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Impact of cross-border e-commerce development on China's foreign trade

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A B S T R A C T

This study investigates the impact of cross-Border E-commerce development on China's foreign trade. The software SPSS is used to calculate the value of each independent variable CBEC transaction volume, business infrastructure, professional talents, and development potential, and the software STATA version 18 is used to perform all the regression analyses. The findings reveal that efficient CBEC business infrastructure, including electronic payments, logistics, and digital support systems advancements, significantly enhances trade facilitation. Additionally, developing and cultivating professional CBEC talents are critical in sustaining trade growth, though there remains a significant talent gap in high-end, composite skills. Furthermore, the study highlights the immense potential of CBEC to broaden trade channels, improve global competitiveness, and foster innovation in small and medium-sized enterprises (SMEs). The analysis indicates steady growth in CBEC transactions and infrastructure, alongside an increasing internet penetration rate, supporting the sector's expansion. The study concludes with recommendations for policymakers and businesses, emphasizing the need to enhance infrastructure, cultivate professional talents, and strengthen market potential to ensure sustainable CBEC development and boost foreign trade. These insights provide a comprehensive understanding of the mechanisms CBEC influences foreign trade, offering a valuable reference for future research and policy formulation.

1. Introduction

CBEC has evolved into a vital new economic growth driver and a new foreign trade engine for China, both in traditional import and export trade; CBEC has nearly occupied half of the market (Jun et al., 2021). Domestic industrial zones and manufacturing bases took CBEC as the basis to deeply participate in the global market, cultivate new competitive advantages in foreign trade (Zhang, 2021). CBEC is inextricably linked to online transactions, business infrastructure development, domestic enterprise transformation, and talent development (Ma, 2020, 2021). Despite a poor start, China's e-commerce and CBEC have evolved quickly and frequently set new record-breaking transactions at the closure of every year (Xia & Liu, 2021). CBEC business infrastructure gives the development of CBEC in China significant momentum (Chen, Qiu, Wang, & Yang, 2022). Many traditional businesses that need to shift urgently face the problem of lacking top-tier talent (Jiang & Yao, 2021). CBEC is one of the finest options for conventional foreign trade firms to overcome development challenges since it offers a potent framework for the upgrading and transformation of enterprises (Jiang & Yao, 2021). The development of e-commerce platforms has led to a considerable shift in the way traditional trade is conducted due to advancements in

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communication and information technology (Park, 2022). CBEC platforms are characterized by real-time, informatization, globalization and electronization, which are not only conducive to business, but also to the sharing of network information between SMEs and large enterprises, thus enhancing their international competitiveness (Ma, Guo, & Zhang, 2021, Abdullah et al., 2023). China's CBEC has experienced significant growth in recent years, accounting for a significant portion of economic growth (Tang, 2021). And the growth momentum of CBEC transactions in China is strong, with steady growth year by year from 2013 to 2022, as can be seen in Fig. 1.

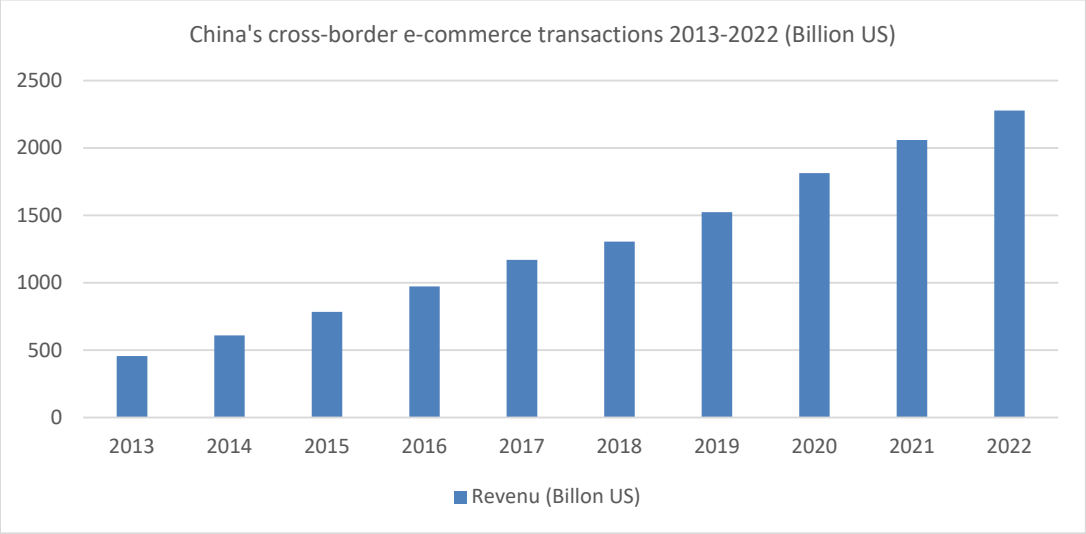

Fig. 1. China's CBEC Transactions 2013-2022

Source: (WJS, 2022)

In terms of business infrastructure, efficient and well-developed CBEC business infrastructure plays a critical role in facilitating international trade (Chen, Qiu, Wang, & Yang, 2022). Information, logistical, and financial-related flows, as well as their linkages, were three supply chain resources that are crucial to the growth of supply chain service capabilities for CBEC (Schoenherr et al., 2020). The development of electronic payment, logistics and express delivery, digital economy, mobile terminals and other support systems have reshaped various fields and links of the CBEC industry, prompting CBEC to realize intelligent transformation gradually (Osewe et al., 2022). Cross-border logistics has continued to expand, and the mode of transportation become more and more abundant (Zhang, 2022). It can be observed from Figure 2 that the cross-border logistics growth rate experienced steady growth before 2018, rapid growth in 2020, and a quick decline thereafter. From 2012 to 2021, the internet usage rate in China has been steadily increasing. In 2012, the internet usage rate was 42%, and by 2021, it had grown to 73% (ITU, 2023). With the continuous growth in internet usage, it is expected that the internet penetration rate will continue to increase in the coming years. Figure 3 shows the internet usage rate in China from 2012 to 2021.

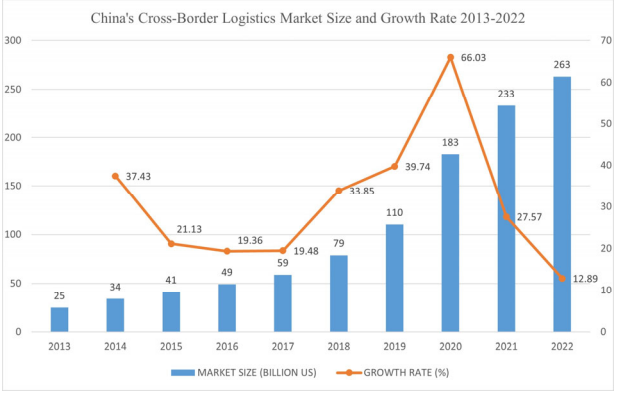

Fig. 2. China's CBEC Logistics Market Size and Growth Rate 2013-2022 (Source: WJS: 2022)

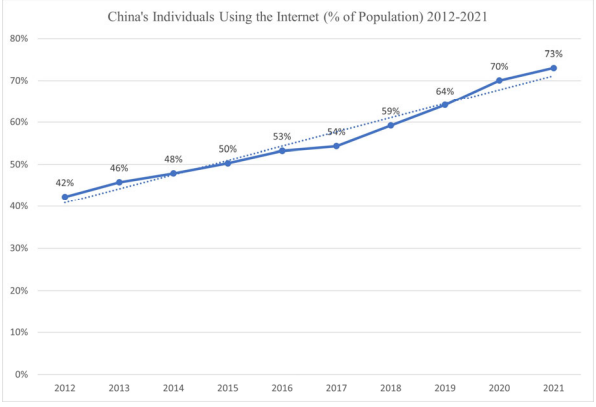

Fig. 3. China's Individuals Using the Internet 2012-2021 (Source: WJS: 2023)

As for CBEC professional talents, the expertise and skills of professionals involved in China's CBEC sector can significantly impact the country's foreign trade performance. (Jun et al., 2021). When promoting the overall rapid CBEC development, professional CBEC talents were the scarcest factor, and it is not only conducive to improving the probability of successfully handling CBEC transaction procedures but also enhancing customers' satisfaction with the overall service (Qiu, 2021).

However, the lack of talents and lagging training were still important factors limiting CBEC development, and a variety of positions have different degrees of talent gaps, especially the lack of high-end composite talent (Jun et al., 2021). In addition, China's CBEC sector possesses immense development potential, offering opportunities for further growth and expansion in foreign trade (Tang, 2021). CBEC provided a lower threshold for trade, broadened the channels for domestic manufacturers to enter the international market, and established good international market recognition for foreign trade enterprises (Tolstoy et al., 2022). By trading globally through CBEC, enterprises can build a business marketing system covering the whole world, overcome resource and finance constraints to expand into foreign markets and improve their level of global competitiveness (Tang, 2021). Below Fig. 4 shows the proportion of e-commerce enterprises in China 2013-2021.

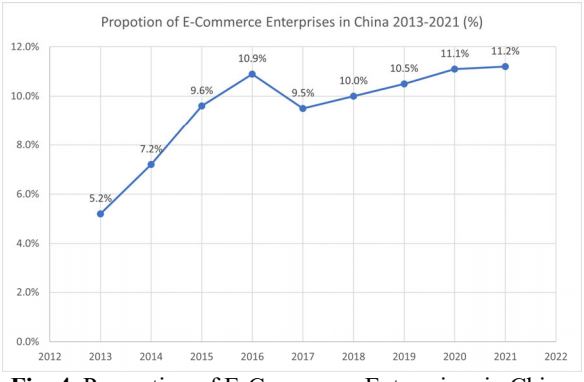

Fig. 4. Proportion of E-Commerce Enterprises in China 2013-2021

Source: (NBS, 2022b)

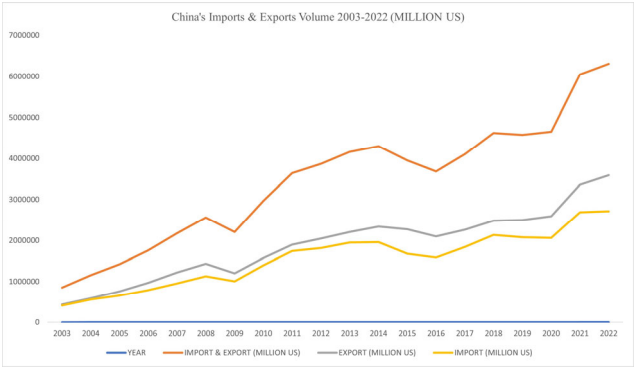

Fig. 5. China's Imports & Exports Volume 2003-2022

Source: (NBS, 2022a)

This research intends to investigate the extent to which CBEC transactions, business infrastructure, professional talents, and development potential influence the growth of China's foreign trade during the past decade, and provides valuable insights into the mechanisms and outcomes of these factors on foreign trade.

2. Literature Review

From 2003 to 2022, China's foreign trade volume has steadily increased year by year. The total import and export trade volume has more than sextupled, with exports increasing by over sevenfold and imports increasing by over fivefold. This growth trend has continued in the following years, as depicted in Fig. 5 (NBS, 2022a). CBEC was a new form of international trade that was developing with the greatest speed, potential, and driving force in China (Chen, Qiu, Wang, & Yang, 2022). In 2012, China's CBEC expanded by 32% to 2.3 trillion yuan, making up 9.6% of all of China's foreign trade. China's e-commerce market was 80% owned by Alibaba in 2013 (Wodnicka & Skurpel, 2021). Between 2017 and 2019, China's imports surged by an average of 27.4 percent yearly, while exports rose by a mean of 60.5% annually (Park, 2022). In recent years, Alibaba's market share has been steadily declining, and it is currently at 48% (down from 62% in 2021), while Kuaishou, Pinduoduo, JD.com, and Douyin have all seen significant increases in their respective market shares (Takigawa, 2022). Figure 6 depicted the market size development of China's ecommerce and CBEC in the past 22 years from 2000 to 2022, from which a steady upward curve is easy to be noticed.

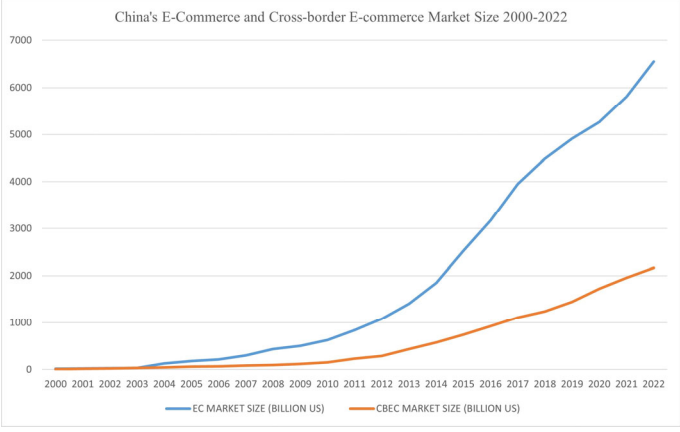

Fig. 6. China's E-Commerce and CBEC Market Size 2000-2022

Source: (WJS, 2022)

The importance of business infrastructure in supporting CBEC operations can be found in some papers. A new environment for CBEC was developed thanks to contemporary information technology applications, including the Internet of Things, cloud computing, big data, and mobile Internet (Pan et al., 2022). Modern technology Al is being incorporated by increasingly more online stores to enhance consumer pleasure and loyalty (Nagy & Hajdú, 2021). The creation of intelligent warehousing has improved the backward phenomena of traditional warehousing by establishing the structure of the intelligent warehousing system and analyzing the requirements for its functions based on multimedia technology. Systematizing, unifying production, sales, management, and logistics is a new direction for the development of CBEC logistics based on the supply chain perspective (Zhang, 2022). Online shopping in China has become more popular and convenient thanks to the emergence of new payment options like AliPay and Wechat Pay. The scale of mobile payments in China expanded by 209% in 2017 over the previous year, and the growth rate kept rising (Shen, 2019). Blockchain is used to tackle the cross-border electronic payment problem (Li, 2020). Some studies have discussed the demand and current situation for CBEC talents in China. As of March 2022, the number of individuals engaged in direct employment and online entrepreneurship in the e-commerce sector reached 412.632 million. The number of e-commerce information technology professionals amounted to 4.871 million, while the e-commerce service industry employed 8.8495 million people (CMC, 2021). Additionally, the e-commerce supporting industries employed 12.2943 million individuals. In total, there were 67.278 million e-commerce professionals, an increase of 7.128 million compared to the 60.15 million recorded in 2020 (CMC, 2021). Currently CBEC talents are generally junior talents and can only engage in basic works such as product listing, customer consulting, etc., while lacking of skills such as product marketing, potential customer analysis, international logistics operations, supply chain management and so on (Ren, 2021). New professional positions in CBEC, such as live streaming, digital marketing, overseas warehouse management, and localized operations, have witnessed explosive growth in talent demand (CMC, 2022). Gong (2022) built a talent cultivation mode BACCE as shown in Fig. 7, namely basic skills, applicable skills, certificate, competition, and entrepreneurship, to effectively improve CBEC talents' comprehensive CBEC practical abilities.

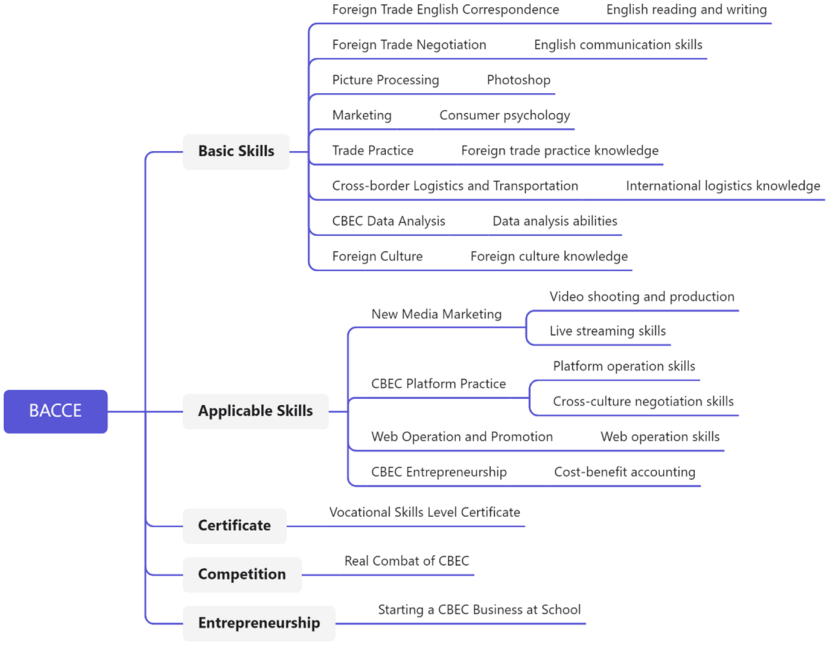

Fig. 7. Contents of BACCE for CBEC Talents

Source: (Gong, 2022)

Regarding the development potential of CBEC, this research primarily examines the literature related to the development of CBEC enterprises. CBEC's low cost and high degree of control were key factors in encouraging innovation in SMEs and can assist SMEs in removing some of the obstacles to internationalization (Pan et al., 2022). Enterprises engaged in international trade need to consider talent training, improve product quality, strengthen brand building, build a marketing system, select logistics channels scientifically, and strengthen cooperation between government and enterprises (Yuan, 2021). Companies essentially need to measure their customers' level of interaction and satisfaction to improve their business performance (Hamed & Madanchian, 2021). Around 13,283 CBEC-focused businesses operate throughout the nation, the distribution detail is as shown in Figure 8 (Xia & Liu, 2021).

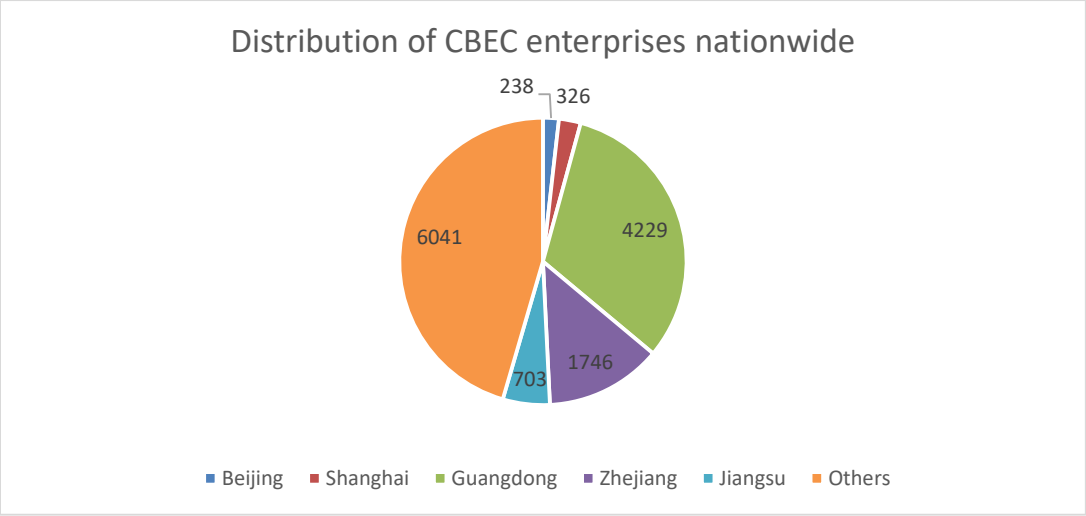

Fig. 8. Distribution of CBEC Enterprises Nationwide
Source: (Xia & Liu, 2021)

In summary, previous studies have explored various dimensions of CBEC and foreign trade, such as CBEC transactions, infrastructure development, talent influence, and development potential. However, most of them were from a single perspective instead of a comprehensive one, and the research timeframe is out-of-date, so there is a need for more comprehensive and nuanced analysis of these dimensions and their impact on foreign trade.

3. Research Methodology

This research investigates the impact of influential factors in the development of cross-border e-commerce (CBEC), namely CBEC transactions, business infrastructure, professional talents, and development potential, on foreign trade in China over the past decade using a quantitative empirical research methodology. Through empirical research, this research offers valuable insights into the mechanisms and outcomes of these factors on foreign trade. The dependent variable is foreign trade. Its data is the total of China's import and export commerce with 47 particular trading partners as the trade volume between these countries and China accounts for over 80% of China's total import and export trade. Therefore, they can provide a good overall reflection of China's import and export trade situation. The data were collected from IMF (International Monetary Fund). The following Table 1 lists the 47 countries.

Table 1
China's Major Trading Partners

EU	G20	RCEP	APEC	OTHERS
Belgium	Argentina	Brunei	Australia	Colombia
Denmark	Australia	Cambodia	Canada	Iceland
Finland	Brazil	Indonesia	Chile	Kazakhstan, Rep. of
France	Canada	Laos	Indonesia	Morocco
Germany	France	Malaysia	Japan	Nigeria
Greece	Germany	Myanmar	South Korea	Norway
Italy	India	Philippines	Malaysia	Pakistan
Netherlands	Indonesia	Singapore	Mexico	
Portugal	Italy	Thailand	New Zealand	
Spain	Japan	Vietnam	Papua New Guinea	
Sweden	Mexico		Peru	
United Kingdom	Russia		Philippines	
	Saudi Arabia		Russia	
	South Africa		Singapore	
	South Korea		Thailand	
	Turkey		United States	
	United Kingdom		Vietnam	
	United States			

Source: Author's Actual Research

The independent variables are CBEC transaction, CBEC business infrastructure, CBEC professional talents, and CBEC development potential. Their indicators are gathered in accordance with the measurement indicators based on the National E-commerce Demonstration Cities (Trial) Evaluation Index System, which was jointly released by the General Administration for Industry and Commerce, and the Ministry of Commerce, etc., and the China E-Commerce Development Index Report

2022 (Tsinghua, 2023). Based on this and grounded on the data accessibility, the research selected below indicators for each variable for analysis. The total CBEC transactions, the quantity of e-commerce enterprises, and the number of online users reflect the CBEC transaction, the Internet penetration rate, the cross-border payments, and the cross-border logistics market size reflect the construction of CBEC business infrastructure, the quantity of e-commerce practician reflects the CBEC professional talents, proportion of e-commerce enterprises and penetration rate of CBEC reflect the CBEC development potential. The data for the nine indicators were collected from online database WJS (Wang Jing She) and covers the years 2013 to 2022. The explanatory notes of each independent variable (IV) and indicator are put in Table 2.

Table 2
The Explanatory Notes of Independent Variable and Indicator

Variable (IV)	IV Specification	No.	IV Indicator	Unit	IV Explanation
A	CBEC transaction	A1	Total CBEC transactions	Billion US Dollars	Scale of CBEC participants
		A2	Number of e-commerce enterprises	Number	
		A3	Number of online users	Thousand People	
B	CBEC business infrastructure	B1	Internet penetration rate	Percent	Degree of trade facilitation
		B2	Cross-border payments	Billion US Dollars	
		B3	Cross-border logistics market size	Billion US Dollars	
C	CBEC professional talents	C1	Number of e-commerce practitioners	Thousand People	Personnel basis
D	CBEC development potential	D1	Proportion of e-commerce enterprises	Percent	CBEC development strength and level
		D2	Penetration rate of CBEC		

Source: Author's Actual Research

In the analysis, this research will first use Principal Component Analysis to calculate the weights of various IV indicators, and then obtain the value of each independent variable accordingly. In the field of international economics, the gravity model is regarded as one of the most effective empirical models (Gómez-Herrera, 2013). It revealed that the size of trade flows between two countries is proportional to the size of their respective and inversely proportional to the distance between them (Liu, 2020). On this basis, scholars have introduced many other factors such as population, per capita income, exchange rate, and cultural affinity into the model and produce rich study findings (Wang, 2020). Considering the acquisition of data and the actual situation, this research further expanded and revised the gravity model to make the model fully reflect the impact of the four influential factors of CBEC on foreign trade in China. Subsequently, the value of each variable will be successively incorporated into the gravity model of trade for analysis, the GDP, POP and TDIS are selected as control variables. This research only introduced the control variables GDP and population of China's trading partner, and economic distances between China and its trading partners to the gravity model, because in this model, China's GDP and population are relatively stable, we assume their impact on trade volume is constant over the research period. And by using fixed effects to control for these characteristics, it avoided the problem of multicollinearity. This approach also simplifies the model, ensuring its stability and explanatory power. The variables for the research model are described below Table 3.

Table 3
Explanation of Variable for Empirical Research

Variable	Explanation	Data Source
Trade	China's imports and exports with business partners	IMF
A	CBEC transaction	Analysis Result
B	CBEC business infrastructure	Analysis Result
C	CBEC professional talents	Analysis Result
D	CBEC development potential	Analysis Result
GDP	Gross domestic product of business partners	World Bank
POP	Total population of business partners	World Bank
TDIS	The economic distance between China and its business partners	CEPII

Source: Author's Actual Research

The expression of the gravity models are as follows:

$$\ln TR_{it} = \alpha_0 + \alpha_1 A_{ct} + \alpha_2 \ln GDP_{it} + \alpha_3 \ln POP_{it} + \alpha_4 TDIS_{ci} + \varepsilon_{it}$$

$$\ln TR_{it} = \alpha_0 + \alpha_1 B_{ct} + \alpha_2 \ln GDP_{it} + \alpha_3 \ln POP_{it} + \alpha_4 TDIS_{ci} + \varepsilon_{it}$$

$$\ln TR_{it} = \alpha_0 + \alpha_1 C_{ct} + \alpha_2 \ln GDP_{it} + \alpha_3 \ln POP_{it} + \alpha_4 TDIS_{ci} + \varepsilon_{it}$$

$$\ln TR_{it} = \alpha_0 + \alpha_1 D_{ct} + \alpha_2 \ln GDP_{it} + \alpha_3 \ln POP_{it} + \alpha_4 TDIS_{ci} + \varepsilon_{it}$$

where, TR_{it} represents the total trade volume between country i and China in year t, A_{ct} represents China's CBEC transaction in year t, B_{ct} represents China's CBEC business infrastructure in year t, C_{ct} represents China's CBEC professional talents in year t, D_{ct} represents China's CBEC development potential in year t, GDP_{it} is the gross domestic product of country i in year

t, POP_{it} is the population of country i in year t, $TDIS_{ci}$ indicates the economical distance between China and country i, and ε_{it} stands for random disturbance term.

4. Data Analysis

The software SPSS is used to calculate the value of each independent variable CBEC transaction volume, business infrastructure, professional talents, and development potential, and the software STATA version 18 is used to perform all the regression analyses for the research. The data for analyses are short panel data containing observations from China's 47 trading partners, which may involve individual fixed effects. Consequently, this research employs a fixed effects model for each regression analysis considering the existence of individual fixed effects, the nature of the research issue, and the data structure. Firstly, the Principal Component Analysis was conducted to calculate the comprehensive score weights for the nine indicators representing the four independent variables CBEC transaction, CBEC business infrastructure, CBEC professional talents, and CBEC development potential, and the values for them were obtained, as shown in Table 4.

Table 4
Values for The Independent Variables

YEAR	CBEC Transaction (A)	CBEC Business Infrastructure (B)	CBEC Professional Talents (C)	CBEC Development Potential (D)
2013	0.18	0.18	0.05	0.10
2014	0.22	0.19	0.06	0.14
2015	0.26	0.21	0.06	0.18
2016	0.30	0.23	0.07	0.22
2017	0.31	0.27	0.08	0.21
2018	0.34	0.32	0.11	0.22
2019	0.38	0.39	0.13	0.24
2020	0.44	0.46	0.16	0.27
2021	0.48	0.52	0.19	0.26
2022	0.52	0.58	0.20	0.27

Source: Author's Actual Research

Next, the Harris and Tzavalis (1999) test was performed to guarantee the data stationarity of all the underlying time series data in a short panel, thus help ensure the validity of the regression analysis. Then the endogeneity possibility of the main explanatory variables was examined, and the results indicated that the model does not suffer from endogeneity issues. And the multicollinearity tests were conducted for each model to ensure their reliability and robustness. To provide a more intuitive representation of the data characteristics, descriptive statistics for the main variables of interest are presented in Table 5.

Table 5
Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
InTrade	470	10.244	1.49	6.031	13.445
InGDP	470	9.598	1.274	6.923	11.573
diff InPOP	470	.009	.007	-.042	.033
TDIS	470	.884	2.314	.003	19.914
A (CBEC Transaction)	470	.343	.106	.176	.516
B (CBEC Business Infrastructure)	470	.337	.137	.183	.582
C (CBEC Professional Talents)	470	.112	.053	.054	.202
D (CBEC Development Potential)	470	.21	.053	.101	.269

Source: Author's Actual Research

Subsequently, this research employed the Feasible Generalized Least Squares (FGLS) method for all data regression analyses to deal with the possible issues such as heteroskedasticity, time-series correlation, and cross-sectional correlation existed in the panel regression models, and ensure the rationality and effectiveness of the results. Regression analyses were conducted successively based on the gravity models. Four explanatory variables were each subjected to regression analysis, and the regression results were obtained as follows shown in Table 6. From the regression results, it is evident that the four primary explanatory variables, namely A (CBEC transaction), B (CBEC business infrastructure), C (CBEC professional talents), and D (CBEC development potential), all exhibit significant effects on China's import and export trade in the past decade from 2013-2022, and all at the 1% significance level. This indicates that all four primary explanatory variables have significant positive impacts on China's import and export trade. Among them, the coefficient for A (CBEC transaction) is 1.386, indicating that for every 1% increase in China's cross-border e-commerce transaction volume, there is a 1.386% increase in China's total import and export trade. The coefficient for B (CBEC business infrastructure) is 1.141, indicating that for every 1% increase in China's cross-border e-commerce infrastructure, there is a 1.141% increase in China's total import and export trade. The coefficient for C (CBEC professional talents) is 2.916, indicating that for every 1% increase in China's cross-border e-commerce professional talents, there is a 2.916% increase in China's total import and export trade, making it the most significant among the four primary indicators. The coefficient for D (CBEC development potential) is 2.212, indicating that for every 1% increase in China's cross-border e-commerce development potential, there is a 2.212% increase in China's total import and export trade.

Table 6
Regression Result

	InTrade	InTrade	InTrade	InTrade
A	1.386 (13.08)**			
B		1.141 (13.87)**		
C			2.916 (13.76)**	
D				2.212 (10.55)**
InGDP	0.723 (5.10)**	0.604 (4.21)**	0.612 (4.26)**	0.930 (6.26)**
diff_InPOP	-1.712 (0.71)	-0.865 (0.42)	-0.724 (0.35)	-5.000 (1.37)
TDIS	-0.107 (1.73)	-0.105 (1.77)	-0.106 (1.78)	-0.121 (1.82)
_cons	2.938 (2.13)*	4.168 (3.00)**	4.144 (2.98)**	1.009 (0.70)
R^2	0.72	0.74	0.74	0.63
		** p<0.05; ** p<0.01*		

Source: Author's Actual Research

Furthermore, it can also be seen that the controlled variables, the GDP of the trading partner country, has a significant positive effect on China's foreign trade at the 1% significance level, while the population of China's trading partner countries, and the economic distance between China and trading countries did not reach a significant level of impact on China's import and export trade. The findings showed that China's foreign trade is consistently impacted by the trading partner country's GDP, which has a considerable positive influence, and by the economic distance between two nations, which has a negative effect. Regarding the population impact of the trade partner country, this could be due to a shift in the market demand structure that occurred over this time, which could have resulted in a decline in some market needs or in alterations to consumer consumption patterns.

5. Discussion and Recommendation

5.1 Discussion of the Results

The analysis result indicates that CBEC transaction, CBEC business infrastructure, CBEC professional talents, and CBEC development potential all demonstrate significant positive effects on the foreign trade development in China in the past decade, and the effects are statistically significant at the 1% level. Specifically, for every 1% increase in China's cross-border e-commerce transaction volume, there is a 1.386% increase in China's total import and export trade, for every 1% increase in China's cross-border e-commerce infrastructure, there is a 1.141% increase in China's total import and export trade, for every 1% increase in China's cross-border e-commerce professional talents, there is a 2.916% increase in China's total import and export trade, and for every 1% increase in China's cross-border e-commerce development potential, there is a 2.212% increase in China's total import and export trade. The research summarized and inferred the intrinsic relationship between the influential factors of cross-border e-commerce and foreign trade, concluding that with the growth of cross-border e-commerce transactions, the improvement of cross-border e-commerce business infrastructure, the continuous development of cross-border e-commerce talent cultivation, and the expansion of cross-border e-commerce development potential, cross-border e-commerce will further promote the growth of China's foreign trade, profoundly influencing the import and export trade of various countries.

In summary, the results demonstrate that all the four main influential factors of cross-border e-commerce have significant positive effects on China's import and export trade, with CBEC professional talents having the greatest impact. The analysis results indicate that the increase in e-commerce practitioners, professional talents, and internet users will all promote China's import and export trade significantly. Both e-commerce infrastructure and development potential also have positive effects on China's import and export trade. This suggests that the development of technology, improvement of infrastructure, and the continuous increase in the number of e-commerce enterprises and internet penetration rates will enhance China's e-commerce development level, thereby promoting the development of China's import and export trade.

5.2 Research Significance

From the perspective of the research significance, the findings of this research underscore the pivotal role that cross-border e-commerce has played in propelling foreign trade development in China over the past decade. By highlighting the significant positive effects of CBEC transactions, business infrastructure, professional talents, and development potential, this research provided compelling evidence that CBEC has been a critical driver of economic growth and international trade expansion for China. The enhancement of CBEC transactions has facilitated more efficient and broader market access, while the development of robust CBEC business infrastructure has ensured smoother operational processes and logistics. Additionally, the

cultivation of CBEC professional talents has equipped the industry with the necessary expertise to navigate the complexities of global trade. Lastly, the promising development potential of CBEC indicated a sustainable trajectory for future growth, positioning China as a leading player in the global e-commerce landscape. These insights are invaluable for policymakers, industry stakeholders, and academic researchers, as they highlight the areas of investment and development that can further bolster China's foreign trade through CBEC initiatives.

5.3 Research Limitations

While the research provides valuable insights into the positive impact of CBEC transactions, business infrastructure, professional talents, and development potential on China's foreign trade development over the past decade, several limitations must be acknowledged. Firstly, the research's temporal scope is limited to the past ten years, which may not capture long-term trends and future projections. Secondly, the analysis primarily relies on available quantitative data, potentially overlooking qualitative factors such as policy changes, international trade relations, and socio-economic conditions that could also influence CBEC's impact. Thirdly, the research focuses on China, and the findings may not be generalizable to other countries with different economic environments and CBEC practices. Addressing these limitations in future research could provide a more comprehensive understanding of CBEC's role in foreign trade development.

5.4 Measures and Research Recommendations

Based on the analysis indicating that CBEC transactions, business infrastructure, professional talents, and development potential have significantly positive effects on China's foreign trade development over the past decade, it is recommended to continuously enhance digital infrastructure to support seamless cross-border e-commerce activities, develop targeted education and training programs to cultivate professional talents, and refine regulatory frameworks to streamline customs procedures and reduce trade barriers. Additionally, encouraging innovation and entrepreneurship through incentives, strengthening international partnerships to open new markets, and promoting sustainable CBEC practices will ensure sustained growth and competitiveness in the global market. These measures will collectively enhance the impact of CBEC on China's foreign trade and contribute to long-term economic development.

As to future studies, as there are many areas that this research has not addressed, future research could focus on several key areas to deepen the understanding of CBEC's impact on foreign trade development. Firstly, longitudinal studies examining CBEC trends over an extended period can provide insights into long-term effects and sustainability. Secondly, qualitative research exploring the influence of policy changes, international trade relations, and socio-economic conditions can complement quantitative findings and offer a more comprehensive view. Thirdly, comparative studies between China and other countries with different economic environments can identify best practices and potential improvements. Additionally, investigating the causal mechanisms underlying the positive effects of CBEC transactions, business infrastructure, professional talents, and development potential will help refine strategies for maximizing CBEC benefits. Finally, exploring the role of emerging technologies, such as blockchain and artificial intelligence, in enhancing CBEC efficiency and security can provide valuable guidance for future policy and industry practices.

6. Conclusion

In conclusion, this research has demonstrated the significant positive impact of CBEC on the development of foreign trade in China over the past decade. Through the analysis of CBEC transactions, business infrastructure, professional talents, and development potential, it has become evident that CBEC has been a crucial driver of economic growth and international trade expansion. The findings underscore the importance of continuous investment in digital infrastructure, education, regulatory refinement, innovation, international partnerships, and sustainability practices to sustain and enhance the growth of CBEC. Moreover, future research should delve deeper into longitudinal trends, qualitative factors, comparative analyses, causal mechanisms, and technological advancements to further advance our understanding of CBEC's role in shaping China's foreign trade landscape. By leveraging the insights gained from this research, policymakers, industry stakeholders, and researchers can collaborate to foster a conducive environment for CBEC development, ensuring China's continued competitiveness and sustainable economic development in the global arena.

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