

The Impact of Digital Economy Development on the Growth of Agricultural Product International Trade

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Abstract: With the accelerated global digitalization process, the digital economy has become a new engine driving economic development. In the field of international agricultural trade, the development of the digital economy has not only transformed traditional trade models and processes but has also greatly promoted improvements in trade efficiency and the expansion of trade scale. This paper starts from the concept and characteristics of the digital economy, thoroughly analyzing the mechanisms through which the digital economy influences the growth of international agricultural trade. It also explores the opportunities and challenges it brings and proposes strategic suggestions to promote the growth of international agricultural trade.

Keywords: Digital economy development; Agricultural products; International trade growth; Impact

Introduction:

In the context of global economic integration, international agricultural trade serves as an important link connecting the economies of various countries. Its development directly affects global food security and sustainable agricultural development. However, traditional models of international agricultural trade face issues such as information asymmetry, high transaction costs, and low logistical efficiency, which limit further trade development. As digital technology continues to innovate and be applied, the digital economy is gradually permeating all aspects of international agricultural trade, bringing new opportunities and challenges for trade growth.

1. Concept and Characteristics of the Digital Economy

1.1 Concept of the Digital Economy

The digital economy refers to a series of economic activities that use digital knowledge and information as key production factors, rely on modern information networks as important carriers, and use information and communication technology effectively to boost efficiency and optimize economic structure^[1]. It encompasses the application of emerging technologies such as the Internet, big data, artificial intelligence, the Internet of Things, and blockchain in various fields.

1.2 Characteristics of the Digital Economy

First, it is data-driven, with data being the core resource, creating value through the collection, analysis, and use of data. Second, it is network-based, breaking geographical limitations and achieving global interconnectivity through modern information networks. Third, it is intelligent, as technologies such as artificial intelligence and the Internet of Things give the digital economy a high degree of intelligence and automation. Finally, it is innovative, encouraging new business models, products, and services to be explored continuously, driving sustained economic growth.

2. Mechanisms through Which the Digital Economy Influences the Growth of Agricultural Product International Trade

2.1 Reducing Trade Costs

Under the wave of the digital economy, the costs of international agricultural trade have significantly decreased. Firstly, the cost of information gathering has been greatly reduced due to the widespread application of Internet platforms. Buyers and sellers can easily cross geographical boundaries and access detailed and accurate market information in real-time, improving information

transparency and saving significant labor and material resources previously wasted due to information asymmetry in traditional trade. Secondly, communication costs have been lowered by efficient digital communication tools such as email and video conferencing, allowing buyers and sellers, even in different parts of the world, to interact instantly, reducing decision-making cycles and improving communication efficiency. Lastly, the rise of third-party payment platforms and digital currencies has simplified payment processes, reducing fees and time costs associated with cross-border payments, providing more convenient and secure solutions for the flow of funds in international agricultural trade.

2.2 Improving Trade Efficiency

On one hand, the integration of cutting-edge technologies like the Internet of Things and blockchain has brought revolutionary changes to the logistics of agricultural products. The Internet of Things enables real-time monitoring and transmission of key data such as temperature, humidity, and location during transportation, ensuring product safety and quality. Blockchain technology ensures the immutability and traceability of logistics information, greatly enhancing supply chain transparency and trust, thereby improving logistics efficiency. On the other hand, simplifying trade processes has also sped up trade. Electronic contracts eliminate the cumbersome need for paper documents, and online payments accelerate the flow of funds, collectively shortening the trade cycle, allowing transactions to occur more quickly and improving overall trade efficiency.

2.3 Expanding Trade Markets

The development of the digital economy has greatly expanded the market boundaries for international agricultural trade. The rise of cross-border e-commerce platforms has opened a new direct channel for agricultural products to reach global consumers. These platforms not only bring together buyers and sellers from around the world but also, through intelligent recommendation systems and multilingual interfaces, remove language and cultural barriers, enabling agricultural products to easily cross borders and attract the attention of global consumers. Additionally, the digital economy promotes the construction of a deeper international trade network by strengthening economic and trade cooperation between countries and building closer and broader trade partnership networks. Supported by this network, agricultural products can more easily enter more countries and regions, enjoy broader market space and better resource allocation, thus achieving sustained trade growth and continuous optimization of trade structures^[2].

2.4 Optimizing Trade Structures

The digital economy plays a key role in optimizing the structure of international agricultural trade. On one hand, the deep application of big data and the Internet of Things provides strong technical support for improving the quality of agricultural products. By analyzing big data, producers can accurately grasp market demand and consumption trends, optimize production structures, and improve agricultural yields and quality. At the same time, the Internet of Things enables the fine management of every aspect of agricultural production and sales, ensuring product safety, freshness, and traceability, meeting the high-quality standards of international markets. On the other hand, the digital economy promotes the vigorous development of agricultural product branding. In the digital age, branding has become one of the core elements of business competitiveness. Through e-commerce platforms and social media, agricultural brands can more easily reach global consumers and showcase their unique products and brand values. The digital economy also provides abundant marketing tools to help agricultural brands achieve precise positioning and differentiated competition, enhancing brand awareness and reputation, thus securing a more favorable position in the international market.

3. Opportunities and Challenges for Agricultural Product International Trade Growth in the Context of the Digital Economy

3.1 Opportunities

The development of the digital economy helps lower trade barriers and promotes the liberalization and facilitation of international agricultural trade. With the widespread adoption of digital technologies, emerging markets have become key growth points for international agricultural trade. In addition, the continuous innovation and application of technologies such as big data and artificial intelligence have provided new momentum for the growth of international agricultural trade.

3.2 Challenges

In some countries and regions, infrastructure development lags, limiting the application of digital technologies in international agricultural trade. As the degree of digitalization increases, network security issues have become increasingly prominent, posing potential risks to international agricultural trade. The rapid development of the digital economy has significantly increased the demand for talent, while a shortage of skilled professionals has become a critical factor constraining the growth of international agricultural trade.

4. China's Practice in the Growth of International Agricultural Trade in the Digital Economy

The Chinese government attaches great importance to the development of the digital economy and has introduced a series of policies to support the growth of international agricultural trade. For example, documents such as the *Digital Rural Development Strategy Outline* and *Guiding Opinions on Promoting the Development of Rural E-commerce* provide policy guarantees for the development of the rural digital economy. China continues to invest heavily in rural internet infrastructure, increasing the internet penetration rate in rural areas. By the end of 2021, China's rural internet penetration rate had reached 57.6%, providing strong support for the digital transformation of international agricultural trade.

China's cross-border e-commerce development is advancing rapidly, becoming an important force driving the growth of international agricultural trade. Through cross-border e-commerce platforms, Chinese agricultural products can be directly sold to global consumers, enhancing the international visibility and competitiveness of these products. China actively promotes the application of big data, artificial intelligence, and other technologies in international agricultural trade. For instance, big data is used to analyze market demand and consumption trends, providing precise guidance for agricultural product exports; the Internet of Things is used to ensure the transparency and traceability of agricultural product logistics; and blockchain technology is employed to enhance the security and credibility of agricultural product transactions.

5. Strategic Recommendations to Promote the Growth of International Agricultural Trade

5.1 Strengthening Infrastructure Construction and Digital Transformation

To solidify the foundation of international agricultural trade, it is essential to continuously increase investment in rural internet infrastructure, aiming to improve the breadth and depth of network coverage, while enhancing transmission speed and stability. This will help ensure that farmers across all phases of production, processing, and sales can seamlessly connect to and benefit from high-quality network services, opening the door to global markets. In addition, promoting the digital transformation of agriculture is equally critical. The government should introduce more incentive policies to encourage agricultural enterprises, cooperatives, and individual farmers to embrace digital technologies. By adopting smart agricultural Internet of Things systems and precision agricultural management systems, technology can empower the sector, achieving intelligent and refined management of agricultural production, thereby significantly improving productivity and the quality of agricultural products^[3].

5.2 Improving Cross-Border E-Commerce Platforms and Trade Rules

To further enhance trade efficiency and security, deeper cooperation with cross-border e-commerce platforms is required. This includes continuously optimizing and upgrading platform functions, improving user experience, simplifying trade processes, and enhancing platform security to provide buyers and sellers with a more convenient and efficient trading environment. Furthermore, considering the unique characteristics of agricultural trade, specialized services such as agricultural product quality traceability and cold chain logistics should be introduced to lower trade barriers and costs, thus boosting market competitiveness. Moreover, a comprehensive regulatory system for cross-border e-commerce should be established, clearly defining regulatory responsibilities and strengthening oversight to ensure that trade activities comply with legal requirements. Additionally, cooperation with international organizations should be strengthened to promote the development of unified cross-border e-commerce trade rules and standards, eliminating trade barriers and ensuring fairness and transparency in international agricultural trade.

5.3 Strengthening Talent Development and Recruitment

Given the current industry's urgent demand for digital skills, a series of specialized training programs should be implemented. These programs should not only cover basic digital operational skills but also delve into specific areas of agricultural international trade, cultivating a group of professionals who are proficient in agricultural production management and familiar with the digital economy. By combining theory with practical teaching methods, these training programs will improve the digital literacy and skills of industry personnel, providing a solid talent foundation for the digital transformation of international agricultural trade. To attract more high-end talent in the digital economy, a range of incentive policies should be actively formulated and implemented, including competitive salaries, well-developed career development paths, and a favorable work-life environment. Additionally, innovation platforms should be established to provide talent with opportunities to showcase their abilities, stimulating their creativity and innovation.

5.4 Enhancing International Cooperation and Exchange

In today's globalized world, it is crucial to actively participate in the formulation and discussion of international rules for the

digital economy and agricultural trade. By sharing experiences and offering constructive suggestions, China can seek to have a louder voice on the international stage, striving for more influence and benefits in the global trade system. This will not only help maintain the international competitiveness of Chinese agricultural products but also provide a fairer and more advantageous trade environment for Chinese enterprises in the global market. At the same time, efforts should be made to actively seek cooperation opportunities with other countries and regions, jointly promoting international cooperation projects in the field of the digital economy and agricultural trade. By enhancing policy communication, technical cooperation, and market alignment, resources can be shared, and mutual strengths leveraged to achieve mutual benefits. The successful implementation of these cooperation projects will not only drive further growth in international agricultural trade but will also bring tangible economic and social benefits to all participating parties, contributing to global economic prosperity and development^[4].

5.5 Focusing on Cybersecurity and Privacy Protection

In the process of deeply integrating international agricultural trade and the digital economy, cybersecurity and privacy protection cannot be overlooked. It is essential to take effective measures to strengthen safeguards in this field. First, establishing a comprehensive cybersecurity protection system is a top priority. Advanced cybersecurity technologies and equipment should be introduced to ensure comprehensive and effective protection of data and information related to international agricultural trade. This includes strengthening the security of network infrastructure, implementing data encryption and backup measures, and establishing emergency response mechanisms to address potential cyber-attacks and data breaches. Secondly, it is important to enhance the education of personnel and consumers about privacy protection. By organizing training sessions and publishing educational materials, privacy protection knowledge can be popularized, raising awareness about privacy among everyone. Only when individuals fully understand the importance of personal information and privacy can a positive societal atmosphere be created in which everyone works together to protect these rights, ensuring that personal information and privacy are maximally safeguarded amid the wave of digital economy development^[5].

Conclusion:

The digital economy, as an important economic form of the new era, is changing the landscape and patterns of international agricultural trade at an unprecedented speed and scale. By reducing trade costs, improving trade efficiency, expanding trade markets, and optimizing trade structures, the digital economy has created unprecedented opportunities for the growth of international agricultural trade. In the future, as digital technologies continue to evolve and be innovatively applied, international agricultural trade will embrace even broader development spaces and prospects. To seize this historic opportunity, continuous efforts are needed to strengthen infrastructure construction and digital transformation, improve cross-border e-commerce platforms and trade rules, enhance talent development and recruitment, promote international cooperation and exchange, and focus on cybersecurity and privacy protection. Only by doing so can the advantages of the digital economy be fully utilized, driving the sustainable and healthy growth of international agricultural trade, and making greater contributions to global agricultural prosperity and food security.

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