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Original Paper

Research on the Key Paths of Enterprise Integration of Domestic and Foreign Trade from the Perspective of Knowledge Transfer

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Abstract

The issue of inefficient industry innovation caused by the segmentation of domestic and foreign trade markets has been prominent, leading to a long-standing "productivity paradox" between domestic and foreign trade. "Constructing a new pattern of integration of domestic and foreign trade with the domestic cycle as the main body and the mutual promotion of domestic and international cycles" is a strategic deployment of the Party Central Committee and the State Council. This paper investigates the problems and intrinsic mechanisms faced in the process of enterprise integration of domestic and foreign trade from the perspective of knowledge transfer. It clarifies that the primary task of integrating domestic and foreign trade is to solve the problem of inefficient knowledge transfer between domestic and foreign trade. At the same time, the study shows that: On the one hand, by constructing a horizontal system of knowledge transfer between domestic and foreign trade, it is possible to effectively enable foreign trade enterprises to enjoy the dividends of unified large market reforms, better integrate resources and standards with the domestic trade market, and promote the transfer of knowledge achievements of foreign trade enterprises to the domestic market. On the other hand, through vertical industrial ecological knowledge embedding, it can promote domestic enterprises to leverage the

advantages of domestic consumption scale, integrate technology, channels, and platform resources, achieve knowledge embedding of enterprises in the vertical ecological chain of industries, and ultimately achieve the goal of integrated development of domestic and foreign trade.

Keywords

integration of domestic and foreign trade, knowledge transfer, knowledge embedding

1. Introduction

The 19th National Congress of the Communist Party of China pointed out the need to "construct a new pattern of integration of domestic and foreign trade with the domestic cycle as the main body and the mutual promotion of domestic and international cycles." In response to this, the Central Committee of the Communist Party of China and the State Council issued the "Guiding Opinions on Accelerating the Construction of a Unified National Market." Building a unified national market is a strategic deployment for the new era, stage, and journey, serving as a crucial pivot in facing international political and economic challenges and forging a "more resilient economic development pattern."

According to classical trade theories such as the "Adam Smith Theorem" and emerging classical trade theories, domestic demand forms the basis for foreign trade, and the development of exports is a process of gradually cultivating dynamic comparative advantages relying on domestic demand. Additionally, new trade theories explicitly state that a country may gain sustained international competitiveness by exporting products with large domestic demand. However, the actual experiences of Guangdong, Fujian, Jiangsu, and Zhejiang, developed regions in domestic and foreign trade since China's reform and opening up, demonstrate a stark contrast with the aforementioned theories, characterized by the phenomenon of "emphasizing foreign trade while neglecting domestic trade" and "external strength but internal weakness".

In recent years, influenced by external factors such as international politics and economics, international trade frictions have continued to increase, leading to severe contraction in foreign trade demand. Due to the long-term reliance of domestic enterprises on foreign trade exports, the lack of capacity for enterprise integration of domestic and foreign trade has become apparent. After encountering obstacles in unilateral foreign trade markets, products cannot be swiftly redirected to meet domestic market demand. Whether seeking breakthroughs in foreign trade for foreign trade enterprises or seeking opportunities in domestic markets for domestic trade enterprises, both face significant pressures.

The main reason for this lies in the existence of a "knowledge gap" between market entities serving domestic demand and those generating a large number of exports. In other words, "export-oriented enterprises driven by foreign trade orders do not sell domestically, while domestic trade enterprises targeting the domestic market do not export." Therefore, the current "integration of domestic and foreign trade" lacks direct market entities at the micro level, making it crucial to address this "mismatch" of market entities to advance the construction of integrated domestic and foreign trade.

In the face of continuous changes in the global political, economic, and industrial landscape, advancing the construction of "integrated domestic and foreign trade" is the result of the combined effects of multiple factors, representing a strategic choice with certainty. However, how enterprises, as micro-market entities, can accomplish the transformation towards "integrated domestic and foreign trade" in different domestic and foreign trade environments is an open-ended question.

Domestic and foreign scholars have made numerous valuable attempts to address this open-ended question. Firstly, they have explored the theoretical framework of integrated domestic and foreign trade. Domestic scholars have mainly focused on the construction of theoretical frameworks at the macro level for integrated domestic and foreign trade. Wang and Zhu (2023) argue that the construction of a unified domestic market is the result of effective collaboration between the market and a proactive government. The government provides institutional guarantees for the horizontal circulation of the market, while the market, through adaptive mechanisms, assists the government in coordinating resource allocation. Liu and Liu (2023) have constructed a basic framework for integrated domestic and foreign trade from the perspectives of industrial resource allocation, macro policy regulation, and market standard construction. They have analyzed the mechanism of the national unified market and its role in the new development pattern based on market size, structure, and function. Tan et al. (2023) point out that promoting the development of integrated domestic and foreign trade through the construction of a national unified market is an intrinsic requirement for realizing the new development pattern of dual circulation. It is necessary to adhere to the development concept with domestic circulation as the main focus and further improve the framework of the unified national market through regulating market entities, formulating competition mechanisms, and promoting regional integration. Related studies have shown that promoting the development of integrated domestic and foreign trade is an inevitable requirement for China's economic development and is of great significance for eliminating industry information barriers, breaking market segmentation, regulating market entities, and promoting fair competition.

Secondly, scholars have focused on the micro-level aspects of integrated domestic and foreign trade entities. Some researchers have suggested that it is essential to clarify the market entity status of enterprises in the process of integrated domestic and foreign trade, fully leverage their role in guiding the circulation of domestic and foreign trade, and their ability to access external innovative resources. Others have pointed out that the process of integrated domestic and foreign trade primarily involves the integration of supply chains, which horizontally promotes the circulation of domestic and foreign products and factors, and vertically promotes the upgrading of industrial structure. In the process of integrated domestic and foreign trade, the construction of a unified national market should be effectively grounded in enterprises, the key economic entities. From the perspective of enterprises, it is essential to horizontally implement the circulation of products and factor endowments between domestic and foreign markets and vertically complete the optimization and upgrading of industrial structure, comprehensively enhancing the global market competitiveness of domestic enterprises.

Indeed, in the process of integrated domestic and foreign trade, the two theoretical explanations mentioned above have become increasingly crucial. This is not only because they clarify the impact of integrated domestic and foreign trade on the construction of a unified national market but also because they provide a foundation for further exploring the interactive relationship between the construction of a unified national market from the perspective of integrated domestic and foreign trade. However, the question of whether the ability evolution model based on the "individual adaptation to the environment" in evolutionary theory originates from the proactive choices of enterprises or passive adaptation has long been a blind spot in existing research fields.

Existing research has two main limitations. Firstly, it tends to focus on exploring the "passive choice" factors of enterprises in the process of integrated domestic and foreign trade while neglecting the "subjective choices" of enterprises influenced by multiple factors. It must be acknowledged that the choice of integrated domestic and foreign trade is a complex decision influenced not only by objective factors such as the political environment and market competition but also by the active choices made by enterprise entities based on their knowledge accumulation during the process of domestic and foreign trade. The factor that has the greatest influence on such subjective choices during the process of integrated domestic and foreign trade is the "knowledge spillover effect."

Secondly, existing research has not provided the pathway for the process of integrated domestic and foreign trade by enterprises. Although different factors show that enterprises choosing to participate in the construction of a unified national market through integrated domestic and foreign trade have a "net benefit," exploration of the path of "domestic trade + foreign trade" (or "foreign trade + domestic trade") to achieve $1+1>2$ has not been undertaken. The existing theoretical research on "integrated domestic and foreign trade" lacks a micro perspective from the market entity "enterprise," and there is little literature discussing how enterprises can achieve technological catch-up and independent innovation in the process of integrated domestic and foreign trade selection.

Undoubtedly, knowledge and its application ability are the source of modern enterprise innovation. If we can reveal the "formation process" of "knowledge" in the integrated domestic and foreign trade of enterprises and its "application relationship" during this process, it will not only contribute to a comprehensive understanding of the complexity of integrated domestic and foreign trade mechanisms but also provide clearer reference paths for enterprises to effectively implement integrated domestic and foreign trade. This paper researches the current problems and mechanisms faced by enterprises from the perspective of knowledge transfer in integrated domestic and foreign trade, proposes a theoretical framework for the vertical integration knowledge embedding of industries and the horizontal integration knowledge transfer of markets, and puts forward targeted policy suggestions for promoting the construction of a unified national market in the next step.

2. The Main Issue of Integrating Domestic and Foreign Trade

2.1 Domestic Market Segmentation Leads to Difficulties in Knowledge Transfer

The uneven development of regional economies in China exacerbates the challenge of knowledge transfer for enterprises transitioning from foreign trade to domestic trade due to domestic market segmentation. As revealed by the research of Lu and Chen (2009), market segmentation strategies are preferred by over 96% of Chinese provinces and regions because they can promote local economic growth within a certain period. However, in the long run, this market segmentation strategy will inhibit the healthy development of the overall market economy, technological innovation, and the upgrading of industries. Even though some regions have achieved industrial clustering, market segmentation continues to negatively impact their economic growth. Hu et al. attribute this phenomenon to the loss of enterprise innovation momentum caused by market segmentation, also known as innovation inertia. On the one hand, the concentration of high-end industries in certain areas gives them advantages in accessing funds, talents, and technological resources, resulting in insufficient competition in regional markets and the decline of innovation momentum in high-end industrial clusters. On the other hand, low-end industrial clusters lack new knowledge input due to limitations in resources such as talents and technology, leading to a lack of innovation in regional industries and a deepening reliance on low-end supply. Meanwhile, with the continuous development of the digital economy such as e-commerce, the problem of domestic market segmentation not only remains unresolved but also shows signs of further expansion. Research from the Institute of Economics of the Chinese Academy of Social Sciences on provincial technology diffusion barriers has found that the speed and scale of technology diffusion are constrained by various factors including inter-provincial geographic distance, market integration level, and industry relevance. Especially after 2008, the rapid popularization of digital technology in the circulation field has significantly strengthened the barriers to technology diffusion between different regions due to market segmentation. In the current new technological environment, the existence of technological barriers will further exacerbate market segmentation, hinder the upgrade of low-end industrial regions to high-end industries, and thus hinder the development of integrated domestic and foreign trade. This will not only limit the transfer of technology and knowledge but also affect the enhancement of enterprises' cross-regional competitiveness and innovation capabilities, thereby affecting the upgrading of domestic industrial structure and the growth of economic scale. The integration of domestic and foreign trade markets is a prerequisite for enterprises to achieve economies of scale based on the domestic market. However, market segmentation between different regions forces market scale to passively shrink, further weakening the scale effect required for building a unified large market. Consequently, some high-end industries with advantages in foreign trade lose their competitive edge in the process of transitioning to the domestic market, as foreign trade enterprises cannot effectively transfer relevant knowledge to meet domestic demand. Enterprises gradually lose the "subjective motivation" to transfer foreign trade knowledge to the domestic market. In other words, the knowledge capabilities accumulated by enterprises in the international market, under the backdrop of

domestic market segmentation, cannot be transferred and embedded in the domestic market based on the advantages of innovation, talents, and funds. This directly limits their ability to enjoy the development dividends brought by the super-large domestic market. Since the reform and opening up, China's export volume has grown rapidly at an average annual rate of 18%, while the average annual growth rate of inter-provincial trade volume is only 4.8%. The trade costs between different provinces are even higher than those between countries, forcing Chinese enterprises to prefer entering foreign markets and expanding their scale based on the international market.

2.2 The Reverse Lifecycle of Domestic and Foreign Trade Products Makes Knowledge Absorption Difficult

Raymond Vernon's product lifecycle theory effectively explains the inherent mechanism of international trade and is considered a classic path for entering global market integration by both academia and the business community. Vernon divides the product lifecycle into three stages: the new product stage, the mature product stage, and the standardized product stage. In the new product stage, with a large domestic market capacity, manufacturers' safest and most favorable choice is to design, produce, and sell domestically. After meeting domestic market demand, products are then exported to satisfy international markets. In the mature product stage, as production technology and experience gradually mature and economies of scale form, domestic market saturation occurs, and competition intensifies among industries. In this stage, it becomes more effective for enterprises to prioritize exporting products or engaging in foreign direct investment to access innovation resources or market capital. In the standardized product stage, costs become a core influencing factor for promoting technological innovation and product iteration. Therefore, prioritizing foreign direct investment helps enterprises establish cost advantages and enhance their competitiveness in international markets. In other words, according to the product lifecycle theory, the path for enterprises in developing countries to enter global market integration should involve nurturing and incubating products domestically until they fully meet local market demand before transitioning to export markets. However, the development trajectory of domestic and foreign trade enterprises in China compresses the process of nurturing and incubating products in the domestic market, instead relying on processing imported materials, technology introduction, and order procurement, gradually becoming participants reliant on a single foreign trade market. This places China's industries and trade integration level in the downstream position of the global industry, ultimately leading to entrapment in the vortex of the downstream of the global value chain. Existing research has indicated that long-term positioning the downstream of the global value chain will increase the technology research and development costs for domestic enterprises and restrict the transformation of low-end industries to high-end ones. Currently, with the acceleration of industrial innovation, the contradiction between international diverse demand and domestic industrial supply systems becomes more prominent. On one hand, amid the complex backdrop of global integration competition, adjustments in trade rules, industrial chain transfers, and the emergence of new trade entities continuously squeeze traditional foreign trade enterprises in China.

New market players from emerging developing countries such as India and Vietnam have joined, making the foreign trade market face a more complex and intense competitive environment. On the other hand, problems such as resource overlap and industrial technology barriers in the traditional trade system's supply chain will lead to a decline in enterprises' utilization of industrial resources, resulting in innovation stagnation in terms of industrial technology, channel information resources, etc. Following the successful industrial experiences of developed countries, using Vernon's product lifecycle theory as a guide, rapidly transforming the "industrial knowledge" formed in the domestic market into "innovation demand" in the international market after completing the first cycle of products in the domestic market is an important approach for industries to continuously gain global industrial competitive advantages. Research by Zhang Xueliang et al. shows that the construction of a unified national market contributes to increasing the proportion of domestic sales for export enterprises, alleviating the high dependence of enterprises on export business. This fundamentally lies in the "knowledge formation" of enterprises' domestic and foreign trade capabilities.

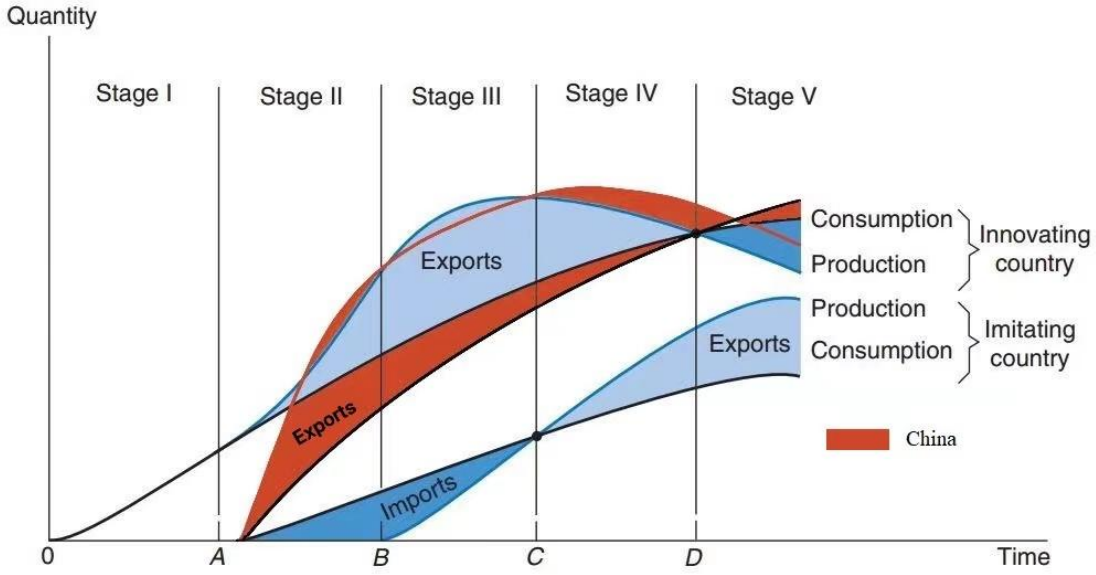

Figure 1. Vernon's Product Lifecycle Model

2.3 The Disparity in the Composition of Domestic and International Trade Topics Complicates the Integration of Knowledge

According to data from Fortune magazine, in the 2022 Fortune Global 500 list, there were 133 Chinese companies listed, surpassing the United States for the first time. Leading the pack were large conglomerates such as China Resources, COFCO, and Wumart. However, in the field of domestic and foreign trade, small and Medium-Sized Enterprises (SMEs) accounted for over 90% of the total. The average lifespan of these enterprises is less than 3 years, which is only half of that in developed countries like the United States.

Simultaneously, the concentration of enterprises in China's domestic and foreign trade has been

decreasing year by year. This trend has led to a mismatch in the position of domestic enterprises in the innovation process of the industry chain, making it difficult to achieve spillover effects from knowledge embedding. According to statistics from the China Statistical Yearbook, the proportion of total retail sales of consumer goods by designated size units has been decreasing year by year since reaching a peak of 50.76% in 2014, dropping to 33.66% in 2019, a decrease of 2.06 percentage points from the previous year.

The turnover of markets with transactions exceeding 100 million yuan as a proportion of total retail sales of consumer goods has also been declining from 2004 to 2019, with the proportion in 2019 being only 25.02%. In the retail sector, according to data from the well-known market research firm Kantar Consulting in May 2019, compared with mature overseas markets, the CR5 (the market share of the top five companies in terms of business scale) in Ireland, France, and the United Kingdom reached as high as 89.4%, while China's supermarket industry CR5 was only 26.7%. In the convenience store industry in Japan in 2018, CR3 and CR5 were 80% and 94% respectively, while in China they were only 26.4% and 37.5%.

The imbalance in the structure of trade enterprises in China has made it difficult for knowledge embedding to play a practical role in both the industry and between industries. With the continuous improvement of China's market economy system, the governance and supervision of the domestic market have become more mature. The coordination and allocation function of industrial resources by large trade enterprises has been further strengthened, and the development of industrial ecology has become increasingly apparent. However, the lack of knowledge embedding has led to prominent issues such as information barriers, lack of industrial standards, and low-end homogenized competition.

3. The Internal Mechanism of Integration of Domestic and Foreign Trade

With the deepening of market-oriented reforms and transformation in China, the domestic and foreign trade markets are increasingly showing characteristics of integrated development. Research by Yi et al. (2018) indicates that for large countries, implementing an export-driven model propelled by domestic demand is more conducive to the sustainable growth and transformation endogenous mechanism of industries compared to smaller countries. However, this model of domestic demand driven by large countries can only be achieved in a market environment where there is effective alignment between "domestic demand - local supply - export structure".

Zhang and Jin (2020), from the perspective of vertical governance of industries, point out that productive domestic demand-driven policies can promote the diffusion of technology within industrial ecosystems, thereby facilitating the circulation of factors endowments and the co-creation of knowledge systems. Based on an analysis of the bidirectional promotion between the domestic demand market and the international market in terms of domestic factor endowments, international market competition relationships, and the form of the global value chain, Wang et al. (2021) suggest that under the new development paradigm, well-implemented policy mechanisms are essential to drive domestic

demand. They argue that promoting the construction of a unified large domestic market is a necessary choice to expand the proportion of domestic consumption and realize the circulation of resources and factors. Additionally, setting high market standards and implementing high-quality management is crucial for promoting both internal and external market competition among enterprises and enhancing their independent innovation capabilities.

Therefore, under the new development paradigm, the construction of a unified large market system with internal and external trade integration at its core is a complex process involving multiple aspects. This process is not only crucial for enhancing the competitiveness of enterprises in the market but also for the overall development of the national industrial structure optimization. Specifically, it plays an important role in promoting the integration of domestic and foreign market industrial chains, adjusting the layout of industrial structures, and facilitating the flow of production factors.

In this sense, enterprises actively seeking the integration of domestic and foreign trade development are based on the intrinsic transformation of production and circulation relations in the new stage of development, marking a shift from a production-led to an innovation-led era. The success or failure of enterprises in choosing the integration of domestic and foreign trade depends on their ability to establish knowledge aggregation within the enterprise and the industry, bridging the gap between meeting the domestic market and serving the international market.

Moreover, due to the distinct regional clustering characteristics of enterprises with strong export capabilities in China, according to the theoretical model of regional innovation and knowledge transfer, the key to success lies in establishing a knowledge system as the core. This involves horizontally forming the absorption and transfer of knowledge between enterprises and the international market in terms of policies, resources, standards, and innovation. Vertically, it entails embedding knowledge of technology, channels, and platforms into industries, ecosystems, and governance structures. This process aims to drive overall innovation advantages in "Made in China" and "Chinese circulation," as depicted in the following diagram:

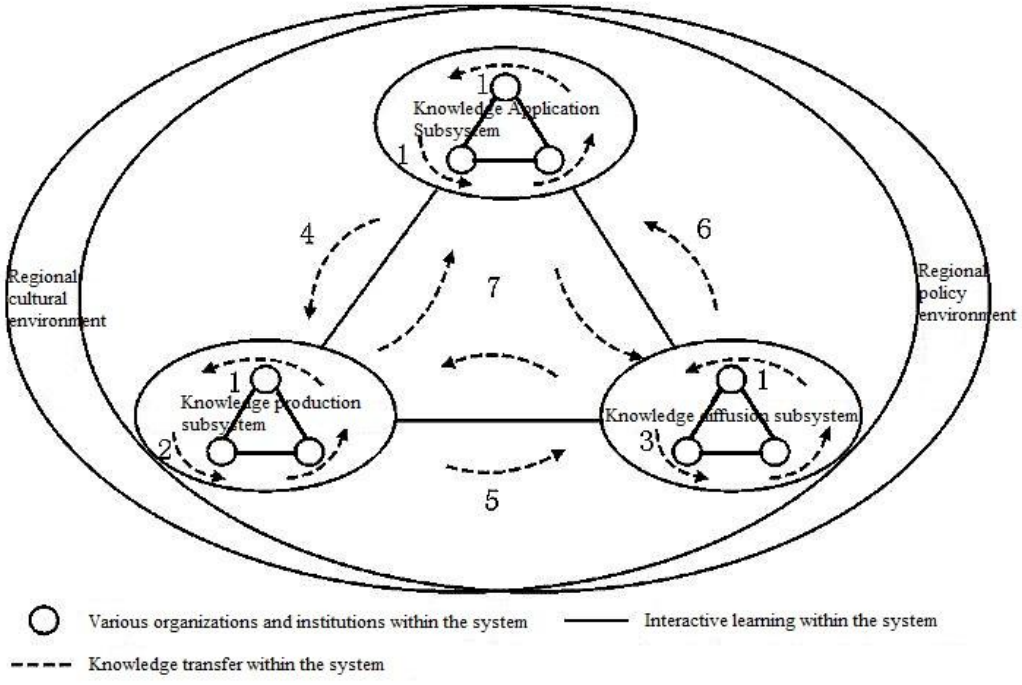

Figure 2. Model of the Relationship between Regional Innovation Systems and Knowledge Transfer

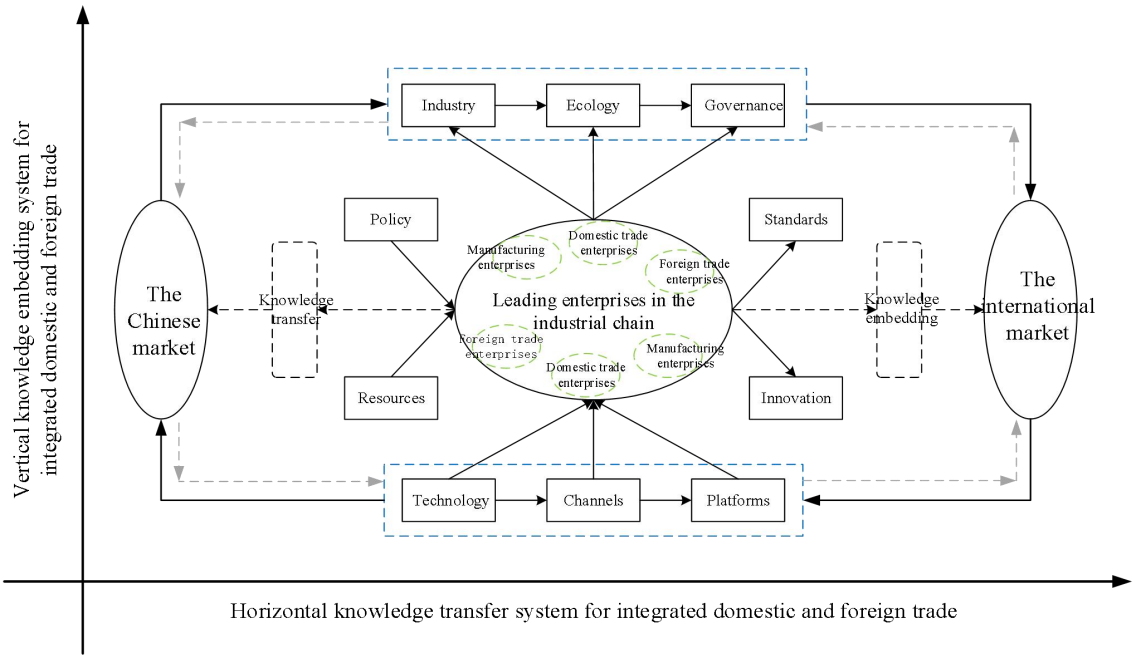

Figure 3. The Intrinsic Mechanism of Integration of Domestic and Foreign Trade

3.1 Build a Knowledge Transfer System Centered around "Foreign Trade" Enterprises

According to the theory of trade costs, the main determinant of a country's trading behavior is

productivity, whereby enterprises with relatively higher productivity tend to choose exports, while those with relatively lower productivity opt to serve only the domestic market. However, researchers have found a "productivity paradox" in the Chinese market, wherein domestic enterprises often exhibit higher productivity than exporting enterprises. Contrary to expectations, enterprises with lower productivity tend to engage more in exports. Further studies have revealed that the higher productivity of domestic market enterprises does not necessarily indicate a high quality of innovation. This paradox arises primarily from two factors: inadequate domestic market segmentation and poor market governance. Conversely, the lower productivity of exporting enterprises implies a higher quality of innovation. The difference between the two lies in the role of "innovative knowledge" in the production and consumption processes. This long-standing disparity has hindered the establishment of a domestic demand-driven export development model in China.

To achieve genuine domestic demand-driven exports, breakthroughs must first be made in the construction of the domestic and foreign trade knowledge system. Currently, export-oriented enterprises have significantly higher levels of knowledge compared to domestic trade-oriented enterprises. Therefore, establishing an effective knowledge transfer system between export-oriented enterprises with "high-quality knowledge" and domestic trade-oriented enterprises with "high-level market efficiency" is crucial in the process of domestic and foreign trade integration. The internal mechanism of this process is mainly achieved through four horizontal stages:

At the national policy level, it is necessary to accelerate the establishment of a knowledge transfer mechanism for domestic and foreign trade enterprises, strengthen cooperation among different regions, gradually weaken industry barriers between regions and domestic and foreign trade, and promote efficient and low-cost circulation of "innovative knowledge" between domestic and foreign enterprises.

Domestic trade enterprises need to fully exploit their advantages in "market efficiency," leverage policy dividends, actively participate in the construction of domestic and foreign trade integration, and fully absorb the "knowledge transfer" from export-oriented enterprises.

Actively promote the knowledge absorption of domestic and foreign trade enterprises regarding international standards. Standardization can effectively reduce the entry barriers to international markets, promote industrial technological innovation and quality management upgrades among domestic enterprises, and enhance their market competitiveness in the new product stage.

Promote knowledge transfer by domestic trade enterprises around the international market for innovation. Knowledge transfer is not unidirectional but rather a reciprocal process after absorption. Once domestic trade enterprises have absorbed knowledge, their market efficiency will inevitably lead to better innovation outcomes. This is also an important way for domestic enterprises to implement internationalization strategies, expand markets, increase revenue, reduce costs, and obtain resources.

This echoes existing research, suggesting that a large country's domestic demand-driven export model can better leverage its "large country-specific advantage" in domestic demand. Exporting only serves as the result of domestic enterprises' "self-selection" in market competition under open conditions, and the

improvement and structural upgrading of domestic supply capacity is the foundation and key to sustained economic growth.

3.2 Build a Knowledge Embedding System Centered around the "Chain Master" Enterprise

Innovations in high-tech fields often require highly specialized and complex technical knowledge, thus typically accompanied by characteristics such as high technological barriers, high capital investment, and high risks. These characteristics make it difficult for latecomers in technology to catch up with and surpass technology leaders in the short term, leading to their long-term "low-end lock-in" status. Especially in recent years, trade conflicts have intensified, making it increasingly difficult for a large number of small and medium-sized enterprises to access the latest "international knowledge". Relying solely on market mechanisms is insufficient to stimulate innovation vitality, thereby resulting in many enterprises facing the phenomenon of a "knowledge ceiling" in the process of integrating domestic and foreign trade.

Considering the reality that the imbalance in the structure of domestic enterprises is difficult to reverse in the short term, it is necessary to construct a knowledge-embedding system with "chain-leading" enterprises as the core. Zhang (2021) believes that the so-called "chain-leading" enterprises are those that occupy a core or dominant position in the supply chain, are able to control the most valuable part of the entire value chain and possess the ultimate discourse power. Chen and Chen (2021) suggest that "chain-leading" enterprises refer to those that hold a core position in the industry chain, have certain control over the industry chain, can leverage their comparative advantages, fully integrate and utilize external resources, coordinate upstream and downstream entities in the industry chain, and drive continuous innovation and iteration in the industry chain.

From the perspective of integrating domestic and foreign trade, "chain-leading" enterprises are characterized by strong capabilities in acquiring international knowledge while also possessing strong domestic market leadership. This includes their ability to embed knowledge in the domestic market in terms of industry, ecology, and governance, as well as their ability to transfer knowledge of international technology, channels, and platforms. These knowledge transfers, facilitated by "chain-leading" enterprises, become "embedded knowledge" in the entire industry ecosystem, providing new innovative space for many domestic and foreign trade enterprises facing the "knowledge ceiling".

3.3 Build a Knowledge Absorption System Centered around Domestic Trade Enterprises

The fundamental goal of the development of integrated domestic and foreign trade is to enhance the "independent innovation" capability of domestic trade enterprises, thereby forming a "dual circulation" pattern with the domestic large market as the core and international and domestic integration. The concept of "independent innovation" was proposed by Chinese scholar Chen Jin in 1994. He believed that independent innovation is a specific technological innovation paradigm for enterprises after digesting and absorbing technology introduced from abroad, where enterprises rely on their own research and development capabilities to achieve technological breakthroughs and obtain original

scientific and technological achievements. Due to the limitations faced by domestic enterprises in terms of technology, capital accumulation, market experience, and other aspects during the early stages of reform and opening up, domestic enterprises mainly focused on technology catching up. Their product research and development relied on technology introduction, followed by secondary innovation based on this foundation. For enterprises that start with technology introduction domestically, the evolution of their independent innovation capabilities starts with secondary innovation capabilities, transitions to integrated innovation capabilities, and eventually leads to the accumulation of original innovation capabilities (Xu et al., 2013).

Based on the fundamental view that "capability is essential knowledge," the ability of enterprises to identify, acquire, digest, and utilize knowledge, namely knowledge absorption capability, is crucial. The essence of enterprise innovation capability lies in its ability to absorb knowledge. The theoretical community has conducted sufficient research on how enterprises can effectively integrate internal and external resources to acquire and utilize knowledge, thereby improving their knowledge creation and technological innovation levels. Knowledge absorption capability can facilitate the transfer of external knowledge and technology for enterprises, aiding in new product development and consequently improving the technological innovation performance of enterprises (Shenkar & Li, 1999). Therefore, for domestic trade enterprises in the process of integrated domestic and foreign trade, the primary task is to accelerate their "knowledge absorption" capability. Subsequently, they continuously verify their "knowledge absorption" situation through the domestic large market and feed back their technological innovation, product innovation, and service innovation to enhance their competitiveness in the international market.

4. Strategies and Recommendations

Based on the perspective of knowledge transfer, the key path of integrated domestic and foreign trade development suggests that in the new era, the key to integrated domestic and foreign trade lies in the absorption, transfer, and embedding capabilities of enterprises regarding domestic and foreign trade knowledge. Furthermore, different types of enterprises have varied requirements for "knowledge capabilities." Export-oriented enterprises should focus more on improving knowledge transfer capabilities, while lead firms should prioritize enhancing knowledge embedding capabilities. On the other hand, domestic trade enterprises should pay more attention to cultivating knowledge absorption capabilities. Only when these three types of enterprises synchronously enhance their "knowledge capabilities" can China's integrated domestic and foreign trade truly achieve breakthroughs. Therefore, this study suggests that the government should further increase policy support in terms of knowledge integration system construction, knowledge embedding standard utilization, and knowledge transfer reward standards.

Firstly, accelerating the establishment of a knowledge integration system synchronized with the global market is crucial. With the rapid development of science and technology and the rapid iteration of the

international consumer market, the speed of industrial innovation continues to increase. The source of industrial innovation lies in the industrial knowledge system. It is necessary to expedite the establishment of an industrial knowledge system synchronized with the global market, strengthen the connection and certification standards of domestic and foreign trade rules around the upstream and downstream of domestic industries, construct a Chinese characteristic supply chain system with strong innovative knowledge capabilities, fully integrate global foreign trade rules and the whole industry chain innovation knowledge system, and continuously enhance the resilience and stability of China's supply chain. Simultaneously, speeding up the elimination of industry monopolies and local protection restrictions, fully activating the roles of foreign trade enterprises, lead enterprises, and domestic trade enterprises in industrial knowledge innovation, enhancing their collaborative creation capabilities in the unified national market ecosystem, and promoting the ascent of the industrial ecosystem to the upstream of the global value chain, thereby achieving the goal of building a strong trading nation.

Secondly, accelerating the improvement of the knowledge embedding transformation mechanism for domestic and foreign trade enterprises is essential. It is necessary to comprehensively sort out and optimize the existing intellectual property protection policies, systems, and mechanisms, further improve the protection of knowledge transfer, embedding, and absorption, which play a core role in the resilience of the supply chain, and eliminate policy restrictions and obstacles for enterprises at different levels of the industrial chain in the process of result transformation. Actively promoting collaborative mechanisms among higher education institutions, research institutions, and enterprises in the process of result transformation in strategic emerging industries, seizing the first knowledge cycle of future digital technology and technological revolution, accelerating the transfer of emerging technological achievements from laboratories to the unified large market, and better creating a market-oriented competition environment. Continuously deepening the reform of the domestic market system, encouraging traditional foreign trade and foreign-funded enterprises to participate more in the construction of the unified national market system, further expanding the overall scale and innovation capabilities of the domestic circulation market.

Thirdly, increasing the reward standards for knowledge transfer for domestic and foreign trade enterprises is necessary. It is imperative to fully implement the tax reduction and fee reduction policies and measures issued by the state and local governments, focusing on promoting knowledge transfer for enterprises in the process of integrated domestic and foreign trade, fully leveraging various fiscal and financial means to support the development of integrated domestic and foreign trade. Actively innovating financial support for "knowledge innovation" for domestic and foreign trade enterprises, encouraging financial institutions to develop financing products suitable for result transformation of domestic and foreign trade enterprises, developing financial support products based on product design, invention, patents, new technologies, new materials, and new consumption, promoting flexible credit lines, on-demand repayment loans, streamlining loan approval procedures, and optimizing approval processes, continuously increasing government subsidies for enterprise knowledge inputs. Fully

leveraging the role of local intellectual property trading centers and copyright trading centers in result transformation, establishing integrated domestic and foreign trade ecological enterprise knowledge sharing alliances around different industries, further improving the convenience for small and medium-sized enterprises to obtain the latest industrial knowledge, reducing the cost of knowledge application, and providing convenient, efficient, and comprehensive knowledge application systems for all enterprises in the industrial chain.

5. Research Limitations

The article provides an in-depth analysis of the key path of integrated domestic and foreign trade in China from the perspective of knowledge transfer. Through a thorough analysis of the processes of knowledge transfer, embedding, and absorption in the context of integrated domestic and foreign trade, the article not only constructs a relatively comprehensive knowledge transfer system for integrated domestic and foreign trade but also provides optional paths for enterprises in different industry positions, offering targeted suggestions for the government to formulate relevant policies and strategies. The research has theoretical and practical value for accelerating the development of integrated domestic and foreign trade in China.

However, due to the diverse types of domestic and foreign trade enterprises and their varying positions in the industry stages and market competition environments, as well as differences in their knowledge application capabilities, there is no "one-size-fits-all" path for the integrated domestic and foreign trade process. Particularly in the field of foreign trade, many enterprises still exist in the form of "international buyers," with their core competitiveness reflected in their market service capabilities. Due to considerations of enterprise profits and commercial confidentiality, many enterprises regard their industrial knowledge as their "lifeline" and are unwilling to share it with domestic manufacturing enterprises, making it difficult for domestic enterprises to bridge this significant "industrial gap" and forcing them to obey upstream service providers. The "integrated domestic and foreign trade knowledge system" proposed in this article may encounter research biases and overlook certain aspects in practice.

Moreover, with the rise of the digital economy, the emergence of new forms of integrated domestic and foreign trade organizations, and the impact of new technologies, models, and channels such as e-commerce, cross-border e-commerce, and live-streaming e-commerce on traditional domestic and foreign trade systems, the patterns of knowledge innovation are significantly different. Therefore, the research on the integrated domestic and foreign trade process based on the perspective of knowledge transfer may have limitations in the context of the digital economy and requires further in-depth and specific research in the future. Due to limitations in length and author capacity, this article did not thoroughly explore the above aspects, but this does not imply that the study ignored these issues. Future research will explore these issues from a more systematic and specific perspective.

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