

Editor's Comment:

This article cannot be accepted until the conclusions are written out, not numbered like follows:

5 Conclusion

Based on the panel data of 11 coastal provinces and cities in China from 2004 to 2019, first, excluding the multicollinearity problem, using the traditional panel data self-regression model regression, second, construct global moran index (Morran's I) to judge the spatial geographic weight matrix and spatial economy geographic weight matrix, through the Hausman test and LM test, this paper selects fixed effect space model, spatial lag model to study the spatial spillover effect of foreign direct investment (FDI) on the efficiency of Marine green economy. Finally, the robustness test was conducted by changing the explanatory variables, control variables, and spatial measurement models, and finally passed the test. The conclusions were drawn are as follows:

(1) Without considering spatial factors, the increase of FDI will inhibit the improvement of the efficiency of Marine green economy to some extent, and foreign direct investment has a significant negative impact on the efficiency of Marine green economy.

(2) foreign direct investment has a positive spatial spillover effect, FDI space can improve the efficiency of Marine green economy, and more significant spillover effect under the economic geographical weight, shows that when the provinces economic and geographical correlation exist at the same time, the FDI in the region to neighboring provinces of Marine green economic efficiency have obvious effect.

(3) whether considering space effect, Marine science and technology investment, Marine scientific research development level, port activity, regional economic development level of Marine green economic efficiency has significant negative effect, that the increase of the above four indicators will not drive the improvement of Marine environment, it will inhibit the efficient development of Marine green economy.

(4) The scale of Marine economy and Marine industrial structure have a positive and significant effect on the efficiency of Marine economy, indicating that the larger the scale of Marine economy, the more investment for the Marine environment management, the better the development degree of Marine economy; similarly, the more reasonable the Marine industrial structure, the lower the proportion of high Marine pollution industries, the higher the greening degree of Marine economy.

The results show that the coastal areas of Marine green economic efficiency to further improve, "development of Marine economy, protect Marine ecological environment, speed up the construction of Marine power", "carry out green development concept", "explore ecological priority" and other national

strategy, is now and even a long period of Marine economy development scientific guidance. In the context of the new normal of the Marine economy, to achieve the simultaneous development of the Marine economy and ecological environment protection, we must adhere to the innovation-driven high-quality development of the Marine economy. The following suggestions will be made here:

(1) In the macro-Marine economic management level. National and provincial and local governments should give full play to their macro-control and governance roles, and formulate and improve the overall plans and policies for green Marine development. The specific approach is as follows, We will improve the linkage mechanism between regional Marine resources development and Marine management, Integrating the concept of ecological protection into the development model of Marine green economy, Give full play to the function of Marine regional collaborative innovation development; From the current situation of the resources in the coastal provinces, To draw the red line for Marine ecological protection, Strictly define the intensity and timing of Marine development, Improve the input-output efficiency of the coastline and sea areas, With a scientific Marine resource management system, To promote green development of the Marine economy and improve the environment, Maintaining Marine ecological security; in addition, To strengthen the legislative awareness of Marine ecology, Improving Marine laws and regulations, We will improve the planning system for Marine economic development, With the high-level legal system to ensure the green and high-quality development of the Marine economy.

(2) In the regional Marine economy development level. We should encourage the three major Marine economic circles around the Bohai Rim, the Yangtze River Delta and the Pearl River Delta to help each other and reduce the differences in the efficiency of Marine green economy among regions. Promote the flow and transfer of high level areas of Marine green economy to the middle and low level areas, so as to expand the scale of Marine industry in the area of middle and low level; take the opportunity, give full play to the leading role of the area of Marine green economy to participate in the domestic and foreign scientific and technological cooperation, vigorously develop Marine emerging industries and high-tech industries, effectively improve the Marine ecological environment, strengthen the exchanges and cooperation with neighboring Marine provinces, and make a "chess game" of green and high-quality development of regional Marine economy.

(3) Optimization and coordination of the Marine industry. We should rationally locate the key direction of the development of Marine economy in each province, actively promote the construction of Marine carrier, scientifically, determine the development sequence of Marine industry, develop the emerging strategic industries with low resource consumption and high technology content, build the modern Marine system through the optimization and upgrading of Marine industrial structure, improve the green economic efficiency; accelerate the development direction, strengthen the supporting role of science and technology in the Marine secondary industry, firmly grasp the scale and level of Marine tertiary industry, not only focus on the increase of the proportion.

(4) In improving the level of Marine technical support level. It is necessary to actively create a good environment for Marine science and technology innovation, improve the allocation ability of Marine green economic resources, guide new Marine science and technology innovation subjects, introduce new management system, encourage universities, scientific research institutions and enterprises to establish

industry-university-research independent innovation teams, and build regional technical cooperation platform; local governments should formulate differentiated scientific and technological innovation policies. For areas with low Marine science and technology level, such as Guangxi and Hainan, they can focus on the transformation and application of scientific and technological achievements and use preferential policies to attract high and new Marine technologies. For Shandong, Jiangsu, Zhejiang and other regions with high innovation level, we should fully tap the potential of scientific and technological resources, focus on emerging Marine industries, break breakthroughs in key Marine core technologies, and effectively give play to the role of science and technology in promoting the high-quality development of Marine economy.

(5) Promoting the adjustment of industrial structure in coastal cities. We will raise the level of utilization of foreign investment, To improve the economic quality and growth of coastal cities, Mainly to promote the adjustment of industrial structure through guidance, To guide foreign investment to high-tech industries and modern service industries, To support foreign investment in innovative enterprises, At the same time, coordinated development is for the purpose, We will improve the foreign investment orientation, With 21 pilot free trade zones (ports), By implementing high international standards of trade standards, Implement the pre-establishment national treatment and the negative list management system, We will guide the concentration of high-quality foreign investment and improve the investment structure, We will give full play to the spillover role of foreign technology, To foster new growth drivers of economic development, Promote the upgrading of the industrial structure of coastal cities, Reduce the number of high-polluting enterprises, Promote the transformation of enterprises, Thus promoting the high-quality development of the Marine economy.

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