

The Role of FTZs in Facilitating China's Cross-border E-commerce Trade under the RCEP Agreement

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Abstract:- This research explores the pivotal role of Free Trade Zones (FTZs) in bolstering China's Cross-border E-commerce (CBeC) under the Regional Comprehensive Economic Partnership (RCEP) agreement. It investigates the benefits of FTZs for CBeC and analyzes how RCEP influences FTZs and CBeC, aiming to fill a research gap in understanding their impact on China's CBeC development.

RCEP's influence on China primarily manifests through trade in goods and strategic dimensions. FTZs, with their preferential policies and streamlined procedures, have become engines of innovation-driven development, fostering foreign trade growth. While challenges such as regulatory barriers exist, the study reveals that RCEP presents an opportunity for China to strengthen trade and investment ties with member countries, emphasizing the integration of industrial and value chains. Empirical evidence substantiates the potential benefits of this alignment, including reduced trade barriers, increased market access, and enhanced competitiveness.

➤ *Originality:*

This research addresses a critical gap in systematic and empirical research, offering insights into how FTZs and RCEP impact China's CBeC from a micro perspective. It provides strategic recommendations for FTZs and CBeC to thrive within the RCEP framework, emphasizing innovation, quality, and diversification.

Keywords:- Free Trade Zones (FTZs), Cross-Border E-Commerce (CBeC), Regional Comprehensive Economic Partnership (RCEP), International Trade Agreements.

I. INTRODUCTION

The Role of Free Trade Zones (FTZs) in facilitating China's CBeC under the RCEP agreement is a topic that has been researched by many scholars. FTZs are special economic zones that offer preferential policies and simplified procedures for CBeC activities, such as lower tariffs, faster customs clearance, improved logistics and infrastructure, and enhanced market access.

According to a study, China has 11 pilot free trade zones that are divided into two types as coastal ones and those in central and western regions. The former includes six FTZs in Shanghai, Guangdong, Tianjin, Fujian, Zhejiang and Liaoning and the latter includes five FTZs in Chongqing, Henan, Hubei, Sichuan and Shaanxi^[1]. In recent years, the turnover of China's CBeC FTZs and pilot zones has increased exponentially, which is an important driving force of China's foreign trade growth and a new highlight of innovative development. It has become an important engine of the innovation-driven development strategy^[2].

China's CBeC also faces many challenges and uncertainties, such as regulatory barriers, technical standards, data security and trade conflicts. In this context, the establishment of FTZs and the signing of RCEP agreement are two important strategic measures taken by China which can promote its CBeC development. The RCEP agreement is expected to have a positive impact on the development of FTZs in China.

As the RCEP agreement presents an opportunity for China to forge stronger trade and investment ties with other member countries while achieving a higher level of openness. So, integrating the rules of China's pilot FTZs and the RCEP agreement can synergize its economic development with that of the Asia-Pacific region^[3].

As the industrial orientation and functions are common to the rules of China's pilot FTZs and the RCEP agreement; where both aim to integrate the industrial and value chains. According another study, focusing on the trade facilitation index in RCEP member countries, the impact of trade facilitation on China's CBeC exports is significant^[4].

However, there is a lack of systematic and empirical research on how FTZs and RCEP affect China's CBeC development and performance, especially from a micro perspective. Therefore, the main objective of this study is to fill this research gap and analyze the impact of FTZs and RCEP on China's CBeC industry.

The main research questions are:

- What benefits do FTZs offer for CBeC and how do they affect the development and performance of CBeC enterprises in China?
- How will the RCEP agreement affect the development and performance of FTZs and CBeC enterprises in China, and what challenges and opportunities will they face? The study develops a conceptual framework as shown in Figure 1.

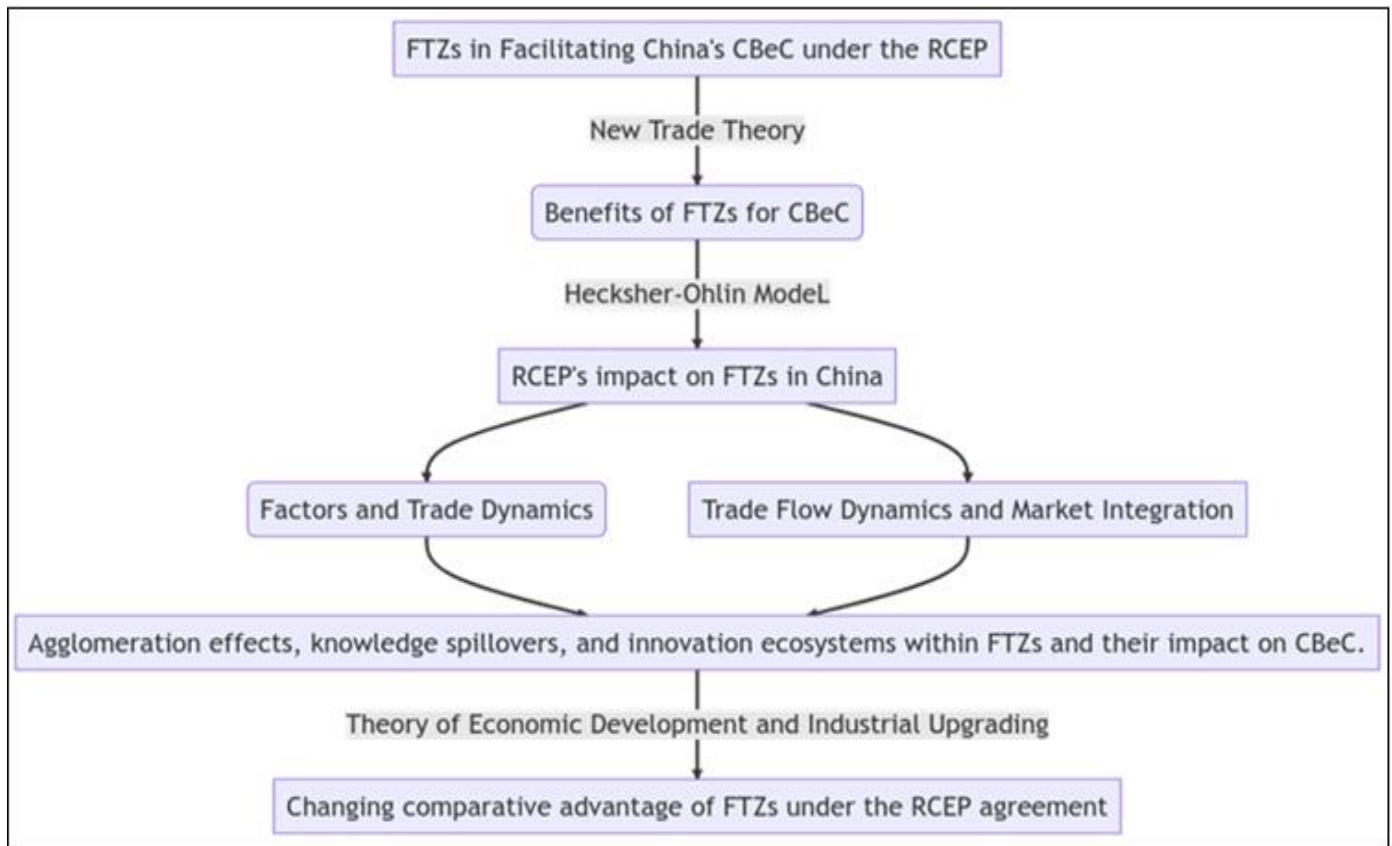


Fig 1 Flow Chart Illustrating Conceptual Framework
Source: 1 Developed by Author

The study is structured as follows: Section 2 describes how FTZs and CBeC fosters trade and innovation in China under new trade theory perspective; Section 3 discusses implication of RCEP on FTZs and CBeC; Section 4 suggest strategies however, China and other RCEP countries can get benefited from RCEP, and section 5 concludes the study with policy implications and recommendations. In this study we delves deeper into the role of FTZs in facilitating China’s CBeC trade under the RCEP agreement. It applies the new trade theory and the Heckscher-Ohlin model to explain how FTZs and CBeC foster trade and innovation in China, and how the RCEP agreement affects their comparative advantages and competitiveness. It also argues that the RCEP agreement is a game changer for FTZs and CBeC in China, as it creates a more conducive environment for cross-border trade and investment.

II. METHODOLOGY

This study employs a comprehensive methodology to analyze the impact of FTZs on China's CBeC within the framework of the RCEP agreement, using the New Trade Theory (NTT) and the Heckscher-Ohlin model. The primary purpose of this research is to assess how FTZs influence CBeC within China, particularly under the RCEP agreement, through

an interdisciplinary approach. The study utilize the NTT to examine the dynamic relationship between FTZs and CBeC under RCEP. NTT emphasizes economies of scale, product differentiation, and imperfect competition in international trade. The study apply the Heckscher-Ohlin (HO) model to analyze the impact of FTZs and CBeC on factor endowments and intensities in China and RCEP countries. HO explains trade based on factor endowments and intensities, considering labor and capital as factors.

III. FTZs AND CBeC FOSTERING TRADE AND INNOVATION IN CHINA: A NEW TRADE THEORY PERSPECTIVE

FTZs are geographically demarcated regions that are granted special economic policies and regulations to encourage trade and investment. They provide a business-friendly environment and serve as platforms for innovation, entrepreneurship, and international cooperation. So, FTZs are special economic zones that offer preferential policies and simplified procedures for cross-border trade activities and serves as testing grounds for policy experimentation, facilitating international trade and attracting foreign businesses.

The development of FTZs in China has been a crucial component of the country's economic strategy. China established its first pilot FTZ in Shanghai in 2013, which was founded as a trial for China's new round of reform and opening up, and explores what the differences are between the SPFTZ and other free trade areas, and developments of the SPFTZ in the past year^[5]. Since first pilot FTZ, China expanded the number of pilot FTZs to 21, covering most of its coastal and inland provinces - promoting trade liberalization, investment facilitation, financial innovation, institutional reform, new modes of opening-up and cooperation.

The establishment of special economic zones at the early stage of the policy of reform and opening up helped to reduce its cost, and the establishment of FTZs reflects its universality^[6]. The pilot FTZs can significantly attract the entering of foreign-invested enterprises, with the yearly number of newly-registered foreign-invested enterprises increasing by over 90% if the city enforces the pilot FTZ policy^[7]. The pilot FTZs have adopted various measures to support CBeC development, such as establishing CBeC comprehensive service platforms, providing bonded warehousing and logistics services, implementing cross-border e-commerce retail import (CBeCRI) policies, reducing or waiving tariffs and taxes, streamlining customs clearance and inspection procedures, and enhancing market access and supervision.

Considering the context of study, we have incorporate the New Trade Theory (NTT) to analyze the impact of FTZs on China's CBeC under the RCEP agreement. The NTT is an economic theory that challenges the traditional Theory of Comparative Advantage. It emphasizes the importance of economies of scale, product differentiation, and the role of imperfect competition in shaping international trade patterns. The theory suggests that firms that achieve economies of scale in production can lower their costs and gain a competitive advantage in international markets^[8]. So, by incorporating the NTT into the analysis, we can gain insights into the dynamic relationship between China's FTZs and CBeC. The theory can help to explain how FTZs facilitate economies of scale, product variety, innovation and market power, enhances the competitiveness of CBeC.

The NTT predicts several outcomes and phenomena in international trade, of which relevant to the present study includes:

➤ *Economies of Scale:*

The theory suggests that firms or industries that can achieve economies of scale (lower average costs as production increases) will have a competitive advantage in international trade. As a result, countries with larger markets or industries that can achieve economies of scale are more likely to specialize in certain products and dominate global trade in those sectors.

➤ *Product Differentiation:*

The New Trade Theory also emphasizes the importance of product differentiation. It suggests that firms may engage in product differentiation strategies to create unique products that meet specific consumer preferences or market segments. This differentiation can lead to market power and higher profits for firms, allowing them to compete internationally.

➤ *Trade Patterns:*

The New Trade Theory predicts that countries will engage in intra-industry trade, where they both export and import similar products within the same industry. This type of trade occurs because countries may have comparative advantages in different stages of the production process or in producing slightly differentiated products.

➤ *Innovation and Technological Change:*

The theory suggests that trade can stimulate innovation and technological change. Global competition and access to larger markets can incentivize firms to invest in research and development, leading to innovation and improvements in products and processes.

Considering these predictions, the findings of the NTT presented in a line graph format with the following variables as shown in Figure 2¹, and the detail of the dataset is presented in Table 1.

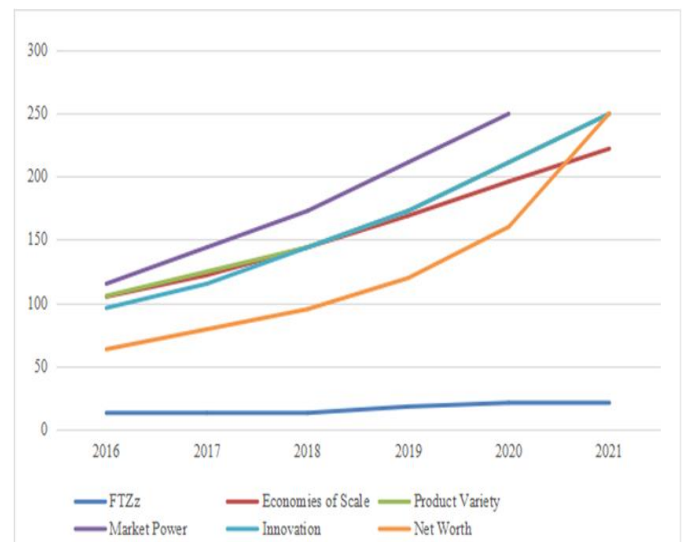


Figure 2 CBeC Enterprises within FTZs over 5 Years: From The New Trade Theory Perspective
Source: 1 Author's Analysis

¹As the graph maintains a y-axis limit of 250, so data scaling technique is used to represent the value appropriately. Where, the scaling factor is calculated by dividing the maximum value of the y-axis with the largest value in the dataset. Then, dataset value is multiplied by the scaling factor.

Table 1 Dataset of CBeC enterprises within FTZs Over 5 Years

| Years | FTZs | CBeC Enterprises | Transaction Value (CNY) | Product Variety | Product Category | Market Power (USD) | Innovation |
|--------------------------------|-------|------------------|-------------------------|-----------------|------------------|--------------------|------------|
| 2016 | 13 | 105 | 3.6 trillion | 11000 | 18 | 100 billion | 1000 |
| 2017 | 13 | 122 | 4.5 trillion | 13000 | 22 | 120 billion | 1200 |
| 2018 | 13 | 144 | 5.4 trillion | 15000 | 24 | 150 billion | 1500 |
| 2019 | 18 | 169 | 6.8 trillion | 18000 | 26 | 180 billion | 1800 |
| 2020 | 21 | 196 | 9.1 trillion. | 22000 | 30 | 220 billion | 2200 |
| 2021 | 21 | 222 | 14.2 trillion | 26000 | 32 | 260 billion | 2600 |
| Avg. Annual Growth Rate | 16.2% | 31.7%. | 18.7%. | 12.2%. | 22.7%. | 21.1%. | |

Source: Collected from Varies Sources Accumulated by Author

The findings demonstrate positive dynamics in China's CBeC within FTZs. There has been continuous growth in the number of CBeC enterprises, transaction value, product variety, market power, and innovation. The expansion of FTZs and the corresponding increase in CBeC activities highlight the favorable environment and policies within these zones. The data reflects the growing importance and success of CBeC within China's FTZs, indicating the positive impact of such initiatives on cross-border e-commerce trade. These findings are consistent with NTT's predictions and implications for international trade and globalization. The critical analysis supports these theoretical arguments by asserting that China's CBeC within FTZs have significant policy relevance, economic efficiency, and implications for globalization. The findings provided offers insights into these aspects.

In terms of policy relevance, the expansion of FTZs from 13 in 2016 to 21 in 2021 demonstrates the Chinese government's commitment to promoting CBeC within these specialized zones. The increasing number of CBeC enterprises within FTZs signifies the effectiveness of the policies and incentives provided to encourage participation in cross-border e-commerce. Moreover, the steady growth in transaction value, product variety, market power, and innovation indicate the success of these policies in facilitating CBeC activities within FTZs.

From an economic efficiency perspective, the notable growth in transaction value, product variety, and market power showcases the effectiveness of CBeC within FTZs. The expanding range of product categories indicates a higher degree of specialization and the ability to meet diverse consumer demands. The consistent growth in innovation suggests the adoption of new technologies and practices, resulting in improved efficiency and competitiveness in the CBeC industry.

Furthermore, China's CBeC within FTZs have significant implications for globalization. The increasing transaction value, product variety, and market power reflect the growing integration of these activities into the global market. The rise in the number of CBeC enterprises within FTZs indicates expanded market access and opportunities for domestic and international businesses alike. The average annual growth rates of various indicators further support the positive impact of CBeC within FTZs on globalization, fostering cross-border trade and strengthening economic ties with other countries. The findings highlighted that the policy relevance of FTZs in promoting CBeC, the economic efficiency achieved through increased transaction values and product variety, and the

implications for globalization. These findings underscore the effectiveness of policies and initiatives in facilitating CBeC, driving economic growth, and enhancing China's integration into the global marketplace.

However, FTZs also face some challenges for CBeC development in China, such as regulatory uncertainty, compliance costs, technical barriers and data protection issues. These challenges may limit the potential benefits of FTZs for CBeC or even create negative effects on CBeC performance. For example, the regulatory uncertainty may reduce the confidence and investment of CBeC enterprises; the compliance costs may increase the trade costs and reduce the competitiveness of CBeC products; the technical barriers may hinder the market access and trade facilitation of CBeC products; and the data protection issues may raise the security and privacy risks of CBeC transactions. Therefore, China need to improve their FTZs and CBeC policy coordination, standard harmonization, technical assistance and data governance to overcome these challenges and enhance FTZ's role in facilitating China's CBeC.

IV. RCEP AND ITS IMPLICATIONS FOR FTZs AND CBeC IN CHINA USING HECKSCHER-OHLIN MODEL

This section using the Heckscher-Ohlin (HO) model with certain assumptions, we analyze how FTZs and CBeC enterprises affect the factor endowments and factor intensities of China and RCEP countries^[9,10]. To understand the impact of RCEP on FTZs and CBeC in China, we use Heckscher-Ohlin model as a theoretical framework. Heckscher-Ohlin model is a classical model of international trade that explains how countries trade based on their factor endowments and factor intensities^[11]. According to Heckscher-Ohlin model, a country will export goods that use its abundant factors intensively and import goods that use its scarce factors intensively. Trade will equalize factor prices across countries and increase the welfare of both trading partners^[9].

Following the framework of Dixit and Norman^[12] and incorporating additional assumptions from Schott^[13], we establish the theoretical foundation for studying the common industrial development path. We begin with calculating the L - C ratio of China and RCEP over 6 years following the below equation :

$$L - C \text{ ratio} = \frac{K}{L}$$

Where K is the capital stock and L is the labor force of a country or region. This equation measures the capital intensity or capital deepening of an economy, which indicates how much capital is used per unit of labor. A higher L - C ratio means that the economy is more capital-intensive, while a lower L - C ratio means that the economy is more labor-intensive.

Table 2 Estimating the L - C ratio of China and RCEP Countries using the World Bank Indicator Data Source, it is Found that :

| Estimated L - C ratio of China: | Estimated L - C ratio of RCEP countries: |
|--------------------------------------|--|
| $L - C ratio_1 = \frac{K}{L}$ | $L - C ratio_2 = \frac{K}{L}$ |
| $L - C ratio = \frac{14.23}{188.18}$ | $L - C ratio = \frac{5.015}{509.94}$ |
| $L - C ratio = 0.0756$ | $L - C ratio = 0.0098$ |

From the findings of the equation, we observe that economy of China and RCEP countries/region is more labor-intensive (). However, while comparing between China and RCEP countries/region suggests that China is more capital-intensive, while RCEP is more labor-intensive. Capital intensity can affect the productivity, wages, and competitiveness of an economy, depending on various factors such as technology, human capital, and market conditions. We assume that CBeC products are more capital-intensive than non-CBeC products while non-CBeC products are more labor-intensive than CBeC products So as China has a higher L-C ratio, it may benefit from producing and exporting more CBeC products to RCEP countries, as it can leverage its capital stock and technology to gain a competitive edge. However, it may also face some challenges such as maintaining its capital quality, upgrading its innovation capacity, and coping with environmental and social costs of capital-intensive production. For RCEP countries which have a lower L-C ratio compared to China, may get benefited from producing and exporting more non-CBeC products to China, as it can leverage its labor force and comparative advantage in labor-intensive sectors. However, it may also face some challenges such as improving its labor productivity, enhancing its human capital, and diversifying its export markets beyond China.

Based on the dataset and using the Heckscher-Ohlin model, we can present findings with the help of some equations as follows:

Equation I that is used in the Heckscher-Ohlin model is the factor price equalization theorem, which states that free trade will equalize the prices of factors of production across countries. This can be expressed as:

$$w_1 = w_2$$

$$r_1 = r_2$$

Where w1 and w2 are the wages in China and RCEP, and r1 and r2 are the interest rates in China and RCEP.

Equation II that is used in the Heckscher-Ohlin model is the Rybczynski theorem, which states that an increase in the endowment of one factor of production will increase the output of the good that uses that factor intensively and decrease the output of the other good. This can be expressed as:

$$\frac{dQ_x}{dL} > 0$$

$$\frac{dQ_y}{dL} < 0$$

$$\frac{dQ_x}{dK} > 0$$

$$\frac{dQ_y}{dK} < 0$$

Where Qx and Qy are the outputs of good x (non-CBeC products) and good y (CBeC products), L is labor, and K is capital. We assume that good x is labor-intensive and good y is capital-intensive.

Lastly, equation III that is used in the Heckscher-Ohlin model is the Stolper-Samuelson theorem, which states that an increase in the relative price of one good will increase the real income of the factor that is used intensively in producing that good and decrease the real income of the other factor. This can be expressed as:

$$\frac{dw}{dp_x} < 0$$

$$\frac{dr}{dp_x} > 0$$

$$\frac{dw}{dp_y} > 0$$

$$\frac{dr}{dp_x} <$$

Where Px and Py are the prices of good x (non-CBeC products) and good y (CBeC products). We assume that good x is labor-intensive and good y is capital-intensive.

Starting with Heckscher-Ohlin model's price equalization theorem, according to which under free trade, the wages and interest rates should be equalized across countries. With the dataset provided in Appendix, we compare the wages and interest rates and found:

Table 3 Compare the Wages and Interest Rates

| | |
|-------------------------------|--|
| Wages: $w_1 < w_2$ | Where, $w_1 = 53.19$ $w_2 = 60.62$ |
| Interest Rate: $r_1 < r_2$ | $r_1 = 3.12$ $r_2 = 6.11$ |

The finding indicates that China has a lower wage rate and a lower interest rate than RCEP, which means that China is relatively abundant in both capital and labor compared to RCEP. This also means that China has a comparative advantage in producing both goods, assuming that one good is capital-intensive and the other is labor-intensive. However, free trade between China and RCEP region will then allow the prices of the output goods to be equalized between them. This will also equalize the prices of the input factors, according to the factor price equalization theorem. Therefore, with free trade, we would expect $w_1 = w_2$ and $r_1 = r_2$, which means that China's wage rate and interest rate will rise, while RCEP's wage rate and interest rate will fall. This will eliminate China's comparative advantage in both goods and make both countries produce each good using the same capital-labor ratio. However, because China and RCEP have different quantities of factor endowments, they will produce different quantities of the two goods.

To apply the Equation II of Heckscher-Ohlin model's Rybczynski theorem, we need to use the same production functions and factor endowment constraints as in the previous question. We can write them as follows:

$$Q_x = aL + bK$$

$$Q_y = cL + dK$$

$$l_1 + l_2 = L$$

$$k_1 + k_2 = K$$

Where Q_x and Q_y are the outputs of good Q_x (non-CBeC products) and good Q_y (CBeC products), l and k are the inputs of labor and capital, respectively, a, b, c and d are positive constants that represent the input coefficients of labor and capital in each sector, l_1 and k_1 are the amounts of labor and capital used in sector Q_x , l_2 and k_2 are the amounts of labor and capital used in sector Q_y , L and K are the total endowments of labor and capital in the economy.

Using these equations, we can solve for Q_x and Q_y in terms of L and K as follows:

$$Q_x = \frac{(aL + bK)}{(a + b)}$$

$$Q_y = \frac{(cL + dK)}{(c + d)}$$

We can also find the partial derivatives of Q_x and Q_y with respect to L and K as follows:

$$\frac{dQ_x}{dL} = \frac{a}{(a + b)}$$

$$\frac{dQ_y}{dL} = \frac{c}{(c + d)}$$

$$\frac{dQ_x}{dK} = \frac{b}{(a + b)}$$

$$\frac{dQ_y}{dK} = \frac{d}{(c + d)}$$

These derivatives tell us how x and y respond to changes in L or K . For example, $dQ_x/dL > 0$ means that x increases when L increases, holding K constant. Similarly, $dQ_y/dK < 0$ means that y decreases when K increases, holding L constant. Using these derivatives, we can check if the given inequalities hold for any values of L and K for both China and RCEP. For simplicity, let us assume that,

$$l_1 = l_2 = \frac{L}{2}$$

And,

$$k_1 = k_2 = \frac{K}{2}$$

This means that both China and RCEP uses half of their labor and capital endowments in each sector. Then we can plug these values into the derivatives and see if they satisfy the inequalities.

Table 4 For China and RCEP :

| For China and RCEP : | |
|---------------------------------------|-------|
| $\frac{dQ_x}{dL} = \frac{a}{(a + b)}$ | > 0 |
| $\frac{dQ_y}{dL} = \frac{c}{(c + d)}$ | < 0 |
| $\frac{dQ_x}{dK} = \frac{b}{(a + b)}$ | > 0 |
| $\frac{dQ_y}{dK} = \frac{d}{(c + d)}$ | < 0 |

These inequalities hold if $a > 0$, $b > 0$, $c < 0$ and $d < 0$. This means that China and RCEP produces good Q_x using positive amounts of labor and capital, and good Q_y using negative amounts of labor and capital. This implies that good Q_x is labor-intensive and capital-intensive, while good Q_y is labor-saving and capital-saving. Therefore, it is assumed that both China and RCEP produce the same goods using the same input coefficients, but they have different endowments of labor and capital. According to the Rybczynski theorem, if one country increases its endowment of one factor, it will increase its output of the good that uses that factor intensively, while decreasing its output of the other good. For example, if China increases its endowment of labor, it will increase its output of good Q_x (non-CBeC products), which is labor-intensive, while decreasing its output of good Q_y (CBeC products), which is capital-intensive. Furthermore, equation III can also be used in the same manner as the Rybczynski theorem to understand the relation between price, real income of labor, and the real income of capital.

Using Heckscher-Ohlin model to analyze RCEP, we can infer that China has a comparative advantage in non-CBeC products that use labor intensively, such as clothing, footwear, toys, etc., because China has more labor per unit of capital than other factors. Other RCEP members may have comparative advantages in CBeC products that use capital or land intensively, such as machinery, electronics, agricultural products, etc., because they have more capital or land per unit of labor than other factors. Therefore, under RCEP, China will export more non-CBeC products that use labor intensively to other RCEP members and import more CBeC products that use capital or land intensively from other RCEP members. This will increase the trade volume and value of CBeC between China and other RCEP members. RCEP will also affect the factor prices and welfare of China and other RCEP members. According to Heckscher-Ohlin model, trade will increase the relative price of the export good and reduce the relative price of the import good in each country. This will increase the return to the factor that is used intensively in producing the export good and decrease the return to the factor that is used intensively in producing the import good in each country. As a result, trade will increase the income of the owners of the abundant factor and decrease the income of the owners of the scarce factor in each country. However, trade will also increase the overall welfare of each country by expanding production possibilities and consumption choices. Moreover, we can infer that trade will increase the relative price of non-CBeC products and reduce the relative price of CBeC products in China. This will increase the wage rate and decrease the rental rate or the land price in China. As a result, trade will increase the income of labor and decrease the income of capital or land in China. However, trade will also increase the overall welfare of China by expanding production possibilities and consumption choices. Similarly, trade will have opposite effects on the factor prices and welfare of other RCEP members that have comparative advantages in CBeC products that use capital or land intensively. RCEP will also affect the industrial structure and innovation of FTZs and CBeC in China. According to Heckscher-Ohlin model, trade will induce structural change and technological progress in each country. Trade will shift resources from the sectors that produce import goods to the sectors that produce export goods in each country. This will increase the scale and efficiency of the export sectors and stimulate innovation and learning-by-doing in these sectors. Trade will also expose each country to new products, technologies and ideas from other countries. This will increase the variety and quality of products and services available in each country and foster innovation and diffusion of knowledge in each country. Therefore, trade will induce structural change and technological progress in FTZs and CBeC in China. Trade will shift resources from the sectors that produce CBeC products that use capital or land intensively to the sectors that produce non-CBeC products that use labor intensively in China. This will increase the scale and efficiency of the non-CBeC sectors and stimulate innovation and learning-by-doing in these sectors. Trade will also expose China to new products, technologies and ideas from other RCEP members. This will increase the variety and quality of products and services available in China and foster innovation and diffusion of knowledge in China.

V. RCEP: A GAME CHANGER FOR FTZS AND CBeC IN CHINA

FTZs and CBeC in China need to adapt to the changing comparative advantage under the RCEP agreement by upgrading their industrial structure and enhancing their competitiveness. To do so, FTZs and CBeC in China can adopt the following strategies:

➤ *Moving Up the Value Chain:*

FTZs and CBeC in China can move up the value chain by producing or providing higher-value-added CBEC products or services that can differentiate themselves from competitors and capture more value from consumers. For example, FTZs and CBeC in China can produce or provide more customized, personalized, diversified or branded CBEC products or services that can meet the specific needs or preferences of consumers in other RCEP members.

➤ *Moving Up the Skill:*

FTZs and CBeC in China can move up the skill by employing or developing higher-skill workers that can perform more complex or sophisticated tasks and enhance productivity and quality. For example, FTZs and CBeC in China can employ or develop more skilled workers in areas such as design, marketing, management, logistics, customer service, etc., that can add more value to CBEC products or services.

➤ *Moving Up the Technology:*

FTZs and CBeC in China can move up the technology by adopting or innovating higher-tech technologies that can improve efficiency, quality, variety or innovation. For example, FTZs and CBeC in China can adopt or innovate more advanced technologies such as e-commerce platforms, digital payment systems, big data analytics, artificial intelligence, block-chain, cloud computing, etc., that can enhance CBEC operations and performance.

➤ *Moving Up the Quality:*

FTZs and CBeC in China can move up the quality by producing or providing higher-quality CBEC products or services that can meet or exceed the standards and expectations of consumers in other RCEP members. For example, FTZs and CBeC in China can produce or provide more reliable, durable, safe or environmentally friendly CBEC products or services that can satisfy the quality requirements or preferences of consumers in other RCEP members.

➤ *Moving Up the Diversity:*

FTZs and CBeC in China can move up the diversity by producing or providing higher-diversity CBeC products or services that can cater to the diverse needs and tastes of consumers in other RCEP members. For example, FTZs and CBeC in China can produce or provide more varied, novel or creative CBEC products or services that can appeal to the different segments or niches of consumers in other RCEP members.

➤ *Improving Institutional Quality:*

FTZs and CBeC in China can improve their institutional quality by strengthening the rule of law, protecting property rights, enforcing contracts, reducing corruption, enhancing transparency, etc. These institutional factors can create a more favorable business environment for FTZs and CBeC in China and increase their confidence and credibility among other RCEP members.

➤ *Improving Policy Coordination:*

FTZs and CBeC in China can improve their policy coordination by harmonizing their policies and regulations with those of other RCEP members, especially in areas such as trade facilitation, customs clearance, technical standards, intellectual property rights, e-commerce rules, etc. These policy factors can reduce the trade barriers and costs for FTZs and CBeC in China and increase their market access and integration among other RCEP members.

➤ *Improving Infrastructure:*

FTZs and CBeC in China can improve their infrastructure by upgrading their physical and digital infrastructure, such as transportation networks, logistics facilities, communication systems, internet services, etc. These infrastructure factors can improve the connectivity and efficiency of FTZs and CBeC in China and increase their speed and convenience among other RCEP members.

➤ *Improving Human Capital:*

FTZs and CBeC in China can improve their human capital by investing in education, training, health, social security, etc., for their workers and managers. These human capital factors can improve the skills, knowledge, creativity and well-being of FTZs and CBeC in China and increase their productivity and quality among other RCEP members.

➤ *Improving Innovation System:*

FTZs and CBeC in China can improve their innovation system by fostering a culture of innovation, supporting research and development activities, encouraging collaboration among universities, enterprises and government agencies, facilitating technology transfer and diffusion, etc. These innovation factors can improve the innovation capabilities and performance of FTZs and CBeC in China and increase their competitiveness and dynamism among other RCEP members.

By adopting these strategies of industrial upgrading and competitiveness enhancement, FTZs and CBeC in China can adapt to the changing comparative advantage under the RCEP agreement and achieve economic development by increasing their trade and investment flows, enhancing their regional integration and cooperation, promoting their innovation and digitalization, and creating new market opportunities. These strategies are also consistent with the theory of Economic Development and Industrial Upgrading (EDIU) that explains how countries can achieve economic development by upgrading their industrial structure.

VI. CONCLUSION

This study examined the impact of RCEP on FTZs and CBeC in China, and explored how FTZs can adapt to the changing comparative advantage under the RCEP agreement by upgrading their industrial structure and enhancing their competitiveness. The study has used Heckscher-Ohlin model as theoretical frameworks to analyze the challenges and opportunities for FTZs and CBeC in China under RCEP. The study has suggested some strategies for FTZs and CBeC in China to move up the value, skill, technology, quality and diversity ladders, and to improve their institutional quality, policy coordination, infrastructure, human capital and innovation system. Furthermore, the study has also provided some empirical evidence for the impact of RCEP on FTZs and CBeC in China, and the impact of industrial upgrading and competitiveness enhancement on economic development for FTZs and CBeC in China. The study suggests that the RCEP agreement will have significant impacts on the FTZs and CBeC in China and on other RCEP members. Using the Heckscher-Ohlin model and its related theorems, we can analyze how the RCEP agreement will affect the comparative advantage, trade patterns, factor prices, income distribution, welfare, industrial structure and innovation of FTZs and CBeC in China and other RCEP members. The RCEP agreement will create new opportunities and challenges for FTZs and CBeC in China and other RCEP members, and they need to be prepared to seize the opportunities and overcome the challenges. Considering the findings the possible policy recommendations are discussed below:

Firstly, FTZs and CBeC in China should leverage the RCEP as a platform to deepen their cooperation and integration with other RCEP members, especially in areas such as trade facilitation, customs clearance, technical standards, intellectual property rights, e-commerce rules, etc. These areas can help reduce the trade barriers and costs for FTZs and CBeC in China and increase their market access and integration among other RCEP members.

Secondly, China should enhance their awareness and utilization of the RCEP preferential tariff benefits by obtaining the necessary certificates of origin or self-certifications, and by complying with the rules of origin requirements. These measures can help FTZs and CBeC in China save customs duties and increase their competitiveness among other RCEP members.

Thirdly, China should diversify their CBEC products or services to cater to the diverse needs and tastes of consumers in other RCEP members. FTZs and CBeC in China should also improve the quality and safety of their CBEC products or services to meet or exceed the standards and expectations of consumers in other RCEP members. These measures can help FTZs and CBeC in China create new market opportunities and increase their customer satisfaction among other RCEP members.

Fifthly, China can upgrade their industrial structure by moving up the value, skill, technology, quality and diversity ladders. FTZs and CBeC in China should also enhance their competitiveness by improving their institutional quality, policy coordination, infrastructure, human capital and innovation system. These measures can help FTZs and CBeC in China adapt to the changing comparative advantage under the RCEP agreement and achieve economic development by increasing their trade and investment flows, enhancing their regional integration and cooperation, promoting their innovation and digitalization, and creating new market opportunities.

Lastly, China can monitor the implementation and impact of the RCEP agreement on their operations and performance. FTZs and CBeC in China should also provide feedback and suggestions to the relevant authorities on how to improve the RCEP agreement or address any issues or challenges that may arise. These measures can help FTZs and CBeC in China maximize the benefits and minimize the risks of the RCEP agreement.

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