An Empirical Analysis of the Differences in One Belt One Road Economic Zone Based on Matlab Software

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Abstract. In September 2013, China put forward the "New Silk Road Economic Belt" cooperation initiative and in October of the same year, China put forward the "21st Century Maritime Silk Road" cooperation initiative again. Due to the huge economic differences among countries in "One Belt and One Road", it is necessary to conduct in-depth analysis of the differences in each economic zone. In this way, it is convenient for countries to carry out in-depth economic cooperation and convert resource economy and technological advantages into products needed by each country. Therefore, this article will conduct an empirical analysis of the differences in the "Belt and Road" economic zone based on matlab software to provide references for relevant personnel.

Keywords: One Belt and One Road, Differences Among Economic Zone, Empirical Analysis, Matlab Software

1. Introduction

In order to achieve cultural tolerance, economic integration and political mutual trust among economies, China has put forward the initiative of "One Belt and One Road" cooperation. By building a community of shared interests, shared future and shared responsibilities, we can not only achieve common economic development among different regions, but also jointly implement environmental responsibility[1]. In addition, in the process of long-term cooperation, the openness and cooperation depth of countries can be effectively enhanced, so that countries can complement each other's advantages and ultimately meet their own development needs. However, differences in One Belt and One Road economic zones also bring great resistance to the implementation of this initiative, which requires in-depth analysis of differences in economic zones to deal with all kinds of existing problems.

1.1. MATLAB software

MATLAB is used in data analysis, wireless communication, deep learning, image processing and computer vision, signal processing, quantitative finance and risk management, robotics, control systems and other fields.
The matlab software mainly faces the high-tech computing environment of scientific computing, visualization and interactive programming. It integrates many powerful functions, such as numerical analysis, matrix calculation, scientific data visualization, and nonlinear dynamic system modeling and simulation, in an easy-to-use window environment, for scientific research, engineering design, and many sciences that require effective numerical calculations\textsuperscript{[2]}. The field provides a comprehensive solution

2. Overview of the One Belt and One Road

At present, the world economy is slowly recovering. Therefore, in 2013, China put forward the "One Belt and One Road" cooperation initiative and realized the economic integration and political mutual trust among various regions by building a community of shared destiny, shared interests and shared responsibilities. One Belt and One Road refers to the new silk road economic belt and the 21st century maritime silk road. The two routes run through southeast Asia, South Asia, central Asia, central Europe, eastern Europe and other countries\textsuperscript{[3]}. One Belt and One Road aims to promote the free circulation of various economic factors and achieve a high degree of integration of the market and ultimately create an economic cooperation zone that is inclusive, balanced, inclusive and open. In the process of implementing the One Belt and One Road cooperation initiative, due to the large gap in the level of economic development among various regions, there will be great resistance in the process of construction projects, resource transformation and policy implementation. In order to solve the problem of differences in "One Belt and One Road" economic zones, China will invest 600 billion to 800 billion us dollars in One Belt and One Road in the next five years, so as to narrow the gap in economic level between different economies.

3. Status Quo of Differences among One Belt and One Road Economic Zones

The economic situations of countries along the "One Belt and One Road" are quite different, because there are large gaps in the industrial level, agricultural level and scientific and technological industry among countries, as well as in the infrastructure construction status among countries. The differences in domestic economic zones are mainly reflected in the economic level. Before the reform and opening up, China adopted the strategy of balanced development to meet the needs of economic development in different regions. After the reform and opening up, in order to promote the rapid growth of national economy as soon as possible, China has chosen the strategy of giving priority to the development of the central and eastern regions. More money, policies and resources have been invested in the central and eastern regions, which has greatly improved the economic level of the region. However, the western region lacks the support of capital, technology and policies, so the gap between the economic level of the western region and that of the central and eastern regions is increasing in the long-term development process. And the existence of this kind of gap also will inevitably hinder the area along the way in the implementation of the initiative. The silk road economic belt, for example: silk road economic belt over the northwest five provinces and the southwest four provinces, such as Chongqing's gross regional domestic product is 2.036319 trillion yuan in 2018 while Qinghai's gross regional domestic product is 286.523 billion yuan, which makes the GDP gap reach 7 times. Therefore, on the basis of different economic levels, when implementing the same policy, there will be a big difference in its effect\textsuperscript{[4]}. In the process of investment, trade and infrastructure construction, the silk road economic belt will also face great challenges for the high integration between regions due to the differences in economic zones.

Of course, One Belt and One Road economic zone differences not only exist in the domestic, but
also generally exist in various regions abroad. The reasons for this are complicated, including differences in politics, culture, policies, science and technology. Taking the 21st Century Maritime Silk Road as an example: in the 21st Century Maritime Silk Road economic belt, not only the coastal port cities in the east of China, but also the coastal cities in Africa and countries in the Mediterranean and Western Europe, including the Netherlands and Kenya; The GDP of the Netherlands in 2018 has exceeded $900 billion, while the GDP of Kenya in 2018 is only $51.1 billion, which shows that the gap between the two has reached 18 times. In addition, the Netherlands also owns a large number of high-standard technology companies, such as ASML, Microwidet and others. Meanwhile, the Netherlands itself is also very rich in scientific and technological strength, while Kenya lags behind the Netherlands in terms of economy\(^5\). Moreover, there is also a huge gap between its scientific and technological strength and the Netherlands. Therefore, through the above analysis, it can be seen that in the process of One Belt and One Road initiative implementation, the differences among economic zones are relatively obvious.

4. Empirical Analysis of Differences among One Belt and One Road Economic Zones

Since the One Belt and One Road involves a large number of economic zones and covers a wide range, it is necessary to conduct an empirical analysis of the differences in economic zones, so as to provide more useful data and theoretical support for the study of "One Belt and One Road". The economic zones involved in One Belt and One Road include not only domestic economic zones but also foreign economic zones. Therefore, it is necessary to conduct an empirical analysis of the differences between domestic and foreign economic zones\(^6\). The specific contents are as follows.

4.1. Empirical Analysis of Differences in Domestic Economic Zones

In the process of empirical analysis of the differences in domestic economic zones, the differences in domestic economic intervals can be well analyzed by selecting GDP as the measurement index. The standard deviation of GDP per capita from 2009 to 2019 can reflect the change of absolute difference, as shown in the figure below:

![Standard Deviation of GDP per capita](image)

**Figure 1.** Standard Deviation of GDP per capita

Through understanding and trend analysis of the above figure, we can know that the absolute difference of domestic GDP level is still rising in the overall trend. In order to eliminate the impact of the increase in per capita GDP, it is necessary to conduct an in-depth analysis of the economic differences among provinces by using the weighted coefficient of variation. The final results are shown
as follows:

![Figure 2. Weighted Variation Coefficient](image)

After the analysis of the weighted variation coefficient, it can be seen that it has been rising from 2009 to 2018. Therefore, through the above empirical analysis, we can know that the domestic economic interval difference is still at a high level and with the continuous development of the economy, this gap is constantly increasing. By increasing investment, the differences between different economic zones can be narrowed, which will have a positive impact on One Belt and One Road's infrastructure construction, economic cooperation and trade export.

4.2. Empirical Analysis of Differences in Foreign Economic Zones

Due to the large number of countries involved in the New Silk Road Economic Belt and the 21st Century Maritime Silk Road Economic Belt, it is necessary to select some regions for current political analysis in the process of empirical analysis, so as to preliminarily understand the differences of foreign economic zones. Therefore, in the process of empirical analysis, the difference between the economic zones of Poland and Czechoslovakia is taken as an example. In order to make the empirical analysis more targeted and controllable, the GDP of Poland and Kenya is still selected as the measurement index here, and the conditional convergence analysis of economic differences between the two countries is conducted. The analysis of conditional convergence should be based on the same exogenous basis. Of exogenous conditions mainly including government spending, the degree of opening to the outside world, policy, in order to smoothly carry out empirical analysis, we also need to choose Poland and Czechoslovakia’s amount of per capita GDP, how much the government investment in recent five years, GDP per capita of numerical value, and the total number of population growth and urbanization as the conditional convergence speed, so the data should be collected from a total of 30 groups. In order to ensure the accuracy of the analysis results, a variety of different parameter combinations have been carried out and relevant variables should be gradually introduced for metrological analysis. Hausman test should be carried out on all models. Moreover, the fixed effect model is analyzed again to find the core factors of dummy variables and the results show that: (1) Human capital is positively correlated with economic growth rate. (2) Population growth rate is negatively correlated with economic growth rate. (3) Government consumption is correlated with repeated economic growth. (4) The degree of market openness is positively correlated with economic growth. (5) The speed of urbanization is positively correlated with economic growth. Therefore, through the analysis of the results, it can be understood that the important reason for the economic gap between Kenya and Poland lies in the gap of
human capital stock and the difference of such factors will be extended to agriculture, industry and high-tech industries. In addition, the gap between the speed of urbanization and the degree of market openness also makes the regional economic differences increasingly large. In order to better promote the construction of One Belt and One Road, infrastructure construction should be carried out in relatively backward areas, which can help improve the urbanization rate in the region. It is of great significance for the trade and regional integration of countries to open the market in the region with the advantage of capital and improvement of openness.

5. Conclusion

To sum up, The launch of the "One Belt One Road" initiative based on matlab software can not only promote the development of the domestic economy, but also strengthen the cooperation and contact among various regions, which helps form a community of interests and responsibilities. In the face of the global economic crisis and ecological problems, more effective measures can be taken to deal with the situations, which may help achieve the rapid recovery of the world economy and ultimately realize the goal of enhancing comprehensive national strength.

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