

## Data Analysis and Core Driving Force of Yangtze River Delta Economic Growth under the New Normal

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*Abstract: In order to guide consumption, expand domestic demand and promote economic growth, based on the economic growth theory of the national income determination model, the quantitative relationship between the three carriages and economic growth and the core motivation of economic growth in the two provinces and one city of the Yangtze River Delta are focused on. The results show that consumption, investment, as well as import and export have a significant impact on economic growth, but the marginal growth value of consumption is the highest, followed by investment, and import and export is the lowest. Thus, if the marginal output ranked first as the core driver, the core driver of economic growth of two provinces and one city in Yangtze River Deltas is consumption*

*Keywords: Economic growth, Growth drive, Consumption preference, Yangtze River Delta*

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### 1. INTRODUCTION

From the beginning of reform and opening up in 1978 to the beginning of the 21st century, China has actively attracted foreign investment by utilizing the comparative advantages of abundant labor resources, low labor prices and low energy prices in the international industrial division of labor [1]. By developing resource-consuming and labor-intensive industries in an all-round way, the country has rapidly entered the ranks of middle-income countries from the low-income level [2]. This rapid transformation not only promotes the economic growth rate, but also brings a series of negative problems. For instance, many problems characterized by the new normal economy and excess capacity will affect China's economic development in a relatively long time [3]. Located in the southeast coastal area of China, the Yangtze River Delta has been the forefront of China's economic development for many years. It has played and is playing a huge role in the national economic development. Under the background of the current global economic downturn, the economic growth of the Yangtze River Delta will have an important impact on the overall economic growth of the country [4,5]. Based on the lack of domestic economic growth momentum and the transformation of old and new momentum, the core causes of economic growth in two provinces and one city in the

Yangtze River Delta are explored, and the problems existing in the economic growth drive are analyzed [6].

## **2. STATE OF THE ART**

Foreign studies on consumption orientation started earlier. In 1936, Keynes put forward the theory of absolute income, and concluded that there is a stable functional relationship between consumption and income. Since then, consumption function has become a hot topic of economic research. Duesenberry put forward the theory of relative income, and used "demonstration effect" and "ratchet effect" to express that the highest income and peripheral consumption level influenced consumption behavior. Modigliani proposed the life cycle theory, and concluded that consumers' future income expectations, age and assets can change consumption. Domestic research on consumer behavior is more abundant. Hangbin and Shen Chunlan used the state space model to analyze the data of urban residents from 1978 to 2002. They believed that there is a variable co-integration relationship between consumption and income. Jiang Sen and He Li applied ELES model to study the marginal consumption tendency of urban residents in China. The consumption structure of urban residents is in the third level and continues to upgrade. Chen Zhao and Zhang Hao established the mathematical function of rural consumption problems in China, and the co-integration model analysis showed that the difference of marginal consumption propensity of farmers in China was caused by consumption habits and income differences. To sum up, the above research deepens our understanding of how demand driving promotes regional economic growth.

## **3. METHODOLOGY**

Gross domestic product (GDP) is used to measure regional economic growth, because the main performance of a country or a region's economic growth is whether there is a significant increase in GDP. If a country or a region has achieved rapid economic growth, then the region's GDP indicators will also show a short-term sharp increase. From the perspective of explanatory variables, the total retail sales of social consumer goods are used for the measurement of resident consumption. It reflects the improvement of people's material and cultural living standards in a certain period of time, and reflects the degree of realization of social commodity purchasing power. With regard to the measurement of import and export trade, the total import and export volume of domestic destinations and commodity sources is used. The index can explore the import and export trade situation of various provinces and cities in more detail, and can also measure the import and export volume of various regions more accurately.

The total retail sales volume of social retail goods and the total import and export volume of domestic destinations and sources are two core explanatory variables, representing the consumption volume and foreign trade volume of the region, respectively. Taking into account the possible impact on the explanatory variables of GDP, the investment in fixed assets of the whole society is added as a control variable. The investment in fixed assets of the whole society reflects the workload invested in the process of the construction and purchase of fixed assets, which is expressed in money. The investment in fixed assets of the whole society can update the technology and equipment used in economic production, change the economic structure, establish new economic departments, adjust the distribution of productive forces, improve regional economic development differences, improve the

overall economic strength, and improve the material and cultural life of the country as a whole. It can be said that this is a necessary condition for achieving economic growth.

#### **4. RESULTS AND DISCUSSION**

##### **4.1 Data analysis**

Since the reform and opening up in 1978, the economy of two provinces and one city in the Yangtze River Delta has made tremendous progress in the past forty years. From the point of view of both total and per capita indicators, Shanghai, Jiangsu and Zhejiang, two provinces and one city, are in the forefront of the country. At the same time, the total level of social productive forces in the region has also reached the development level of the general developed economies. In 2014, Jiangsu's GDP reached 6508.8 billion yuan, with an average per capita GDP of 81,769 yuan; Shanghai, which is close to the south of Jiangsu, its GDP reached 2356.7 billion yuan, with an average per capita GDP of 97,146 yuan; Zhejiang, which is located in the south of the Yangtze River Delta, its GDP reached 4017.3 billion yuan, with an average per capita GDP of 72,936 yuan in 2014. Thus, the per capita GDP of the two provinces and one city in the Yangtze River Delta has exceeded 10,000 US dollars and entered a new stage of economic growth.

As a result of the serious inflation in 1993 and 1994 and the Asian financial crisis at the end of last century, agricultural and industrial production were restrained obviously, and the economic growth rate showed a downward trend in 1995-1999. In response to China's entry into World Trade Organization (WTO), Jiangsu Province has adopted a series of macro-control policies to stimulate trade, which has led to rapid economic growth. Since trade involves both import and export trade, it is the most volatile and the most unstable factor for economic growth. Since 2001, the growth rate of fixed assets investment in Jiangsu Province has increased markedly, and reached the highest level in 2003. Then, from 2004 to 2010, the growth rate has been maintained at more than 20%. This period maintained high-speed investment growth, mainly due to the expansion of opening up in Jiangsu Province, and vigorously promoting the pace of urbanization and industrialization. In 2008-2009, affected by the global financial crisis triggered by the U.S. subprime mortgage crisis, the growth rate of GDP in Jiangsu Province dropped. At the same time, due to the overall slump of the world economy, the growth rate of trade in Jiangsu Province has declined significantly, and there has been a negative growth. Trade is also the most volatile in the three driving forces of economic growth in Jiangsu Province, which can be observed not only by mapping, but also by descriptive statistical standard deviation. Entering 2010, with the development of national economic stimulus measures, Jiangsu's economic growth rate rose transiently and trade growth rebounded rapidly. After that, the growth rate of trade fell again, while the fixed assets and total retail sales of social consumer goods declined steadily. The GDP of Jiangsu Province returned to the level of 2009 again.

##### **4.2 Model selection**

The data of the Yangtze River Delta region from 1995 to 2014 are selected: GDP, total retail sales of social consumer goods, total import and export of domestic destinations and sources, and investment in fixed assets of the whole society all come from the website of the National Bureau of Statistics. The outlier data are not found when the outlier data are processed, probably because these main indicators are macro-economic data, and the units are the standard of measurement of 100 million

yuan. As for the use of the model and its principles, it should be pointed out that since the panel data is used, based on the national income determination model, regression model is used.

$$y_{it} = u_0 + x_{it} * b_{it} + e_{it}$$

Through the use of this method, the economic growth drive effect of Yangtze River Delta region is further verified and its core drive is determined.

### 4.3 Regression analysis

From the perspective of descriptive statistics and mapping observation, the consumption growth rate of the two provinces and one city in the Yangtze River Delta has maintained a steady and rising trend in the past two decades. In contrast, the fluctuation range of trade growth is huge, and the impact of the international environment is very obvious. From the point of view of fixed assets investment, this value is also affected by economic and policy aspects, thus having large fluctuations. In addition, with the gradual disappearance of China's comparative advantage in labor price and the limitations brought about by environmental carrying capacity and economic development policy adjustment, it is very difficult for China to maintain a high-speed growth in the field of foreign trade and investment. From the perspective of future economic development, it is more realistic for two provinces and one city in the Yangtze River Delta to emphasize that consumption drives the economy and enlarges regional domestic demand. It is found that consumption plays a more significant role in stimulating the total economic output than investment and trade. Whichever of the three provinces or cities, the unit-driven effect of consumption on economic growth is about twice that of investment, and more than 2.5 times that of trade. For Jiangsu, the pulling effect of consumption is more obvious. At the same time, the conclusion is convincing because the regression results are significant and the goodness of fit is good. From the above data analysis and empirical analysis, it can be found that consumption does occupy a core position in the economic development of two provinces and one city in the Yangtze River Delta, and will be the core driving force of future economic development.

## 5. CONCLUSION

Combining data analysis and econometric analysis, the core driving force of economic growth of two provinces and one city in the Yangtze River Delta is studied and judged. Investment demand and trade demand fluctuate greatly affected by external factors. Consumption demand remains relatively stable, and in two provinces and one city, its pulling effect on the economy is multiplied by investment demand and trade demand. Based on the above facts, it is held that consumption will be the core driving force in the present and future economic development, and expanding domestic consumption demand is always a long-term and arduous economic task of China.

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