

The Impact of New Infrastructure on the Economy of Guangdong, Hong Kong and Macao

Jingjing Chen

School of Finance and economics, Guangdong University of Science and Technology,
Dongguan, Guangdong, 523808, China

Abstract

Based on the development status of new infrastructure in Dawan District, this paper studies the impact of new infrastructure on the economy of Guangdong, Hong Kong and Macao Dawan district. It is found that the new infrastructure can provide momentum for the development of digital economy in Dawan District, promote the formation of new business forms in the Dawan District, attract more talents to help the development of the Bay District, and finally promote the high-quality economic development of Dawan district.

Keywords

New infrastructure; Guangdong; Hong Kong and Macao; Manufacturing.

1. Connotation of New Infrastructure

Many scholars have analyzed the connotation of new infrastructure in a broad and narrow sense. The new infrastructure defined in this paper mainly includes three categories: information infrastructure, integration infrastructure and innovation infrastructure. Information infrastructure mainly includes 5G technology, artificial intelligence, big data and industrial Internet. The integration foundation mainly includes intelligent transportation and intelligent energy. Innovation infrastructure mainly includes science and technology, technology and innovation. The new infrastructure is no longer equivalent to the traditional infrastructure, but makes the traditional industry develop in the direction of intelligence, digitization and innovation.

2. Development Status of New Infrastructure in Guangdong, Hong Kong and Macao Dawan District

This paper mainly analyzes the development status of new infrastructure from the three major infrastructure of new infrastructure, so this paper mainly analyses 5G, intelligent transportation and science and technology infrastructure.

2.1. 5G

As the core technology of information foundation, 5G has the characteristics of high speed and high capacity, which helps all aspects of social economy and plays an important role in digital development. At present, China's 5G technology is the world leader. According to the data of the Ministry of industry and information technology and the research department of CITIC Securities, the number of base stations built in China has reached more than 700000, accounting for about 70% of the world. Cities above prefecture level in China have covered 5G networks. In the future, China will build more 5G base stations. In addition, the penetration rate of 5G mobile phone users in China has reached 20%, far exceeding that in foreign developed countries. Guangdong, Hong Kong and Macao Dawan district has great regional advantages for the development of 5G technology and artificial intelligence, relevant industries are also

gradually constructed, and the application of 5G technology to other industries is also accelerating the integration.

2.2. Intelligent Transportation

The development of intelligent transportation helps to improve China's transportation system and realize the digitization and networking of transportation through the application of communication and information processing technology. According to the data of the prospective research institute, the scale of China's intelligent transportation market has increased from 42 billion yuan in 2011 to 165.8 billion yuan in 2020, an increase of nearly three times in ten years. It is estimated that the market scale of intelligent transportation will reach 372.6 billion yuan by 2025, with great market potential. As a large urban agglomeration, in order to realize the rapid flow of people and things, promote the coordinated development of the region and strengthen the gathering of talents, intelligent transportation undoubtedly plays a key role. The concept of "one hour living circle" in the bay area requires the help of intelligent transportation. Despite the rapid development of urban rail transit in Guangzhou and Shenzhen, it is still relatively backward compared with Tokyo. In addition, rail transit in other cities, such as Dongguan, Huizhou and Foshan, is not developed, and the road traffic pressure in the bay area is huge. The construction of intelligent transportation is the general trend for the Dawan District.

2.3. Science and Technology Infrastructure

Since the proposal of new infrastructure, China has accelerated the development of new infrastructure. In addition, due to the impact of the epidemic, new infrastructure has ushered in development opportunities. However, compared with foreign developed countries, the development of new infrastructure in China is still backward, especially in science and technology infrastructure. According to the data of Chuancai Securities Research Institute in 2019, the number of scientific research personnel per million people in China's science and technology infrastructure was 1234, and the R & D intensity was 2.1%, while the number of people in Japan and the United States in the same period were 5305 and 4256, and the R & D intensity was 3.2% and 2.8% respectively. It can be seen that there is still much room for the development of China's science and technology infrastructure. At present, Guangdong, Hong Kong and Macao Dawan district has strong policy support for the construction of financial science and technology. Futian District of Shenzhen strives to build itself into a national financial science and technology center. In the outline of Dawan district development plan, it also indicates that it is necessary to carry out financial science and technology pilot projects and strengthen the construction of financial science and technology.

3. The Impact of New Infrastructure on the Economy of Guangdong, Hong Kong and Macao

3.1. Provide Kinetic Energy for Digital Economy in Dawan District

One of the modules of the new infrastructure is big data, artificial intelligence and 5G technology. The development and application of digital technology will promote the high-quality growth of Guangdong, Hong Kong and Macao Bay area. Guangdong, Hong Kong and Macao Dawan district is now in the leading position in the development of digital economy. Taking Guangdong Province as an example, according to the data of China Academy of information technology and new era Securities Research Institute, the scale of digital economy in Guangdong Province increased from 30000 yuan in 2016 to 49000 yuan in 2019, an increase of 63.33%, while the GDP of Guangdong Province increased from 8.2 trillion yuan in 2016 to 10.8 trillion yuan, an increase of 31.71%. In terms of the proportion of digital economy scale, the digital economy scale of Guangdong province accounted for 36.59% of the national GDP in

2016, 45.37% in 2019, and 13.6% of the national total in 2019. It can be seen that the digital economy has developed considerably in Guangdong, Hong Kong and Macao. The development of the new fund uses big data, artificial intelligence, industrial Internet, 5g and other technologies to directly help the development of digital economy and promote the economic development of Guangdong, Hong Kong and Macao.

3.2. Promote the Industrial Integration of Dawan Distric

The development of new infrastructure accelerates the integration and construction of industries. New energy, new materials and new technologies cross derive new products and industries, so as to promote the development of relevant industries in Dawan district. In addition, the new infrastructure can drive the reconstruction and development of the whole industrial chain. The upstream enterprises involve chips, base stations and sensors, while the downstream enterprises involve intelligent appliances and intelligent terminals. The formation of new fields will drive new investment and new consumption. The epidemic situation in 2020 has had a great impact on China's economy, but it has also spawned a number of new consumption formats: online education, online medical treatment, online consumption, etc. the formation of these new industries and formats will undoubtedly promote the continuous development of new infrastructure and create more jobs, so as to realize the all-round development of Guangdong, Hong Kong, Macao and the Great Bay area.

3.3. Promote the High-Quality Development of Manufacturing Industry in Dawan District

Manufacturing is the pillar industry of Guangdong Province. Although the number of manufacturing enterprises in Guangdong Province is increasing, the growth rate of investment is declining, which is mainly caused by the rise of production costs and overcapacity. The traditional manufacturing industry has been unable to meet the needs of market diversification. The insufficient industrial development and unreasonable industrial structure lead to great challenges for the traditional manufacturing industry in Guangdong. The development of new infrastructure promotes the upgrading of traditional manufacturing industry and makes it develop towards digitization and intelligence. As the forefront of global manufacturing development, Dawan district has provided abundant capital and resources for the transformation and upgrading of intelligent manufacturing. The development of manufacturing industry has also experienced the era of 1.0-3.0. Secondly, Dawan district has its unique regional advantages, industrial agglomeration and outstanding innovation, which has injected vitality into the high-quality development of manufacturing industry. The 14th five year plan for the high-quality development of manufacturing industry in Guangdong Province also requires the coordinated development of industries, the creation of a national and upgraded manufacturing innovation center, and the creation of a high-end manufacturing center in the bay area.

3.4. Attract More Talents

Talent is essential for Dawan district's economy to achieve innovative development. Dawan district can achieve innovative development in industrial reform only by seizing development opportunities and constantly attracting all kinds of innovative talents. According to the Research Report on digital economy and talent development in Dawan District, Guangdong, Hong Kong and Macao, Dawan district has great advantages in attracting talents compared with other regions, and the talent inflow and outflow rate is also in the forefront of the region, especially Shenzhen is far ahead in attracting talents. Dawan district's industrial development policies, strong national support and various talent attraction policies have accelerated the inflow of talents and provided strong talent support for the development of Dawan district. In 2021, Guangdong Province plans to build 1395 key projects, with a total investment of 7.28

trillion yuan. The investment in key projects increases the demand for talents, especially for highly educated talents.

Acknowledgments

Fund Project: 2020 school level scientific research project of Guangdong University of science and technology: Research on "new infrastructure" and integrated development of Guangdong, Hong Kong and Macao Bay Area (GKY-2020KYYBW-8).

References

- [1] Yang Xinhong. New infrastructure becomes a new engine of economic growth in Guangdong [n]. Shenzhen Special Zone News, 2021-03-23 (B02).
- [2] Liu Qiqiang, Sun Jin. Shortage of talents in new infrastructure industry: Guangdong's first talent demand in new infrastructure industry [J]. Guangdong science and technology, 2021,30 (01): 27.
- [3] Guangdong releases new infrastructure implementation plan [J]. Wind energy, 2020 (11): 9.
- [4] Guangdong took the lead in releasing the new digital infrastructure policy and building a national first-class 5g commercial pilot city [J]. Online information military civilian integration, 2020 (08): 26-27.
- [5] Long Jianhui. Special topic "Guangdong seizes new opportunities for new infrastructure construction" ② Guangdong promotes new infrastructure construction and promotes economic transformation and development [J]. Guangdong economy, 2020 (06): 26-29.
- [6] Lin Liulin, Wu Zhaochun. Special topic "Guangdong seizes new opportunities for new infrastructure construction" ③ logic, action mechanism and policy suggestions for new infrastructure to drive high-quality economic development [J]. Guangdong economy, 2020 (06): 30-35.