

A Study of the Multidimensional Impact of International Trade on Firm Productivity

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Abstract. In the context of economic globalization, international trade, as a key factor in promoting economic growth, greatly affects enterprise productivity. This paper synthesizes the research results of scholars and modern economic theories to explore the multidimensional impact of international trade on enterprise productivity. This paper firstly reviews the development of neoclassical international trade theory and new trade theory, deeply analyses the impact of market access policy, export market diversification, and technology spillovers on enterprise productivity, and explores the positive effect of international trade on enhancing enterprise productivity. It is found that the opening of market access can reduce enterprise costs, improve supply chain efficiency, and promote the diffusion of technology and knowledge. Economies of scale and technological spillovers can further reduce the cost structure of enterprises, stimulate technological innovation, and enhance their competitiveness. These findings provide important guidelines for policymaking and business strategies, emphasizing the importance of international trade in promoting sustainable economic development and enterprise competitiveness.

Keywords: International trade, firm productivity, market access, economies of scale, technology spillovers.

1. Introduction

In the context of deepening globalization, international trade, as an important driver of economic growth, greatly affects enterprise productivity. It not only optimizes resource allocation and promotes technological innovation, but also provides a platform for inter-enterprise exchanges, which is of great significance to enterprise productivity. The State Council has proposed a series of measures to promote globalized trade to enhance enterprise competitiveness. The General Office of the State Council issued Several Opinions on Further Expanding Opening Up and Promoting High-Quality Development of Foreign Trade, which proposes optimizing the trade structure and improving the level of trade facilitation, which promotes the participation of Chinese enterprises in international trade and improves their productivity. The CPC Central Committee and State Council issued the Guiding Opinions on Building a New Development Pattern and Promoting the High-Quality Development of Foreign Trade, which states that the high-quality development of foreign trade enhances the deep integration of China's economy with the world economy and has a direct impact on enterprise productivity. Therefore, it is of great research significance to explore how international trade affects enterprise productivity and how international trade promotes sustainable economic development and enhances enterprise competitiveness. Many scholars have conducted many studies on trade facilitation and multiple aspects of trade types and heterogeneous enterprises, etc., which have systematically elucidated the conduction process and theoretical development by combining theoretical illustrations and modeling studies. This paper discusses the multidimensional impact of international trade on productivity by systematically sorting out the research results of scholars, combining modern economic theories and in-depth discussions [1]. This paper will focus on the above theories, aiming to analyze and summarize the impact of the two paths of enterprise heterogeneity and trade market expansion and enterprise competition, combined with the new trade theory, international trade theory, etc., to help readers deepen the understanding of the role of international trade in promoting enterprise productivity improvement.

2. Theoretical Foundations

In 1919, Heckscher first proposed the effect of factor intensity on international trade in *The Effect of Foreign Trade on the Distribution of Income*, opening a new research perspective. This perspective was further developed in the 1930s by Bem Ohlin, who refined Heckscher's theory in his book *Interregional and International Trade* and formed the famous Heckscher-Ohlin theory (H-O theory). The H-O theory points out that the relative abundance of the factors of production in each country is a key factor in determining international trade. Since then, based on the H-O model, scholars have further explored the international division of labor and the factor price equalization theorem. However, when analyzing the import and export products of the United States, Leontief found that the capital intensity of American exports was higher than that of imports, which contradicted the prediction of the H-O theory and triggered a re-examination and testing of international trade theory. To explain this phenomenon, scholars have conducted a large number of empirical studies and theoretical analyses, which have promoted the development of international trade theory and provided more comprehensive and in-depth guidance for policy formulation.

In the early 1980s, economists such as Paul Krugman proposed the New Trade Theory, marking a new stage in the study of international trade theory. The new trade theory emphasises the impact of economies of scale and diversification of consumer demand on international trade. In the context of globalisation, enterprises tend to expand the scale of production to reduce costs and improve efficiency, and cross-national borders through the international trade platform, thus gaining comparative advantages. At the same time, with the development of the global economy and the rise in consumer income levels, consumer demand for products has become increasingly diversified. To meet the diversified demands in the international market, countries have been producing and exporting products with uniqueness and differences, which has promoted the prosperous development of international trade. The new trade theory provides readers with a new perspective and theoretical tools for understanding contemporary international trade and is of great significance in guiding the formulation and implementation of international trade policies.

3. Analysis of the Mechanisms by Which International Trade Affects Enterprise Productivity

3.1. Market Access Policy

The market access threshold directly determines the speed at which enterprises respond to market demand. Optimizing the market access mechanism not only reduces the start-up and operating costs of enterprises but also stimulates the enthusiasm and creativity of market players and creates a fairer and more transparent competitive environment for manufacturing enterprises. In particular, the rapid development of high-speed rail networks has significantly enhanced the market access convenience for enterprises. Drawing on Fabre's approach, Mengting Zhang et al. assessed and validated the impact of high-speed rail on firms' productivity using a two-way fixed-benefit model [2]. The study confirmed that high-speed rail greatly shortens the spatial and temporal distance between cities, reduces logistics costs, improves supply chain flexibility and efficiency, broadens market boundaries, and provides a broader market space for enterprises, enabling them to respond to market demand more quickly and optimise resource allocation, thus enhancing productivity.

Improved market access also facilitates the dissemination and diffusion of knowledge and technology. The expansion of the high-speed rail network accelerates the flow of production factors such as information, talent and capital, and it facilitates enterprises' access to new knowledge and technology. This knowledge spillover effect promotes the technological progress of enterprises and drives the innovation of the whole industry, forming a virtuous circle. The opening of a high-speed railway network attracts many people, logistics and information flows to gather in large and medium-sized cities along the route, which becomes the preferred place for enterprise development. As a result,

enterprises can enjoy a more complete industrial chain support, further enhancing productivity and market competitiveness [3].

The State has made active efforts to relax market access for the non-public economy, such as the Opinions on Certain Special Measures on Supporting the Construction of Hainan Free Trade Port to Relax Market Access issued by the State Council, which aims to boldly innovate, significantly relax access thresholds, pool global resources, expand openness to the outside world and escort economic globalisation. These measures not only accurately promote the development of Hainan and other places, but also provide new ideas and directions for the national market access policy. The Opinions on Improving the Market Access System and other documents have also put forward specific measures to improve the negative list management mode of market access, scientifically determine the rules of market access and reasonably set the market prohibitions and licensing access matters, which have further strengthened the implementation and organisation of the market access policy. Therefore, it is of great significance to continue to deepen the reform and improvement of market access policies to enhance the productivity of enterprises and promote economic development.

3.2. Economies of Scale

Scale economy, as a core concept in economics, has had a profound and wide-ranging impact on the deepening development of China's economic system and the enhancement of enterprise productivity. It not only optimises the cost structure of enterprises but also promotes technological innovation, industrial upgrading and the optimisation of resource allocation, injecting a strong impetus for sustained economic growth.

With the expansion of production scale, enterprises can allocate fixed costs, such as equipment purchase, technology research and development, and human resources training, more effectively, thus reducing the cost per unit of product. This optimisation of the cost structure not only stabilises the enterprise's finances but also provides the enterprise with more resources for improving product quality, increasing R&D investment, and expanding market share, which in turn leads to a double increase in productivity and market competitiveness. This circular mechanism makes economies of scale an important strategy for enterprises to pursue high efficiency and low cost.

The economy of scale is the key force driving technological innovation and industrial upgrading. By their advantages in capital, talents, and market influence, large enterprises undertake high-risk and high-investment R&D projects and lead the technological frontier of the industry. This kind of technological innovation not only enhances the core competitiveness of the enterprise itself but also drives the upgrading of the whole industrial chain through the technological spillover effect, forming a virtuous circle of technological innovation and industrial upgrading. In addition, the economy of scale promotes the close integration of the industrial chain, reduces the transaction costs of each link, improves the operational efficiency of the overall supply chain, and provides strong support for the continuous growth of enterprise productivity. Under the effect of economies of scale, enterprises can more accurately grasp the changes in market demand, flexibly adjust the production plan and product structure, and achieve the optimal allocation and efficient use of resources. The free flow of production factors promotes the aggregation of resources to high-efficiency and high-potential areas, reduces the waste of resources and ineffective labour, and improves the overall efficiency of the economy. At the same time, the government has provided a favourable policy environment for the expansion of scale and competitiveness of superior enterprises and industries by formulating a series of industrial policies, fiscal policies and financial policies. The establishment of a sound system of laws and regulations and regulatory mechanisms to ensure fair market competition and the protection of the rights and interests of enterprises, but also for the construction of economies of scale to build a solid institutional foundation for the sound development of the system. Continuing to leverage the advantages of economies of scale in the future will be the key to driving China's economy to achieve higher-quality development.

3.3. Technology Spillover

Technology spillovers, as a central driving force of the wave of globalisation and the knowledge economy, have had a diverse range of far-reaching impacts on the economy, particularly in terms of boosting the productivity of enterprises [4]. This phenomenon not only highlights the power of technological progress but also reveals its importance in the global economic landscape.

Technology spillovers directly contribute to the productivity of enterprises by building knowledge-sharing networks. Enterprises are no longer isolated technological innovation subjects but are embedded in a knowledge network. FDI and OFDI, as important channels of technological spillover, not only provide host country enterprises with advanced technology and management experience but also prompt domestic enterprises to absorb new technologies in the international market and feedback on the upgrading of domestic industries. This two-way flow of technology accelerates the popularization and application of new technologies and processes, optimises production processes, reduces production costs, and significantly improves the productivity of enterprises [5].

Technology spillovers strengthen the overall competitiveness and innovation capacity of regional economies. By promoting knowledge exchange and cooperation among regional enterprises, technology spillover builds a close regional innovation network and enhances the innovation ability and competitiveness of regional enterprises. This cooperation mode based on knowledge sharing not only promotes the rapid dissemination and application of new technologies but also enhances the resilience and risk resistance of the regional economy [6]. In today's deepening globalisation, inter-regional technological cooperation and exchanges have become more frequent, and the positive effects of technological spillovers have been further amplified, promoting the development of the regional economy in the direction of a higher level and higher quality.

Fintech has accelerated the diffusion and application of new technologies in commercial banks and the wider economy through technological spillover effects. The introduction of cutting-edge technologies such as big data, artificial intelligence, and blockchain has optimised commercial banks' credit assessment, risk management, and customer service processes, significantly reduced operating costs, and improved service efficiency and product innovation. This technological spillover is not only limited to the financial industry but also radiates to other industries, promoting the digital transformation and efficiency of the entire economic system. Enterprises have been able to analyze the market more accurately and optimise resource allocation with the help of fintech tools, improving productivity and market competitiveness [7].

Knowledge spillovers have intensified market competition while promoting cooperation and win-win situations among enterprises. On the one hand, the rapid rise of fintech enterprises, with their flexible business models and low operating costs, poses a challenge to traditional commercial banks, forcing the latter to accelerate the pace of technological innovation transformation and upgrading. This competitive pressure has stimulated the vitality of the entire financial industry, promoting the improvement of service quality and cost reduction. On the other hand, fintech also promotes cooperation among enterprises, especially in the context of increasing technological complexity and innovation difficulty, enterprises are more inclined to share resources and risks through cooperation and jointly promote technological innovation. This cooperation mechanism further amplifies the positive effects of technological spillovers and promotes the synergistic development of the entire economic system.

4. Conclusion

Through theoretical discussion, this paper finds that international trade provides a larger development platform for enterprises through the market expansion effect, and also promotes the enhancement of enterprise productivity. Firm heterogeneity plays a key role in this process, and differences in resource endowment, technology and management efficiency of different firms determine competitiveness in international trade. However, despite the positive impact of

international trade on firm productivity, it is important to realize that not all firms benefit from international trade.

Market access policies, market diversification economies of scale, and technological spillovers are three key factors in the impact of international trade on firms' productivity. Ease of market access directly determines the ability of firms to respond quickly to market demand and thus increase productivity. Firms need to invest significant resources in adapting and responding to these challenges, but this often leads to increased production costs and a decline in productivity in the short term. As market diversification reaches a certain level, economies of scope begin to show their positive effects. As a core concept in economics, economies of scale have had a far-reaching and wide-ranging impact on the deepening of the economic system and the improvement of corporate productivity. It not only optimizes the cost structure of enterprises but also promotes technological innovation, industrial upgrading, and the optimization of resource allocation, injecting a strong impetus for sustained economic growth. As the core driving force of globalisation and the knowledge economy, technology spillovers have had a diversified impact on the economy, especially in promoting enterprise productivity. This two-way flow of technology has accelerated the popularisation and application of new technologies and techniques, optimized production processes, lowered production costs, and significantly improved the productivity of enterprises.

Research on the relationship between international trade and enterprise productivity will show the following hot directions. First, the impact of new international trade rules and standards on enterprise productivity, especially in emerging areas such as the digital economy and the green economy. Secondly, it is concerned about how enterprises can effectively respond to technological changes and market fluctuations in international trade and achieve sustainable development. Future research should continue to deepen the understanding of this relationship and contribute wisdom and strength to the healthy development of the global economy.

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