastern China. To arrive at a more complete explanation of FDI on Eastern China, further study is essential. Therefore, taking Eastern China as the research object, this paper studies the connection in foreign direct investment and regional economic growth through the PVAR model, in order to contribute to the regional economic development.

3. CONCLUSION

Comprehensive literature analysis, previous studies on the relationship between foreign direct investment and economic growth show that there is a certain correlation between them to a great extent. Most of the existing literature indicates that FDI and economic growth have a correlation with one or two periods. Most literature posit that the influence of the two constructs is positive, rarely restricted by other factors such as the policy region, and the influence on both parties is negative or ineffective. This paper studies and finds the correlation between them through the PVAR model.

REFERENCES

- [1] C. Chakraborty and P. Nunnenkamp, "Economic Reforms, FDI, and Economic Growth in India-A Sector Level Analysis," *World Development*, vol.36, pp.1192-1212, 2008.
- [2] M. Simionescu, "The Relation between Economic Growth and Foreign Direct Investment during the Economic Crisis in the European Union," *Journal of Economics and Business*, vol.34, pp.187-213, 2016.
- [3] S.J. Ojewumi and A.E. Akinlo, "Foreign Direct Investment, Economic Growth and Environmental Quality in SubSaharan Africa: A Dynamic Model Analysis," *African Journal of Economic Review*, vol.v, issue I, pp.48-68, 2017.
- [4] A. Lasbrey. et al., "Foreign Direct Investment and Economic Growth: Literature from 1980 to

- 2018,"International Journal of Economics and Financial Issues,vol.8, Issue 5, pp.309-318, 2018.
- [5] H. Dkhili and L. Dhiab, "The Relationship between Economic Freedom and FDI versus Economic Growth: Evidence from the GCC Countries,"*Journal of Risk and Financial Management*, vol.11, Issue 4, pp.1-17, 2018.
- [6] S. Hanafy and M. Marktanner, "Sectoral FDI, absorptive capacity and economic growth – empirical evidence from Egyptian governorates,"*The Journal of International Trade and Economic Development*, vol.28, pp.57-81, 2019.
- [7] T. M. Soe, "Economic Effects of Inward Foreign Direct Investment in Myanmar," *Bulletin of Applied Economics*, vol.7, pp.175-190, 2020.
- [8] F. Qureshi. et al., "Revisiting the nexus among foreign direct investment, corruption and growth in developing and developed markets,"*Borsa Istanbul Review*,vol.21, pp.80-90, 2021.
- [9] S. Fauzel, "Modeling the Relationship between FDI and Financial Development in Small Island Economies: A PVAR Approach,"*Theoretical Economics Letters*, vol.6, pp.367-375, 2016.
- [10] M. Majumder, "Economic Growth, Foreign Direct Investment and Financial Development in Bangladesh: A Time Series,"*Proceeding of the 5th International Conference on Management and Muamalah 2018*, pp.42-50, 2008.
- [11] Y. Bayar and M. D. Gavriletea, "International Journal of Financial Studies Article Foreign Direct Investment Inflows and Financial Development in Central and Eastern European Union Countries: A Panel Cointegration and Causality,"*International Journal of Financial Studies Article*, vol.6, pp.113, 2018.
- [12] S. Sahin, "Foreign Direct Investment, International Trade and Financial Development in BRICS-T Countries: A Bootstrap Panel Causality Analysis,"*Business and Economics Research Journal*, vol.9, pp.306-316, 2018.
- [13] P. K. Mishra and S. K. Mishra, "Foreign Direct Investment and Financial Development in India" *Indian Journal of Applied Economics and Business*, vol.1, pp.21-33, 2019.
- [14] Y. Keho, "Linkages between Foreign Direct Investment and Financial Development: Evidence from West African Countries,"*Journal of Applied Finance and Banking*, vol.10, pp.57-75, 2020.
- [15] Q. Di, "An Analysis of the Effect of FDI on the Economic Development of Yunnan Province,"*Economic Research Guide*, vol.30, pp.58-61, 2016.
- [16] K. Le, "An Empirical Study of FDI and Economic Growth in Hubei Province,"*Cooperative Economy and Technology*, vol.7x, pp.76-77, 2018.
- [17] M. V. Lai and Y. Han, "An Empirical Analysis of FDI on the Economic Growth in the Core Area of the "Silk Road" Economic Belt,"*Journal Of Shaoxing University*,vol.39, pp.93-97, 2019.
- [18] J. M. Zhu and Y. Miao, "An Empirical Analysis Based on VAR Anhui FDI and Import and Export Trade's Impact on Economic Growth,"*Journal of University of Science and Technology Liaoning*, vol.42, pp.154-160, 2019.
- [19] J. X. Yu and L. M. Liu, "An Empirical Study on the Impact of FDI and Import and Export Trade on Economic Growth: Taking Shenzhen as an Example,"*Technology Entrepreneurship Monthly*, vol.5, pp. 17 - 25, 2020.
- [20] X. Lei and J. Y. Chen, "FDI, Exports and Regional Economic Growth: Application of "Granger" Causality Test of Heterogeneous Panel,"*Economic Management*, vol.34, pp. 10 - 20, 2012.
- [21] X. P. Zhu and K. X. Pu, "Discussion on the Interaction of Foreign Direct Investment, Foreign Trade and China's Economic Growth,"*Business Economics Research*, vol.5, pp. 52-54, 2015.
- [22] Y. C. Shen and H. Y. Yu, "Research on the dynamic relationship between FDI, economic growth and carbon emissions,"*Journal of Nanjing University of Aeronautics and Astronautics (Social Sciences)*, vol.17, pp. 21-28, 2015.
- [23] A. Z. Ye and W. J. Zheng, "Research on the Spatio-temporal Conduction Effect of Economic Growth, FDI and Environmental Pollution-Based on the Analysis of Semi-parametric Spatial Panel VAR Model,"*Soft science*, vol.30, pp. 17-21, 2016.
- [24] Z. Wang, "FDI, Carbon Emissions and Economic Growth—An Empirical Analysis Based on the Panel ARDL Model of Countries along the "Belt and Road","*Journal of Shijiazhuang Tiedao University (Social Science Edition)*, vol.14, pp.17-26, 2020.
- [25] Y. X. Cao, "FDI, technological Innovation and Economic Green Growth—An Empirical Study Based on the Mediation Model," *Lanzhou university*, 2020.