

# **Research on the Impact of Manufacturing Technology Innovation based on the Regional Economic Growth**

Ruoyun Ding

School of Economics, Jiangxi University of Finance and Economics, Nanchang City, Jiangxi Province, 330000, China

Email: 975414907@qq.com

**Keywords:** Manufacturing; Technological Innovation; Economic Growth; Influence Mechanism

**Abstract:** China's current economy cannot leave the core field of domestic manufacturing technology innovation in the process of rapid development. Through manufacturing technology innovation, the core technology in the current industrial manufacturing industry can be improved. This will improve the average growth rate and quality of China's economy. Level has important strategic significance. This article mainly studies the promoting effect of manufacturing technological innovation on regional economic growth. The article first analyzes the mechanism of manufacturing technological innovation's impact on promoting regional economic growth, and then analyzes the new stage of China's manufacturing technological innovation and regional economic growth. The current situation, and finally combined with the actual situation, put forward some specific measures to improve China's manufacturing technology innovation and promote regional economic growth.

## **Introduction**

From 1980 to 2020, China's GDP grew from the initial 376.9 billion to 99.08 trillion yuan. The GDP has expanded by nearly 270 times, and China's economic growth rate is far from the world over the same period in the world's major economies. In the context of my country's rapid economic growth, there are not only the driving factors for the current social economic system and social system reform, but also the reason for my country's domestic industrial production field to vigorously innovate manufacturing production technology to promote the rapid growth of the national economy. At present, the driving concept of the Chinese government for social and economic development has been transformed from the initial GDP theory to the current benefit and high-quality development theory, which is committed to promoting the transformation of China's economic growth from the traditional factor development driving model to the independent innovation driving model. At the same time, this development The trend is also an inevitable requirement in the development of a modern country with socialist characteristics.

## **1. The Mechanism of the Impact of Manufacturing Technological Innovation on Promoting Regional Economic Growth**

### **1.1 Manufacturing Technology Innovation Can Promote Regional Economic Growth Efficiency**

There are two main ways for manufacturing technological innovation to regional economic growth operations: First, through manufacturing technological innovation, the composition ratio and production composition of regional production factors can be mobilized to improve the efficiency of asset allocation within the manufacturing industry and effectively reduce The cost of the enterprise's investment in production resources, which in turn helps the enterprise to increase its output value income. Through manufacturing technological innovation in the production process and production management of the enterprise, it can help the enterprise to improve the production efficiency of the product, thereby ensuring the rapid economic growth of the manufacturing

enterprise [1]; second, with the current national international division of labor system In-depth, China's industrial enterprises subdivide the production process in the production process of products. At the same time, as the world's largest manufacturing country, China has a complete manufacturing and production enterprise. Product manufacturing can be improved through technological innovation in the manufacturing industry. The quantity and quality of production in China will further increase the added value of products, enhance the core competitiveness of enterprises, help enterprises further extend the industrial value chain, and increase the efficiency of economic growth of enterprises.

### **1.2 Manufacturing Technology Innovation Can Promote Regional Economic Structure Optimization**

The regional economic structure can be optimized through technological innovation in the manufacturing industry. This is mainly due to the complementary role of the proportion and spatial relationship between various elements in the regional economic structure system, such as the industrial structure, urban-rural gap, Balance of payments structure, investment and consumption structure, etc. Under the macro-control of relevant national policies, manufacturing technology innovation must first innovate and reform based on the needs of the entire market environment. Therefore, this change is usually a benign response and has a certain role in promoting regional economic growth. At the same time, technological innovation in the manufacturing industry is also extremely important for the development of the real economy of the region. High-tech in the manufacturing industry can further promote the integration of urban and rural construction and shorten the regional difference between rich and poor [2]. In addition, through manufacturing technology innovation, it can also meet the increasing diversified consumer goods demand of the people in our society, and also promote the consumer investment in the current market, improve the domestic consumer investment environment and the balance of payments structure.

### **1.3 Manufacturing Technology Innovation Can Promote Regional Green Development**

Since the reform and opening up, China's manufacturing industry has developed into a current large manufacturing country with its unique advantage of demographic dividends, but its manufacturing products have the disadvantages of low added value and high energy consumption. At the same time, China's demographic dividend is developing in the country The process gradually disappeared. In the past, the model of manufacturing industry relying solely on the number of laborers to develop the economic environment was no longer suitable for the current economic development of China. However, through technological innovation in manufacturing, China's current ecological and environmental pollution problems can be improved. Through technological innovation in manufacturing, enterprises can provide consumers with green, healthy and environmentally friendly products, so as to protect the consumer environment while attracting market consumers [3]. Secondly, through technological innovation, companies can recycle pollutants such as waste gas, waste water, and waste residues produced in industrial production. By developing new clean technologies and emission technologies, they can reduce the consumption of raw materials and energy in manufacturing. , And then achieve zero emissions in the entire process. In the context of manufacturing technology innovation, enterprise production departments can also improve the efficiency of the use of raw materials, reduce the current consumption of resources in the natural environment, thereby reducing the amount of pollutant emissions, and maintain the healthy development of green ecological regions [4].

## **2. Analysis of Current Status of My Country's Manufacturing Technology Innovation and Regional Economic Growth**

### **2.1 Insufficient Investment in Technological Innovation R&D in My Country's Manufacturing**

At this stage, the manufacturing enterprises in my country's society are obviously underinvesting

in science and technology research and development, which has become a major obstacle hindering enterprises to enhance their independent innovation capabilities. According to public data on the Internet, the total investment intensity of R&D funds in China's domestic society is nearly 2.19% of the total output value of manufacturing. This value is second only to the United States, but in terms of the overall structure of R&D funds, manufacturing technology R&D The main part of the investment is borne by the government, and private enterprises in society account for a relatively low investment in manufacturing technological innovation R&D [5].

## **2.2 My Country's Manufacturing Technology Innovation Lacks Core Technologies in Key Areas**

At present, China is the world's first manufacturing country, but China is also one of the largest manufacturing import countries. According to data released by the McKinsey Global Institute, China's manufacturing technology consumer market has shown a trend of localization in the long-term development process. All are solar photovoltaic panels, high-speed rail, electric vehicles and other industries through technology introduction, the domestic market share has also exceeded 50%, but China's cloud services, smart robots, smart phones and other high-tech products in the production process, domestic manufacturers provide The low proportion of parts shows that China's manufacturing technology innovation lacks core technology and is too dependent on foreign technology and parts [6].

## **3. Specific Measures to Improve the Manufacturing Technology Innovation and Promote Regional Economic Growth**

### **3.1 Vigorously Enhance the Benefits of Manufacturing Technology Innovation and Development**

Vigorously improving the efficiency of manufacturing technology innovation development can further reduce the cost of capital investment in innovation work. In the process of improving the efficiency of manufacturing technology innovation development, the Chinese government must achieve the following three points: First, we must strengthen The leading position of enterprises in manufacturing technology innovation. At present, state-owned enterprises and related large-scale scientific research institutions in China's society are the main participants in manufacturing technology innovation. By strengthening the awareness of independent innovation and changing the mode of technological innovation, enterprises are upgrading their enterprises. The key to technological innovation in manufacturing [7]; second, companies need to establish a mechanism to encourage basic innovation in manufacturing during the course of their operations. By creating an environment that encourages technological innovation internally, enterprises can cultivate manufacturing technology in enterprises. Innovating talents, constantly promoting the innovation and entrepreneurial ideas and practical spirit of employees within the enterprise; third, it is necessary to create a perfect industry-university-research alliance idea in society. By combining some scientific research institutions, universities and industrial enterprises, you can integrate scientific research institutions and universities The timely transformation and application of scientific and technological products in industrial research improves the efficiency of enterprise technological innovation, and can also promote in-depth cooperation between enterprises and relevant research institutions [8].

### **3.2 Promote the Level of Technological Innovation and Development in the Manufacturing Industry**

Manufacturing technology innovation plays an important role in China's economic development. At the same time, manufacturing technology innovation is also the key to the sustainable development of China's domestic economy. To promote the level of manufacturing technology innovation, our government needs to accomplish the following three points: First, the government The relevant laws and regulations in manufacturing technology innovation need to be improved. At

the same time, in view of the current production market in the manufacturing industry, the government should also set up some advanced production plans to ensure the integrity and timely support of laws in manufacturing innovation technology. To maintain fair competition in the market [9]; Second, the government needs to improve relevant innovation policies in the manufacturing technology innovation environment. The local government can support the development process of small and medium-sized enterprises through public procurement policies. Second, the government can provide corresponding tax reduction or exemption for technological innovation of enterprises. Preferential policies, and encourage and commend the scientific and technological achievements of enterprises in related fields [10]; third, the government needs to reasonably construct economic growth quality indicators in the construction of the regional economic growth structure system, and regional governments at all levels need long-term Pay close attention to basic economic development trends, make good overall planning in economic development, and increase the economic growth rate of enterprises. In addition, governments in various regions need to adapt to local conditions and formulate reasonable governance objectives and public requirements for different economic development levels in each region to provide guidance for the government to implement relevant policies.

## Conclusion

The government of our country can effectively promote the growth of the regional economic output value through manufacturing technology innovation. At the same time, through manufacturing technology innovation, it can also help China to establish a good external environment for technological innovation, thereby improving the economic growth of the eastern, eastern and western regions of China. To improve the well-being of people in the region.

## References

- [1] He Xingbang. Technological Innovation and Economic Growth Quality——An Empirical Analysis Based on Provincial Panel Data[J]. China Science and Technology Forum, 2019(10): 24-32+58.
- [2] Zhong Hongfang, Liu Chengjun. Research on technological innovation, industrialization, urbanization and economic growth quality: how the growth kinetic energy evolves under the new normal[J]. Modern Management Science, 2019(09): 44-46.
- [3] Yang Kaijun, Min Chongzhi. Research on the Driving Effect of Technological Innovation on the Quality of Economic Growth——Taking Guangdong, Hong Kong and Macao as an example[J]. Contemporary Economic Management, 2019, 41(12): 29-37.
- [4] Zhao Yulin, Pei Chengchen. Technological innovation, industrial integration and manufacturing transformation and upgrading[J]. Science and Technology Progress and Countermeasures, 2019, 36(11): 70-76.
- [5] Zhou Chao. Research on the relationship between the factors influencing innovation driving ability and the quality of economic growth——An empirical analysis of the VAR model based on the national statistical data from 1990 to 2017[J]. Industrial Technology and Economy, 2019, 38(05): 12-18.
- [6] Zhang Jifeng, Deng Meiwei. The Impact of Population Aging and Technological Innovation on the Quality of Economic Growth——Based on the Comparative Analysis of China and Japan[J]. Japanese Studies, 2019, 33(01): 20-31.
- [7] Jie Hui, Wang Chengyong. A Study on the Effect of Educational Input and Labor Quality on Economic Growth——Based on the STR Model[J]. Journal of Central China Normal University (Humanities and Social Sciences Edition), 2019, 58(01): 50-56.
- [8] He Xingbang. The impact of urbanization on the quality of China's economic growth: An

analysis based on provincial panel data[J]. Urban Issues, 2019(01): 4-13.

- [9] Ren Baoping, Li Yumo. The power transformation of my country's economy from high-speed growth to high-quality development in the new era[J]. Economics and Management Review, 2019, 35(01): 5-12.
- [10] Deng Meiwei, Zhang Jifeng. Research on the Driving Effect of Technological Innovation on Improving the Quality of Japan's Economic Growth—Analysis Based on Dynamic Panel Data of Japanese Prefectures[J]. Modern Japanese Economy, 2018, 37(05): 69-80.