

Research on the impact of digital infrastructure construction on China-Asean trade potential

Yanping Shi

School of International Business, Yunnan University of Finance and Economics, Kunming 650021, China

ABSTRACT

With the acceleration of the global digitalization process, the construction of digital infrastructure plays an increasingly important role in international trade. As an important trading partner of China, the construction of digital infrastructure in ASEAN countries is of great significance to promote the exploration of trade potential between the two sides. By studying the impact of China-Asean trade potential, this paper discusses the impact of digital infrastructure construction on bilateral trade, with a view to making corresponding contributions to China-ASEAN trade.

KEYWORDS

Digital infrastructure; Asean; Potential for trade.

1. INTRODUCTION

In the context of accelerating digital transformation of countries around the world, digital infrastructure has become the prerequisite for a country's digital transformation and the technical support for the construction of digital economy, digital society and digital government, and has also become an important symbol to measure a country's core competitiveness. In recent years, ASEAN countries have formulated digital transformation strategies, and the construction of digital infrastructure is booming. Although the infrastructure level of countries varies greatly and the progress of digital transformation varies, the process of digital infrastructure construction shows common characteristics. At present, ASEAN countries are vigorously promoting the construction and popularization of mobile Internet, accelerating the introduction of the fifth generation mobile communication technology (5G), building big data centers, planning artificial intelligence programs, creating smart cities, and making different progress. The construction of digital infrastructure in ASEAN countries has promoted the rapid development of digital economy, become a new engine to drive economic growth and promote industrial upgrading, and show broad prospects for development. However, as most ASEAN countries are emerging countries, digital infrastructure construction is still faced with a series of problems such as capital, technology, standards, talents and digital divide [1]. The research on how the construction of digital infrastructure affects the trade potential between China and ASEAN countries is helpful to further promote the trade between China and ASEAN countries and enhance the competitiveness of China's export products.

2. CURRENT SITUATION AND TREND OF DIGITAL INFRASTRUCTURE CONSTRUCTION

2.1. Definition of digital infrastructure construction

The so-called digital infrastructure refers to the construction of a new generation of information infrastructure characterized by digital economy, covering 5G Internet, data center, artificial intelligence, industrial Internet and other digital infrastructure and its supporting facilities, as well as traditional infrastructure transformed through digital and intelligent transformation [2]. At present, both developed and emerging economies are vigorously promoting the construction of digital infrastructure.

2.2. Current situation of digital infrastructure construction in ASEAN countries

2.2.1. Policy development related to digital infrastructure construction in ASEAN countries

Under the background of vigorously promoting the construction of digital infrastructure, ASEAN countries have formulated digital development strategies one after another, taking digital infrastructure construction as their strategic focus. In July 2021, Indonesia issued the Indonesia Digital Roadmap 2021-2024, which proposed four strategic areas of digital transformation and established ten key areas and six strategic directions. The Malaysian government launched the Digital Plan and digital Economy Blueprint, proposing to build digital infrastructure, build an inclusive digital society and create a secure digital environment. The Thai government issued the "Digital Thailand" development plan, proposing the development goals and strategic areas of digital transformation in four stages. The Vietnamese government has issued the National Digital Transformation Plan to 2025 and Development Direction to 2030, which regards digital infrastructure as the key to the country's digital transformation.

2.2.2. Development of digital infrastructure in ASEAN countries

In recent years, the construction of digital infrastructure in ASEAN countries has promoted the rapid development of digital economy and become a new engine driving domestic economic growth. According to the World Bank study, a 10 percent increase in broadband penetration in developed countries increases GDP growth by 1.21 percentage points, while the impact on low - and middle-income countries is even larger at about 1.38 percentage points. In 2021, the key ASEAN countries (Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam) had an Internet penetration rate of 75%, a total of about 440 million users, and their digital economy size (GMV) amounted to US \$170 billion. The digital economy size (GMV) of ASEAN countries is expected to exceed US \$360 billion by 2025 and reach US \$1 trillion by 2030. At the same time, the digital infrastructure built by ASEAN countries has played a powerful role in the global epidemic. In 2021, 40 million new Internet users were added in major ASEAN countries, bringing the number of Internet users to 440 million. 75% of the population had access to the Internet, and 60 million new digital consumers were added after the epidemic. In 2020, the e-commerce scale of ASEAN countries was USD 62 billion, up 63%; E-commerce will reach \$170 billion in 2022, up 49%.

2.3. Trend and development direction of digital infrastructure construction

In recent years, the digital economy of ASEAN countries has developed rapidly and become one of the digital markets with considerable scale and great potential in the world. As ASEAN countries move towards the digital era, the construction of digital infrastructure in each country has promoted digital industrialization and industrial digitalization. [2] It is mainly reflected in the following aspects: the construction of digital infrastructure in various countries covers 5G Internet, data center, artificial intelligence, industrial Internet and other fields; Digital technology promotes the transformation and upgrading of traditional industries. It gives new impetus to the transformation and upgrading of

industry, agriculture, transportation, energy and service sectors in various countries. The development of countries' digital infrastructure enables new business models and consumption patterns; The ASEAN Smart City Network program will drive the development of digital infrastructure. The smart city network involves 26 pilot cities, which provides a broad space for the application of digital technology in urban planning and management. Asean countries have vigorously promoted the digital transformation of governments and established digital national data centers, which has increased the demand of the public sector for digital infrastructure.

3. THE IMPACT OF DIGITAL INFRASTRUCTURE CONSTRUCTION ON CHINA-ASEAN TRADE

3.1. Improve trade efficiency

As a large part of digital infrastructure, artificial intelligence using massive data can solve complex problems that used to be solved manually by human beings through intelligent learning algorithms, and artificial intelligence also plays a significant role in data analysis, image recognition, intelligent customer service question and answer and other fields [3]. Through the automatic decision processing and massive information analysis of enterprise business, the new digital infrastructure with the new generation of information technology as the core can improve the work efficiency of enterprises in the process of product ordering, production and delivery, which is conducive to promoting the improvement of trade efficiency.

3.2. Reducing trade costs

Digital infrastructure promotes the integration of various technical modules, which is conducive to the formation of real-time and in-depth acquisition and mining of all kinds of trade data. The application of 5G, industrial Internet of Things, Internet and other technologies speeds up the transmission of information and forms efficient communication and transmission of information. Some scholars have pointed out that international trade is a process of searching and matching between sellers and buyers [4]. With the help of new digital infrastructure, on the one hand, merchants participating in international trade can obtain information of new markets more effectively and conveniently, provide advertisements to buyers existing in many markets, and reduce the search cost of entering foreign markets. On the other hand, digital infrastructure improves the rate of information transmission. Compared with the previous generation of interconnection technology, 5G, industrial Internet of Things and other connection methods provide relatively faster, more efficient and more stable data and information transmission, which greatly improves problems such as information asymmetry.

3.3. Expand trade scale

The use of digital infrastructure makes "online" transactions and communication forms more common. "zero-delay" online communication and convenient online operation, and high-speed network transmission rate enable information and data to be shared within minutes and seconds. After overcoming the time constraint, Digital infrastructure can make trade forms more flexible, trade information more unimpeded and trade exchanges more frequent, which is conducive to increasing friendly exchanges between the two sides. [5] The organic integration and coordination between 5G, big data and other technology modules can overcome the constraints on physical space in international trade, so as to help import and export enterprises effectively obtain accurate market information, improve the matching efficiency between supply and demand of both parties, more effectively realize remote transactions in international trade, and expand the scale of trade.

3.4. Promoting factor mobility

Through the organic integration of various technology modules, digital infrastructure can accelerate the flow of factors, play the linkage role between factors, and promote the growth of China's foreign trade volume. Through the new infrastructure, different factors of production across regions, industries and devices can flow freely and function as an organism through a series of connected means such as cloud computing and the Internet of Things. At the same time, digital infrastructure can turn information and data into new factors of production, and generate "learning effect" through intelligent learning and network algorithms, thus realizing the dissemination of knowledge and accelerating the sharing of information and data [6]. Therefore, digital infrastructure can accelerate the flow of factors, expand the synergistic effect between factors, and help promote China's foreign trade.

4. ENLIGHTENMENT OF DIGITAL INFRASTRUCTURE CONSTRUCTION ON CHINA-ASEAN TRADE POTENTIAL

4.1. Strengthen cooperation in digital infrastructure construction

China should comprehensively consider the development conditions and demands of digital economy of ASEAN countries, clarify the cooperation priorities of each country, and promote cooperation in a differentiated manner. Specifically: on the basis of enhancing people-to-people exchanges and policy communication with Malaysia, we will train digital technology talents through joint education, focusing on application cooperation in e-commerce, cashless payment, sharing economy and other fields; China will strengthen policy communication and financial cooperation with Thailand, guide domestic capital to invest in the local Internet application market, and help Thai enterprises accelerate digital transformation. China and the Philippines should take advantage of geographical advantages to jointly build a cross-border logistics center in the fields of platform construction and digital infrastructure, and strengthen cooperation and support in the fields of digital media application and digital finance. For Singapore, we should strengthen people-to-people exchanges and policy communication, enhance political mutual trust, and promote cooperation in artificial intelligence, AI services and smart city construction. Priority should be given to digital infrastructure cooperation with Indonesia, and cooperation on digital technology application should be given to enhancing local e-participation and invigorating the Internet and e-commerce industries. We will deepen cooperation with Vietnam on digital infrastructure and accelerate the layout of 5G base stations, while helping Vietnam build a modern and secure digital payment system.

4.2. Strengthen policy communication and coordination

A stable and benign global and regional political and economic order is an important guarantee for China-Asean trade. At present, the global and Southeast Asian political and economic order has great uncertainties. China should actively strengthen policy communication with ASEAN member states and actively build a stable and benign global and regional political and economic order. Specifically, first, China should make full use of existing cooperation mechanisms to strengthen policy communication with ASEAN and strive to reach policy consensus. Second, we should actively promote bilateral summit diplomacy, further strengthen high-level exchanges of visits and political dialogue with ASEAN member states, strengthen the management of differences, make response plans and build consensus on cooperation and development.

5. CONCLUSION

China and ASEAN countries should jointly strengthen the security of digital infrastructure, build a cross-border cyber security incident response information sharing system, and enhance understanding of cyber security laws and policies between the two sides. Jointly enhance cyber security capabilities, prevent cyber attacks, secure critical information infrastructure, and enhance regional capacity building cooperation. In addition, China should vigorously improve its independent innovation capability and consolidate its initiative in FDI in the future through scientific and technological progress.

Among the ten ASEAN members, there are not only newly industrialized countries such as Singapore, but also countries such as Cambodia and Laos, which are very backward in economic development, with obvious differences in economic development stages and levels. Therefore, in view of the specific situation of economic and trade cooperation between China and ASEAN countries, diversified import and export trade should be carried out to stabilize and deepen economic and trade exchanges with ASEAN countries.

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