



Construction of modern industrial system of Hainan free trade port -- Taking cross border e-commerce of agricultural products as an example

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Abstract. Based on the background of the construction of the modern industrial system of Hainan free trade port, taking the opportunity of the adjustment of Hainan's industrial structure, this paper conducts an in-depth study on the cross-border e-commerce industry of agricultural products in Hainan, taking coconuts in the planting industry and aquatic and marine products in the fishery as examples, explores the development of the cross-border e-commerce industry of agricultural products in the construction of the modern industrial system of Hainan free trade port, and puts forward the corresponding optimization strategies.

Keywords: Hainan free trade port; Modern industrial system; Cross border e-commerce of agricultural products

1 Introduction

As a major agricultural province, Hainan has unique advantages in developing cross-border e-commerce of agricultural products with its unique tropical agricultural products, rich product types and superior geographical location. In 2018, the construction of Hainan free trade port provided unprecedented development opportunities for cross-border e-commerce in Hainan [1-2]. The construction of free trade port has created more convenient import and export conditions for Hainan, and also provided Hainan with more competitive product exports. With the development of Hainan's characteristic agriculture, the cross-border e-commerce of aquatic and marine products will also have greater convenience. The continuous expansion of trade will attract more international investment to participate in the upgrading of Hainan's industrial structure, which will inevitably lead to the expansion of the international trade scale of various industries in Hainan [3-4]. In recent years, in order to have a good business environment for cross-border e-commerce enterprises, Hainan has implemented a number of policies and programs in recent years [5-8]. With the strong support of national and local poli-

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cies, facing the increasing market demand, the cross-border e-commerce of Hainan free trade port has shown a sharp increase trend, and the growth rate has basically reached more than 30% in recent years (Figure 1).

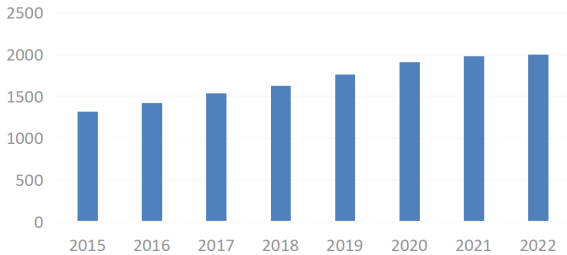


Fig. 1. cross border e-commerce transaction scale of Hainan free trade port from 2015 to 2022 (RMB: 100 million)

2 Construction of modern industrial system of Hainan free trade port

At present, Hainan free trade port has initially built a modern industry, but the adjustment of industrial structure needs to be optimized. From the perspective of the change process of Hainan's industrial structure, at first, Hainan Province was dominated by agriculture, and then the tertiary industry became a pillar industry. The average annual growth rate of tropical agriculture and industry in Hainan was lower than that of the tertiary industry. During the 13th Five Year Plan period, with a series of support funds and policies for key industries, Hainan's industrial structure has been significantly optimized. Compared with the evolution law of industrial structure in other regions, the change of industrial structure in Hainan is relatively unique. It has not gone through the development transition period of industry as the leading industry, but directly transformed from the industrial structure dominated by the primary industry to the industrial structure dominated by the tertiary industry. In general, Hainan's real economy is weak and its industrial system is incomplete. However, as a major representative of the development of island economy, Hainan has a special relative independence of the island economy, which also means that Hainan needs to establish a more complete industrial system. This practical contradiction also determines that Hainan needs to constantly optimize its industrial structure and build a modern industrial system in the process of promoting the construction of a free trade port. At the present stage, when adjusting the industrial structure, Hainan needs to take industrial upgrading as the development assistance, take improving the technological innovation ability as the core, further improve Hainan's position in the division of labor in the global value chain, especially pay attention to the position of Tropical Agriculture in Hainan's industrial system, and pay attention to promoting the transformation and upgrading of Hainan's characteristic agriculture.

3 The construction of Hainan free trade port promotes the deep integration of digital economy and real economy

3.1 Development advantages

Hainan free trade zone has outstanding policy advantages, not only in the macro top-level design, but also in the field of micro policy implementation. In the process of integrating the digital economy and the real economy in Hainan Province, Hainan free trade port has planned more than 11 key construction parks, and has successively issued more than 30 guidelines to ensure the deepening reform of the digital industry in the port (Table 1). In order to effectively promote the implementation of the policy, the general office of the Hainan provincial Party committee and the general office of the Hainan Provincial Government jointly issued the action plan for the integration and innovation of the free trade port system in Hainan Province, and formulated a series of work guidelines and task lists to promote the all-round development of the digital economy in Hainan Province. In addition, Hainan free trade port is an important port for China's economy to flow into the world economy, and also the forefront of the country's opening up to the outside world. It has unique advantages in the development of digital economy.

Table 1. List of current main supporting policies

Supportive policies	content
Cross border trade facilitation	Measures to improve the level of cross-border trade facilitation and support the high-quality development of foreign trade
Foreign capital access	Special Administrative Measures for foreign investment access of Hainan free trade port
Convenient cross-border capital flow	Hainan free trade account, implementation of qdlp and qflp cross-border capital two-way investment channel, etc
Relaxation of market access	Some special measures for market access in Hainan
government grants	High tech enterprises, talent introduction, etc

3.2 Development issues

In the process of deep integration of digital economy and real economy of Hainan free trade port, the problem of slow infrastructure construction still exists. The broadband transmission of Hainan free trade port is slow, and the development of 5g layout is relatively backward, which will also affect the implementation efficiency of data interconnection between Hainan free trade port and various countries. In addition, in the process of developing the digital economy, Hainan is facing the realistic problems of low international competitiveness and weak development level. In the industrial structure of the global digital economy, China's overall competitiveness is weak, especially in the digital economy. At present, leading enterprises with strong international

competitiveness have not emerged, and Hainan free trade port lacks sufficient voice in the global digital economy layout. From the perspective of the regulatory mechanism, Hainan has not yet introduced the relevant internal regulatory mechanism for the development of the digital economy, which leads to the infringement problems and disputes in the development process, and will also affect the standardized development of the digital economy industry in Hainan free trade port.

4 Opportunities and strategies for cross border e-commerce development of agricultural products in Hainan free trade port

4.1 Opportunities for cross-border e-commerce development of agricultural products in Hainan free trade port

(1) Cross border e-commerce logistics system gradually improved

With the growing development and maturity of cross-border e-commerce, a cross-border e-commerce ecosystem has formed with it as the core, covering transaction services, technical information, government management, infrastructure and other features. It can strengthen the construction of "sea, land and air" integration, realize joint cooperation with countries along the "belt and road", jointly formulate unified logistics service standards, and share efficient cross-border logistics distribution schemes related to logistics information. In addition, we have vigorously supported local cross-border e-commerce enterprises in Hainan, established bonded warehouses and overseas warehouses, built a cross-border e-commerce commodity traceability system, successfully optimized the cross-border mail declaration system, and reduced the time required for international express delivery. Based on international standards, optimize the cross-border e-commerce logistics platform, improve the cross-border logistics infrastructure of Hainan free trade zone one by one, complete the construction to meet international logistics standards, continuously optimize the functions of the cross-border logistics platform, and comprehensively build the logistics information platform, so as to consolidate the logistics strength of the operation and development of cross-border enterprises in Hainan free trade zone [8].

(2) The elements of industrial supply have gradually changed to "advanced

The background of the construction of Hainan free trade port will make profound changes and adjustments to the supply factors such as technology, capital, land and labor in the cross-border e-commerce of agricultural products in Hainan, which will drive these factors to develop in the direction of intelligence, high-end and sustainability, and become a powerful driving force for the reform and adjustment of industrial structure. With the acceleration of the construction of smart Hainan, the supply of digital technology will also be more in-depth and more widely lead the adjustment of industrial structure. At the request of smart Hainan, Hainan free trade port needs to advance the layout of 5g technology and new infrastructure such as Internet of things, artificial intelligence and cloud computing. This means that Hainan will build a comprehensive digital industrial chain from manufacturing to products, from technology to

application, on this basis. This is bound to have a far-reaching impact on the overall industrial structure of Hainan. In addition, under the background of smart Hainan digital construction, enterprises are inevitably required to invest more R&D funds and resources to further promote the deep integration of production, learning and research, which can effectively improve the conversion rate of achievements. With the acceleration of the construction of free trade port, the continuous increase of population and the gradual implementation of some large projects, the industrial cluster effect of Hainan will be further expanded in the future, which is bound to drive the optimization and adjustment of industrial structure.

(3) The scope of trade continues to expand and the business environment continues to be optimized

In 2020, the central government proposed to give full play to the advantages of China's super large-scale market and the potential of domestic demand, and further promote the new development pattern of domestic and international double circulation. Under this policy guidance, Hainan's policy advantages and geographical advantages will be further amplified, which can effectively enhance the attractiveness of Hainan's investment. After the inflow of international capital, it will drive Hainan's key industrial chain, improve the level of modernization, and help build new industrial growth points. With the continuous optimization of policies, the business environment in Hainan will be significantly improved, further promoting the development of cross-border e-commerce in Hainan (Table 2).

Table 2. Description of cross border e-commerce mode of agricultural products

Cross border e-commerce mode of agricultural products.	
B2C-Import	At present, there are many domestic cross-border e-commerce import platforms, such as tmall global, koala shopping, jd.com, etc
B2C-Import	At the initial stage, restricted by the low service level of domestic agricultural products export supply chain and the limited categories of exportable products, there are a small number of agricultural products on Alibaba Express.
B2B-Import	In the period of digital transformation, the provision of transaction matching services has gradually transformed into a digital platform. With the help of investment promotion live broadcast, Video Exhibition broadcast, live purchase and other methods, the matching transaction scenario has been reconstructed.
B2B-Export	In the growth period, it is characterized by small scale, few platforms, slow development and great potential.
B2B2C-Import	It has become a new growth point for the development of the industry. With the support of big data cloud computing, the Internet of things, blockchain and other information technologies, community e-commerce and logistics home industries have been innovated to achieve online and offline Omni channel scenarios.
B2B2C-Export	With the overseas warehouse as the core, it provides agricultural products enterprises with complex and diversified services such as direct purchase of origin, direct mail, which greatly improves the facilitation level of cross-border e-commerce export of agricultural products.

4.2 Dilemma of cross-border e-commerce development of agricultural products in Hainan free trade port

(1) The characteristic advantages of tropical agricultural industry are not fully developed

Agriculture is an important industry in the development of Hainan. The level of agricultural modernization is also one of the key factors affecting the structural upgrading of the modern industrial system of Hainan free trade port. Hainan itself has the inherent advantage of developing tropical agricultural characteristic agriculture, but the growth rate of Hainan's primary industry is relatively slow. At this stage, the development of Hainan's agriculture is still facing the problem of low production value and high proportion, which does not give full play to the industrial advantage of Hainan's characteristic tropical agriculture, indicating that the overall industrial structure development efficiency of Hainan's tropical agriculture is low. In fact, when developing tropical agriculture, Hainan not only has good planting advantages and product advantages, but also has rich tropical planting resources and tropical marine resources, as well as policy support and export advantages. However, at present, Hainan is not deep enough in mining the regional tropical agricultural resources, especially the low output value of coconut, rubber, areca and other industries, and the growth rate is slow, which does not give full play to the advantages of diversification of Hainan's agriculture, fishery and other industries. In terms of the output of aquatic and marine products, the development momentum is not good, and the effect is not significant in the large-scale and brand construction of agricultural industrialization. At present, the value chain extension of Hainan tropical agricultural products processing industry is relatively short, and the phenomenon is more prominent in the two major fields of agricultural products production and processing. In the production of agricultural products in Hainan, the downstream processing has been squeezed, which will also affect the development benefits of agricultural scale and integration, and it is difficult to play the basic role of agriculture in the upgrading of industrial structure.

(2) Industrial cluster construction lags behind

From the perspective of industrial clusters, although Hainan has gradually formed an industrial structure with tourism, modern service industry and high-tech industry as the core, it has not generated a pillar industry with high demand elasticity and high industrial correlation that conforms to the requirements of market development. In particular, in the selection of industries in some regions, the local resource endowment has not been fully considered, the industrial correlation between cities is low, the development of Industrial Synergy benefits is poor, and the development of industrial clusters lags behind.

(3) Lack of product quality certification, credit system construction needs to be strengthened

When developing cross-border e-commerce of agricultural products, Hainan has not yet established a unified and standardized product quality certification system. Most of the enterprises carrying out cross-border e-commerce in Hainan Province are small and medium-sized enterprises, with small order batches, many batches, short procurement cycle, low degree of scale, and the overall cross-border e-commerce industry chain is

not perfect. These factors have led to the difficulty of fully controlling the product quality in the development of cross-border e-commerce of agricultural products in Hainan. In addition, cross-border e-commerce has high requirements for planting, production, processing, storage, quality supervision and other aspects. The imperfect quality certification system and credit system will increase the difficulty of the development of cross-border e-commerce industry.

4.3 Cross border e-commerce development strategy for agricultural products in Hainan free trade port

(1) Accelerate the integration of leading industries and focus on industrial digital upgrading

For the development of Hainan free trade port, to build a modern industrial system and boost the transformation and upgrading of the industrial structure, we need to adhere to the problem orientation and future orientation, and integrate the leading industries as soon as possible to promote the digital upgrading of the industry. In particular, we should grasp the development breakthrough of high-tech industry and modern service industry, pay attention to the development advantages of the new generation of information technology represented by big data, blockchain and cross-border e-commerce, so that the new generation of information technology can become the development driver to boost Hainan's industrial upgrading, and further enhance Hainan's competitiveness and influence.

(2) Improve the modern service industry system in Hainan and enhance the internationalization level of services

In the process of building the modern industrial system of Hainan free trade port, it is necessary to coordinate the proportion of various industries in the tertiary industry, improve Hainan's modern service industry, and comprehensively enhance the comprehensiveness of industrial services and the experience of consumer services. We should improve cross-border payment and cross-border consumption, reform the access mechanism of the service trade market under the mode of natural person mobility, and expand the opening up of modern service industries such as shipping services, trade services, and social services. We should focus on the development and innovation of modern service industries such as science and technology service industry, aviation logistics industry and e-commerce, and promote content innovation and the sinking of service objects. We should strengthen targeted publicity on the overall urban development, ecological environment and business climate of Hainan, and encourage large-scale exhibitions and related industrial construction projects at home and abroad to land in Hainan.

(3) Increase investment in cold chain and improve the level of cold chain

In the development of cross-border e-commerce of agricultural products in Hainan, it is necessary to actively cultivate tropical agriculture and transnational spatial industrial chain, and truly give play to the geographical and policy advantages of Hainan free trade port. For example, actively promote agriculture to go global, establish agricultural product export bases, cultivate transnational tropical agricultural industry groups, speed up the construction of Hainan seed value industry chain, and promote the sharing

of resources and the transformation of achievements. For the cross-border e-commerce of Hainan aquatic products, it is necessary to develop the cold chain logistics system as soon as possible, strengthen the construction of cold chain infrastructure, create high-quality and high-level fast cold chain channels out of the island as soon as possible, and provide high-quality cold chain logistics services. We should give full play to the advantages of the Internet of things technology, enhance the connection and monitoring degree of the cold chain system, and minimize the loss of products in the process of cold chain transportation. We can strengthen international cooperation in cold chain logistics and cooperate with overseas to build cold chain warehouses.

(4) Pay attention to the cultivation of comprehensive talents for cross-border e-commerce of agricultural products

For cross-border e-commerce of agricultural products, it is necessary to strengthen personnel training. Cross border logistics itself involves a large number of contents, which are highly professional and technical, and need more applied and compound practical talents. Under the background of the construction of modern industrial system of Hainan free trade port, enterprises should target their own development and cultivate and employ talents in line with their own development through multiple channels and aspects. We should actively promote the docking between industry, universities and research institutes, provide good talent support for cross-border e-commerce of agricultural products, and optimize the soft environment for development.

5 Summary

Under the background of the construction of free trade port, cross-border e-commerce trade of agricultural products in Hainan has achieved rapid development. For Hainan, it is necessary to fully tap the market potential of characteristic agricultural products in Hainan in combination with the existing resources. With the introduction of Hainan's 14th five year plan, the encouraging policies for many emerging industries have been gradually improved, and supporting policies for related industries are also being formulated and promoted. The free flow of elements has been continuously strengthened in all aspects, including taxation, technological innovation, investment and financing, and international cooperation, which is expected to form a complete policy system and institutional system covering the whole industrial chain. This means that the flow of industrial factors in Hainan free trade port will be more convenient, and the docking of market information will be more sufficient. Especially under the background of many favorable policies, it provides unprecedented opportunities for the development of cross-border e-commerce of agricultural products in Hainan.

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