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Research on the Impact Mechanism and Support System of Digital Trade Barriers on Cross-border E-commerce Exports in Wenzhou

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Abstract

This paper delves into the various typical barriers encountered by Wenzhou's cross-border e-commerce exports in the field of digital trade, meticulously analyzing the immediate and long-term impacts of these barriers. Based on comprehensive data, the paper conducts an empirical study on how digital trade barriers affect Wenzhou's cross-border e-commerce exports. Finally, from the perspectives of government, industry, and enterprise practices, specific and feasible strategies are proposed to build a comprehensive support system, ensuring the steady and sustainable development of Wenzhou's cross-border e-commerce exports.

Keywords

Digital Trade Barriers; Cross-border E-commerce Exports; Impact Mechanism; Support System.

1. Introduction

Digital trade barriers refer to a series of legal frameworks, regulations, and implementation strategies aimed at safeguarding domestic intellectual property, cross-border data flows, digital goods, internet services, and related fields. In recent years, with the rapid rise of digital trade, issues of digital security and personal privacy protection have become increasingly severe. Governments around the world have introduced new regulatory measures targeting digital service trade to maintain the stable operation of their domestic economies. In this context, the cross-border e-commerce industry has faced unprecedented development challenges and restrictions. So, what are the key digital trade barriers encountered by cross-border e-commerce businesses in Wenzhou?

2. Main Forms of Digital Trade Barriers Faced by Wenzhou's Cross-border E-commerce Exports

Through in-depth field research and interviews, several typical obstacles and barriers faced by Wenzhou's cross-border e-commerce exports in the field of digital trade have been identified.

First, from the perspective of infrastructure and connectivity. Wenzhou's cross-border e-commerce businesses encounter diverse restrictions in infrastructure and network connectivity strategies when expanding into global markets, such as internet connectivity limitations, constraints on communication service applications, and strict controls on cross-border data flows and transmissions.

Second, from the perspective of intellectual property. Wenzhou enterprises have insufficient awareness of intellectual property protection in the cross-border e-commerce sector, leading to a series of severe challenges in the global market. Especially in the fashion industry, such as clothing and footwear, some Wenzhou enterprises tend to replicate designs of well-known

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brands and attempt to sell them through cross-border e-commerce platforms. However, this behavior frequently triggers complaints from merchants and consumers, resulting in a wave of returns, product removals, reduced store rankings, and even store closures.

Third, from the perspective of electronic transactions. In the latest 2023 USTR Notorious Markets List, cross-border e-commerce has become a focal point, with major Chinese cross-border e-commerce export platforms such as AliExpress and DHgate being mentioned, alongside e-commerce platforms like Taobao, WeChat, and Pinduoduo. The release of this list poses a serious challenge to Wenzhou's cross-border e-commerce enterprises, as these businesses are widely present on the aforementioned platforms. The reputational damage to these platforms directly affects the market image of the enterprises, indirectly suppressing sales growth and adversely affecting international exports.

Fourth, from the perspective of cross-border payments. In the cross-border e-commerce sector, electronic payments, as a core component, rely on internet platforms to enable the transfer of funds between trading parties through digital means, thereby completing the transaction cycle. A notable characteristic is the small-amount, high-frequency transaction model, which has become the norm in cross-border electronic payments. In countries with significant emphasis on personal privacy protection, it is common to implement annual cross-border payment limits and stringent personal information verification strategies to ensure data security and privacy. However, while these measures protect personal privacy, they may also pose certain obstacles to cross-border e-commerce export businesses.

3. Impact Mechanism of Digital Trade Barriers on Wenzhou's Cross-border E-commerce Exports

3.1. Direct Impacts

3.1.1. Market Access Restrictions

In terms of infrastructure and connectivity, some countries, aiming to maintain national cybersecurity and privacy protection, tend to implement data localization strategies, requiring international digital enterprises to establish dedicated data centers within their territories and store data on local servers. This not only significantly increases operational costs for foreign enterprises but may also hinder the cross-border flow of data and the expansion of global business networks. Additionally, data localization requirements, combined with other regulatory frameworks, collectively limit the market penetration potential of foreign service providers, further complicating and challenging market competition.

3.1.2. Increased Trade Costs

When expanding import and export businesses, enterprises need to thoroughly research the intellectual property protection status of target markets and develop comprehensive intellectual property risk prevention strategies and action plans. While these risk prevention measures are necessary, they undoubtedly increase operational costs, directly affecting profit margins and market competitiveness. Especially for small and medium-sized enterprises with limited resources, these additional costs may become barriers to participating in international market competition, as they may struggle to bear such heavy financial burdens alone.

3.1.3. Cross-border Export Obstacles

In addressing the challenges posed by the Notorious Markets List, cross-border enterprises must bear additional costs to repair brand reputation damaged by negative perceptions. These additional costs ultimately permeate the cost structure of products exported through cross-border e-commerce platforms, weakening their competitive advantage in the global market. More severely, some countries may impose stricter regulatory measures on imported goods from regions covered by the Notorious Markets List. Additionally, customs authorities may

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increase the inspection rate of goods from these regions, prolonging customs clearance times and adding extra logistics costs, thereby imposing additional burdens and challenges on cross-border e-commerce operations.

3.1.4. Increased Legal Regulatory Costs

In the current global economic landscape, the digital trade sector lacks a universally applicable unified policy framework and measures. Countries tend to customize their own digital service trade regulatory barriers based on their interests, posing significant regulatory challenges to cross-border payment processes and the flow of goods. To strengthen control over domestic data resources and protect citizen privacy, some countries are actively promoting stricter data protection and privacy legal frameworks. These measures often come with strict restrictions on foreign enterprises' access, processing, and cross-border transmission of domestic data, further complicating and increasing uncertainty in data compliance and business expansion for multinational enterprises.

3.2. Long-term Impacts

3.2.1. Reduction in Export Trade Volume

Under the challenge of globalization facing localization barriers, developed countries often exhibit a preference for domestic digital goods and services, driving the stringent standardization of technical requirements. This poses a difficult-to-overcome threshold for developing countries. Even if foreign markets are willing to accept external products and services, importing countries need to invest additional resources in detailed market research and evaluation, along with technical requirement coordination, which increases transaction costs and fulfillment complexity. The inherent nature of digital trade barriers can be interpreted as hidden trade impediments, profoundly affecting the direction and volume of trade flows. The existence of such barriers not only amplifies the risk exposure in cross-border export activities across industries but also directly drives up trade costs, thereby weakening the competitiveness of export products in the international market and ultimately leading to a contraction in the export scale of Wenzhou's cross-border e-commerce. The reduction in export scale further affects Wenzhou's overall export performance and economic growth potential, creating a chain reaction that significantly impacts the regional economic structure and development momentum.

3.2.2. Shift Towards High-value-added Export Categories

In the cross-border e-commerce sector, as the wave of digital transformation deepens, the export product structure is undergoing profound changes, with a gradual shift towards high-value-added industries. To consolidate their domestic market positions, developed countries are increasingly adopting stringent export control measures. Intellectual property barriers, established under the guise of protecting intellectual property, significantly increase the likelihood of intellectual property conflicts and disputes for export goods from developing countries. Meanwhile, with the rising labor costs in Wenzhou due to domestic economic growth, the competitive advantage of low-cost labor-intensive products is gradually diminishing, shifting to regions like Southeast Asia. In this context, the additional transaction costs imposed by digital trade barriers further reduce the profit margins of low-margin goods, driving businesses to actively adjust their strategies and future plans, focusing resources on industries and product lines that can enhance brand value. Specifically, in Wenzhou's cross-border e-commerce export sector, a notable change is the significant increase in the proportion of high-margin, brandable, high-value-added products. This trend directly reflects the impact of digital trade barriers on Wenzhou's cross-border e-commerce export product structure—shifting from low-value-added to high-value-added sectors. This is not only an adjustment in market strategy but also a vivid reflection of industrial transformation and upgrading.

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3.2.3. Loss of Price Advantage

In the export practices of Wenzhou's cross-border e-commerce, physical goods occupy a central position, with pricing mechanisms heavily influenced by intellectual property barriers. Developed countries, leveraging their rich intellectual property foundations, actively expand their patent networks to consolidate and expand their market dominance within established intellectual property frameworks. When Wenzhou's cross-border goods attempt to penetrate these markets, they often face accusations of intellectual property infringement and bear high intellectual property licensing fees. These additional burdens inevitably translate into operational costs, reflected in the final prices of cross-border export products, driving up product prices. Intellectual property barriers, as a high technical threshold, pose significant obstacles to the international circulation of products from developing countries. To meet the high digital standards and technical requirements of developed countries for imported goods, developing countries must increase investments in equipment upgrades, technological innovation, and preliminary exploration before exporting related products. These upfront costs, including potential sunk costs, are ultimately indirectly borne by cross-border consumers, leading to higher export product prices and weakening the original price competitiveness and international market position. Therefore, Wenzhou's cross-border export enterprises must actively seek technological innovation and cost optimization strategies to maintain their products' market competitiveness when facing intellectual property barriers.

3.2.4. Increased Research and Development Investment

Countries worldwide are implementing diverse strategies to strengthen the protection of domestic data flows and impose stricter controls on cross-border data movements. In this context, with the rapid advancement of manufacturing informatization and intelligence, data is not only regarded as a key resource but also increasingly demonstrates its unique value as a highly mobile production factor. As a developing country in the fast-growing digital field, China must address this challenge to secure a larger share in the global cross-border e-commerce export arena. In the short term, China needs to concentrate resources on increasing research and development investment to ensure that products and services meet the stringent technical standards of target export countries. Simultaneously, China should actively seek international cooperation and exchange opportunities in digital technology, using these as important avenues to enhance competitiveness and broaden market access.

4. Empirical Study on the Impact of Digital Trade Barriers on Wenzhou's Cross-border E-commerce Exports

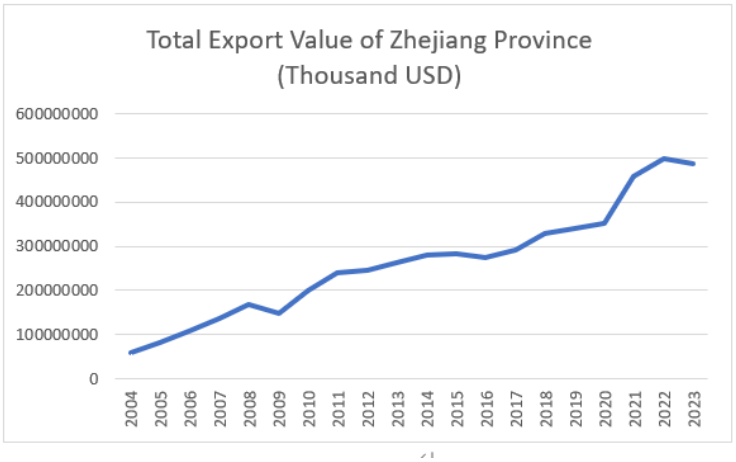

Figure 1 Total Export Volume of Zhejiang Province

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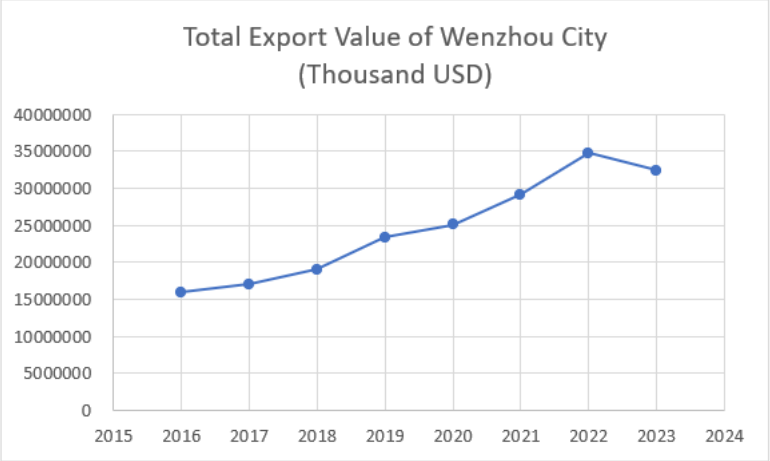

Figure 2 Total Export Volume of Wenzhou City

4.1. Research Design

This paper uses national-year panel data from 2008 to 2021, primarily sourced from China's Customs Database, the Organisation for Economic Co-operation and Development (OECD), the World Bank, and the China Statistical Yearbook. These data cover various aspects of trade flows, economic cooperation, and development levels among countries, providing a solid data foundation for this study. During data processing, the original data were cleaned, filtered, and normalized to ensure the reliability and scientific validity of the research results. By applying econometric models, the paper conducts an in-depth empirical analysis of these data to explore the impact of digital trade barriers on Wenzhou's cross-border e-commerce exports. The research results will provide valuable references for policy formulation and academic research in related fields.

4.1.1. Dependent Variable

Regional export volume (lnexport) is a key indicator for measuring regional export levels. Consistent with previous related studies, this paper uses the natural logarithm of total export volume to measure this indicator. Specifically, the natural logarithm of the total export volume from Zhejiang Province to a particular country (lnexport_zj) is used to represent the overall export level of Zhejiang Province, while the natural logarithm of the total export volume from Wenzhou City to a particular country (lnexport_wz) is used to represent the export level of Wenzhou City. This approach not only effectively reduces data volatility but also more intuitively reflects the differences in export levels between regions in the model.

4.1.2. Main Explanatory Variable

In international trade, DSTRI (Digital Services Trade Restrictiveness Indices) typically refers to the "Digital Services Trade Restrictiveness Index." This barrier involves unfair treatment of imported goods in terms of technical standards, regulations, or certification procedures, thereby adversely affecting products or services from certain countries. The DSTRI index is an important tool for quantifying and assessing digital trade barriers. Based on reports from the Organisation for Economic Co-operation and Development (OECD) on international trade and investment barriers, this paper compiles and calculates the DSTRI index. This index reflects the policies and practices of different countries in digital service trade, providing key data support for the analysis of international trade barriers and their impacts.

4.1.3. Control Variables

This paper controls for the following variables based on previous research: economic development level (lnGdp), regional scale (lnPopu), government participation in economic activities (lnGov), and urbanization level (city rate).

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Table 1 Variable Definitions

Variable Type	Variable Symbol	Variable Name	Measurement Method
Dependent Variable	lnexport_zj	Zhejiang Export Volume	As described in the text
	lnexport_wz	Wenzhou Export Volume	As described in the text
Explanatory Variable	DSTRI	Discriminatory Technical Trade Barriers	As described in the text
Control Variable	lngdp	Economic Development Level	Natural logarithm of the region's GDP
	lnpopu	Regional Scale	Natural logarithm of the region's population
	lngov	Government Participation in Economic Activities	Natural logarithm of general public expenditure
	city rate	Urbanization Level	Urbanization rate

Table 2 presents descriptive statistics for the variables. The average value of lnexport_zj is 7.504, with a standard deviation of 1.196, a maximum value of 9.812, and a minimum value of 4.110. The average value of lnexport_wz is 5.549, with a standard deviation of 1.325, a maximum value of 7.915, and a minimum value of 0, indicating significant variation in Wenzhou's export volume. The average DSTRI value is 1.728, with a standard deviation of 0.326, suggesting that most countries have relatively consistent levels of barriers in technical standards or regulations for imported goods, without significant policy changes or fluctuations. The statistical values for other control variables, such as lngdp, lnpopu, lngov, and city rate, are within reasonable ranges and are consistent with existing research. The average variance inflation factor (VIF) is approximately 1.97, which is below 10 (Ryan, 1997) for regression models, indicating that multicollinearity is not a significant issue in this study.

Table 2 Descriptive Statistics

Variable	Obs	Mean	Std. dev.	Min	Max
lnexport_zj	682	7.504	1.196	4.110	9.812
lnexport_wz	690	5.549	1.325	0	7.915
DSTRI	660	1.728	0.326	0.288	1.992
lngdp	660	7.151	0.795	6.143	8.279
lnpopu	686	8.115	0.862	5.557	9.448
lngov	660	6006	12062	7.690	82519
city rate	686	0.499	0.161	0	0.938

Table 3 presents the correlation coefficients of the main variables. DSTRI shows a significant negative correlation with both lnexport_zj and lnexport_wz, significant at the 1% confidence level, consistent with expectations.

Table 3 Correlation Coefficient Table

	lnexport_zj	DSTRI	lngdp	lnpopu	lngov	city rate
lnexport_zj	1					
DSTRI	-0.142***	1				

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lngdp	-0.775***	-0.052	1			
lnpopu	0.499***	-0.098***	-0.042	1		
lngov	0.462***	-0.634***	-0.208***	0.350***	1	
city rate	0.565***	-0.534***	-0.497***	0.024	0.486***	1
	lnexport_wz	DSTRI	lngdp	lnpopu	lngov	city rate
lnexport_wz	1					
DSTRI	-0.142***	1				
lngdp	-0.775***	-0.052	1			
lnpopu	0.433***	-0.098**	-0.042	1		
lngov	0.464***	-0.634***	-0.208***	0.350***	1	
city rate	0.476***	-0.534***	-0.497***	0.024	0.486***	1

Note: ***p＜0.01, **p＜0.05, *p＜0.1

Table 4 examines the relationship between DSTRI and the export volumes of Zhejiang Province (lnexport_zj) and Wenzhou City (lnexport_wz). Model (1) serves as the baseline model, including only the independent variable DSTRI. The test results show a significant negative correlation between DSTRI and lnexport_zj (beta = -0.273, p < 0.01). This indicates that as the level of DSTRI increases, the export volume of Zhejiang Province significantly decreases. Model (2) adds control variables to Model (1), and the results still show a significant negative correlation between DSTRI and lnexport_zj (beta = -0.224, p < 0.01). This further demonstrates that even after controlling for other influencing factors, an increase in DSTRI still leads to a significant decline in Zhejiang Province's export volume.

Model (3) also serves as the baseline model, including only the independent variable DSTRI. The test results show a significant negative correlation between DSTRI and lnexport_wz (beta = -0.272, p < 0.01). This indicates that the Digital Services Trade Restrictiveness Index also has a significant negative impact on the export volume of Wenzhou City. Model (4) adds control variables to Model (3), and DSTRI still exhibits a significant negative correlation with lnexport_wz (beta = -0.222, p < 0.01). This suggests that even after controlling for other variables, the export volume of Wenzhou City significantly decreases due to an increase in DSTRI.

In summary, the regression analysis results clearly support Hypothesis H1, which posits that the Digital Services Trade Restrictiveness Index significantly reduces the export volumes of both Zhejiang Province and Wenzhou City. Whether in Zhejiang Province or Wenzhou City, this negative correlation is significant, indicating that the inhibitory effect of DSTRI on regional export performance is widely applicable. These research results provide important empirical evidence for understanding and addressing the impact of digital trade barriers. They also emphasize the need to fully consider the potential negative effects of these barriers on regional economies when formulating foreign trade policies.

Table 4 The Relationship Between Digital Trade Barriers and Export Volumes of Zhejiang Province and Wenzhou City

	Zhejiang Province		Wenzhou City	
	(1)	(2)	(3)	(4)
VARIABLES	lnexport_zj	lnexport_zj	lnexport_wz	lnexport_wz
DSTRI	-0.273***	-0.224***	-0.272***	-0.222***
	(-6.46)	(-4.97)	(-6.58)	(-5.03)
lngdp		-1.599***		-1.581***

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		(-75.18)		(-75.77)
lnpopu		0.624***		0.572***
		(7.19)		(6.72)
lngov		-0.000***		-0.000***
		(-8.53)		(-7.98)
city_rate		0.519***		0.539***
		(5.03)		(5.32)
Constant	6.087***	14.050***	4.214***	12.437***
	(78.65)	(18.83)	(55.83)	(16.99)
Observations	660	660	660	660
R-squared	0.990	0.991	0.990	0.991
Number of Country	30	30	30	30
Province FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES

Note: ***p＜0.01, **p＜0.05, *p＜0.1

4.2. Robustness Test

To ensure the reliability and consistency of the research results, this paper primarily employs the following methods for robustness testing:

(1) Excluding the Impact of the Pandemic. Given the extensive and profound impact of the COVID-19 pandemic on international trade, the data for the year 2020 was excluded in the robustness test to avoid abnormal fluctuations caused by the pandemic interfering with the research results. According to the test results in Table 5, after removing the pandemic year, a significant negative correlation remains between DSTRI and the export volume of Zhejiang Province (lnexport_zj) (beta = -0.188, p < 0.01). Similarly, a significant negative correlation is also observed between DSTRI and the export volume of Wenzhou City (lnexport_wz) (beta = -0.187, p < 0.01). These test results are largely consistent with the main analysis findings presented earlier, indicating that even after excluding the impact of the pandemic, digital trade barriers continue to exert a significant inhibitory effect on the export volumes of both Zhejiang Province and Wenzhou City.

Through the robustness test, it can be concluded that the negative correlation between DSTRI and the export volumes of Zhejiang Province and Wenzhou City exhibits strong robustness and is not significantly affected by the abnormal fluctuations caused by the COVID-19 pandemic. This further supports the research hypothesis of this paper and enhances the credibility of the research results.

Table 5 Relationship between digital trade barriers and exports of Zhejiang Province and Wenzhou (excluding epidemic year)

	浙江	温州
VARIABLES	lnexport_zj	lnexport_wz
DSTRI	-0.188***	-0.187***
	(-4.05)	(-4.09)
lngdp	-2.145***	-2.123***
	(-78.26)	(-79.01)
lnpopu	0.561***	0.506***
	(5.89)	(5.42)

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lngov	-0.000***	-0.000***
	(-9.51)	(-8.99)
city_rate	0.471***	0.490***
	(4.50)	(4.78)
Constant	19.032***	17.408***
	(22.47)	(20.97)
Observations	600	600
R-squared	0.991	0.991
Number of Country	30	30
Province FE	YES	YES
Year FE	YES	YES

Note: ***p＜0.01, **p＜0.05, *p＜0.1

(2) To address potential reverse causality and endogeneity issues, this paper applies a one-period lag to the explanatory variable DSTRI (i.e., using the lagged DSTRI, denoted as LDSTRI) for fixed-effects analysis. Previous research has confirmed that DSTRI has a significant negative impact on lnexport_zj and lnexport_wz. However, it is also possible that regions or companies with higher export volumes may adopt different coping strategies or measures in response to DSTRI, thereby influencing changes in DSTRI, which could lead to endogeneity problems. To mitigate this potential issue, this paper employs a lagged treatment of DSTRI to ensure the unidirectional nature of the causal relationship. According to the test results in Table 6, the lagged DSTRI (LDSTRI) still exhibits a significant negative correlation with the export volume of Zhejiang Province (lnexport_zj) (beta = -0.129, p < 0.01), and a significant negative correlation with the export volume of Wenzhou City (lnexport_wz) (beta = -0.128, p < 0.01). These results are largely consistent with the main analysis findings, indicating that even when considering the lag effect, digital trade barriers continue to significantly inhibit the export volumes of Zhejiang Province and Wenzhou City. By lagging DSTRI, this paper further validates the negative relationship between DSTRI and export volumes and reduces the impact of potential endogeneity issues. These test results further support the research conclusions of this paper, enhancing the robustness and persuasiveness of the findings.

Table 6 Test Results with the Independent Variable Lagged by One Period

	浙江	温州
VARIABLES	lnexport_zj	lnexport_wz
LDSTRI	-0.129***	-0.128***
	(-2.85)	(-2.87)
lngdp	-1.462***	-1.448***
	(-66.26)	(-66.59)
lnpopu	0.556***	0.514***
	(6.21)	(5.82)
lngov	-0.000***	-0.000***
	(-8.45)	(-8.00)
city_rate	0.569***	0.584***
	(5.23)	(5.45)
Constant	13.523***	11.862***
	(17.59)	(15.66)
Observations	630	630

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R-squared	0.990	0.991
Number of Country	30	30
Province FE	YES	YES
Year FE	YES	YES

Note: ***p＜0.01, **p＜0.05, *p＜0.1

This paper also employs the Generalized Method of Moments (GMM) for analysis to further validate the robustness of the research findings. The GMM is an effective tool, particularly suited for addressing endogeneity issues and dynamic panel data. According to the test results presented in Table 7, there is a significant negative correlation between the one-period lagged DSTRI (LDSTRI) and the export volume of Zhejiang Province (lnexport_zj) (beta = -0.519, p < 0.01). Similarly, a significant negative correlation is observed between LDSTRI and the export volume of Wenzhou City (lnexport_wz) (beta = -0.511, p < 0.01). These results are consistent with the earlier analysis, further confirming the adverse impact of digital trade barriers on the export volumes of both Zhejiang Province and Wenzhou City. The findings demonstrate that the conclusions of this study remain consistent across different estimation methods, thereby attesting to the robustness of the results.

Table 7 Generalized Method of Moments (GMM) Analysis Results

	浙江	温州
VARIABLES	lnexport_zj	lnexport_wz
LDSTRI	-0.519***	-0.511***
	(-11.20)	(-11.13)
lngdp	-1.485***	-1.473***
	(-44.21)	(-44.35)
lnpopu	0.604***	0.599***
	(58.68)	(58.78)
lngov	0.000	0.000
	(0.75)	(0.97)
city_rate	0.071	0.073
	(0.74)	(0.77)
Constant	14.180***	12.235***
	(43.01)	(37.52)
Observations	630	630
Province FE	YES	YES
Year FE	YES	YES

Note: ***p＜0.01, **p＜0.05, *p＜0.1

5. Research on the Support System to Mitigate the Impact of Digital Trade Barriers

Currently, cross-border e-commerce has become a new growth driver for foreign trade. Therefore, it is crucial to adopt appropriate measures to minimize the impact of digital trade barriers on cross-border e-commerce while protecting personal privacy and data security. To address the effects of digital trade barriers, specific measures are proposed from three

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perspectives—government, industry, and enterprises—to build a support system that ensures the healthy and sustainable development of Wenzhou's cross-border e-commerce exports.

5.1. Government Level

5.1.1. Strengthening Infrastructure Development

Infrastructure serves as the cornerstone of industrial prosperity, profoundly shaping the future development space and potential of industries. In the vast landscape of cross-border e-commerce, the maturity of digital infrastructure has become a core engine driving the agglomeration and upgrading of information-based industries. The construction process of digital infrastructure is closely linked to the development effectiveness of cross-border e-commerce. Therefore, deepening the seamless integration of traditional industries with digital technologies and guiding industries toward informatization and intensive transformation are critical steps to unleash the potential of cross-border e-commerce exports. At the same time, strengthening the strategic planning and construction of digital infrastructure at the national level is equally important to prevent it from becoming a constraint on the in-depth development of cross-border e-commerce. With the rapid development of the digital economy and internet information technology, various industries are actively embracing the global wave of cross-border e-commerce. From traditional manufacturing enterprises to digital content innovators, companies are embarking on international journeys, leveraging cross-border e-commerce platforms to explore new markets overseas. In this context, the government needs to adopt a global perspective, incorporating the upgrading of digital trade infrastructure into the national strategic agenda. Government departments such as the Ministry of Industry and Information Technology, the Ministry of Foreign Affairs, and the Cyberspace Administration should enhance cross-departmental collaboration, establishing specialized working groups for cross-border digital trade. These groups should focus on optimizing cross-border payment solutions, ensuring the security and smooth export of digital products, and achieving a positive interaction and coordinated development between cross-border e-commerce exports, intellectual property protection, data security, and national economic security. Additionally, enhancing the flexibility and resilience to address digital trade barriers, accurately grasping the future development trends of cross-border e-commerce, and continuously optimizing strategic layouts and response strategies are of immeasurable value in promoting the steady progress and sustained prosperity of the industry.

5.1.2. Participating in the Formulation of Cross-border E-commerce Rules

Currently, the cross-border e-commerce sector is entering an unprecedented phase of rapid growth. However, developed countries, represented by Europe and the United States, have adopted a series of restrictive trade measures under the pretext of protecting national economic security and maintaining industrial advantages. These measures, such as intellectual property barriers and data localization requirements, not only stifle the innovation momentum of developing countries in the field of digital information technology but also significantly hinder the global expansion of cross-border e-commerce. In view of this, reforming international trade rules, particularly those related to digital trade and cross-border e-commerce, is not only a forward-looking requirement for the long-term development of cross-border e-commerce but also an inevitable demand for the deeper development of economic globalization. Driven by this global trend, developed countries such as Europe and the United States have taken the lead in launching a series of key rule initiatives aimed at strengthening intellectual property protection, advocating for tariff reduction policies on digital goods, and promoting the unimpeded flow of cross-border data. Such initiatives not only reflect the importance placed on the innovation environment but also further advance the digitalization of international trade and the deepening of cross-border cooperation. In contrast, although China has achieved significant success in cross-border e-commerce exports, as a major player

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in digital trade and cross-border exports, it still lags in effectively promoting relevant digital trade rules. Therefore, the Chinese government should leverage its advantageous position in the field of digital trade to more actively participate in the construction and negotiation of international digital trade rule systems. It should conduct in-depth analysis and evaluation of existing rules, aiming to propose a digital trade framework that reflects the development needs of developing countries' cross-border e-commerce while balancing the interests of most countries globally. At the same time, China should actively conceive and introduce a "Chinese model blueprint" that aligns with its unique development path in cross-border e-commerce, thereby guiding global digital trade rules toward a more fair, universally beneficial, and inclusive direction.

5.1.3. Introducing a Series of Support Policies

The government should introduce relevant policies to support the development of cross-border e-commerce. Improving the Financing Environment: Actively advocate for financial institutions to enhance financial support for cross-border e-commerce enterprises, including but not limited to optimizing the framework of export credit insurance to reduce financing difficulties and costs for enterprises and accelerate capital flow efficiency. Deepening Tax Incentive Policies: Provide detailed guidelines for tax refund operations for cross-border e-commerce overseas warehouse export businesses, effectively reducing the tax burden on enterprises. Upgrading the Cross-border Payment System: Support compliant banking institutions and third-party payment platforms in designing efficient and low-cost cross-border fund settlement solutions tailored for cross-border e-commerce, and simplify foreign exchange management processes for small and micro enterprises to enhance the convenience and efficiency of cross-border capital flows. Updating Intellectual Property Protection Strategies: Comprehensively revise the intellectual property protection guidelines for the cross-border e-commerce sector to enhance enterprises' awareness and capabilities in intellectual property protection, fostering a fairer and healthier business environment. Streamlining Customs Clearance Processes: Strengthen the informatization of customs clearance systems for cross-border e-commerce to improve clearance efficiency, shorten clearance cycles, and reduce various costs in the clearance process. Building Compliance Platforms for Overseas Expansion: Encourage regions with the necessary conditions to explore the establishment of one-stop compliance platforms for cross-border e-commerce overseas expansion, aggregating key overseas legal and tax resources to provide precise services for enterprises, helping them effectively navigate the complex challenges of international markets. Market Expansion and Brand Enhancement Strategies: Actively support cross-border e-commerce enterprises in participating in important domestic and international exhibitions, broadening their international market perspectives, and enhancing their brand influence and visibility on the global stage.

5.2. Industry Level

5.2.1. Formulating Industry Rules and Mechanisms

Cross-border e-commerce industry associations can establish a self-regulatory framework for the cross-border e-commerce industry, guiding enterprises to operate with integrity and strictly adhere to international trade standards and legal regulations, thereby effectively avoiding trade obstacles and barriers caused by non-compliant operations. At the same time, efforts should be made to build an efficient and fair cross-border e-commerce dispute mediation system, providing enterprises with swift and effective channels for resolving disputes, ensuring the harmonious and stable development of the industry.

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5.2.2. Promoting Standard Setting and Certification

Cross-border e-commerce industry associations can participate in the core of standard setting for the cross-border e-commerce sector, proactively leading or collaborating to advance the construction of a multi-dimensional standard system covering data exchange, information security, and product quality control. This will deepen the standardization process of the industry and enhance overall operational norms. Additionally, comprehensive cross-border e-commerce certification service solutions should be provided, including but not limited to compliance certification for cross-border e-commerce platforms and authoritative product quality certification, aiming to help enterprises strengthen their compliance management foundation, avoid trade barriers caused by non-compliance with standards, and promote unimpeded trade.

5.2.3. Providing Information Services and Training

Cross-border e-commerce industry associations should build a comprehensive information platform for cross-border e-commerce, aggregating and disseminating real-time updates on domestic and international market dynamics, policy and regulatory changes, and industry trends. This ensures that enterprises receive timely and accurate information, aiding their decision-making processes. At the same time, a series of professional training programs for cross-border e-commerce should be organized to comprehensively enhance the professional skills and overall competencies of enterprise employees, improving their competitiveness and adaptability in the digital trade environment and enabling them to effectively respond to various trade barrier challenges.

5.3. Enterprise Level

5.3.1. Strengthening Technological Investment

Wenzhou's cross-border e-commerce enterprises should actively respond to government calls, participate in the improvement of digital infrastructure, and collaborate with government efforts to optimize and streamline cross-border logistics channels. By building a smooth and efficient logistics network architecture and leveraging an excellent cross-border e-commerce logistics ecosystem, enterprises can drive export efficiency growth, reduce product costs, and accelerate the turnover speed of cross-border transactions. Additionally, enterprises should focus on enhancing technological innovation and market collaboration capabilities, increasing research and development intensity, and boosting investment in scientific research to achieve breakthroughs in technology and significant improvements in production efficiency. This ensures that products not only meet the high standards set by digital trade barriers but also stand out in the international market with superior performance-to-price ratios, gaining a competitive edge.

5.3.2. Diversifying Channels and Optimizing Products

In Wenzhou's cross-border e-commerce sector, small and medium-sized enterprises dominate, commonly facing operational bottlenecks such as significant product homogeneity, incomplete quality assurance systems, weak market risk resistance, and a lack of strategies to quickly respond to market changes. To avoid intense homogeneous competition in mature markets, enterprises should turn their attention to emerging markets, taking the lead in layout and fully leveraging existing advantages. By flexibly adjusting business strategies and accelerating the pace of enterprise transformation and upgrading, enterprises can ensure the steady progress of cross-border e-commerce businesses while actively exploring and practicing diversified development paths. For small enterprises under competitive pressure due to product homogeneity, there is an urgent need to broaden sales channels, focus on product differentiation strategies, and produce customized, unique products tailored to target customer groups. At the same time, enterprises should avoid weakening their core competitiveness due

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to quality shortcomings, strengthen product quality awareness, and commit to producing high-quality goods, thereby standing out in the fierce competition of cross-border e-commerce and avoiding elimination.

5.3.3. Building a Marketing System

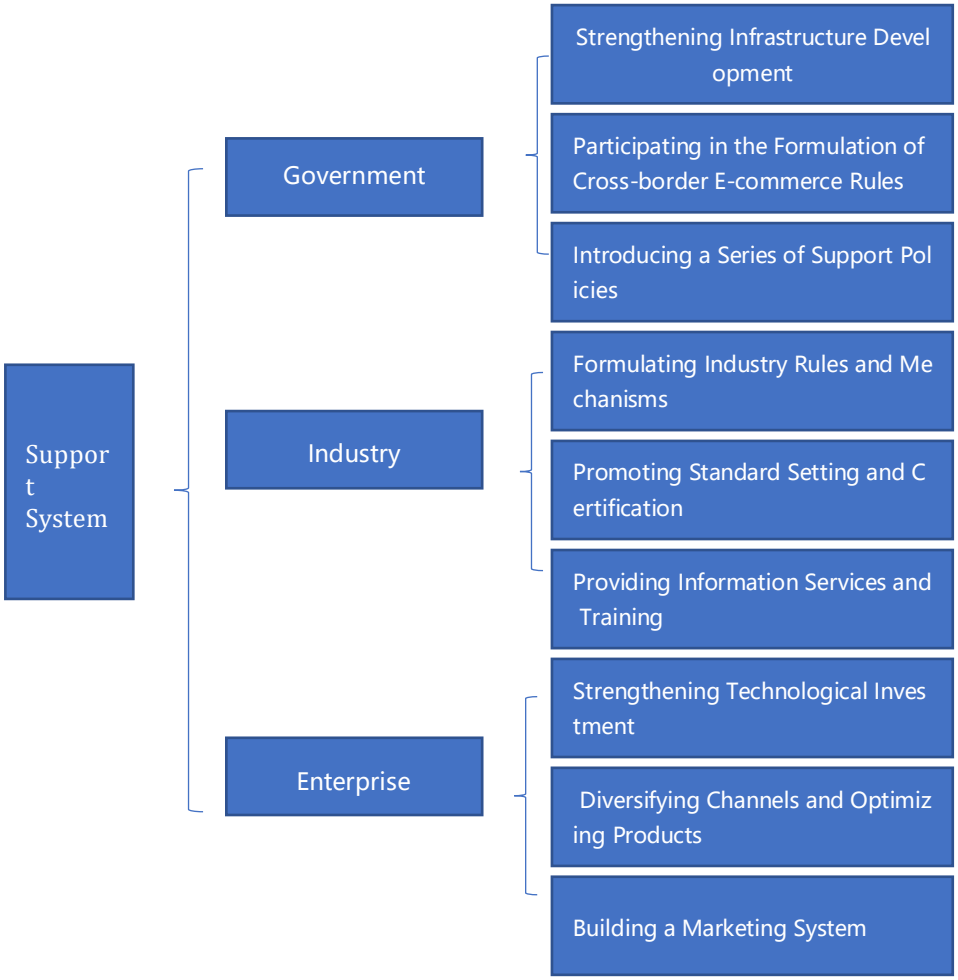

Figure 3 Support system

Wenzhou's cross-border enterprises should deeply analyze the market characteristics of their main export target countries and customize precise and efficient marketing strategies to build a stable and efficient marketing architecture for cross-border e-commerce exports. In this process, enterprises should reinforce brand-oriented marketing concepts, promoting brand value to the public through multiple channels to add extra value to products and solidify quality credibility. At the same time, enterprises should actively inherit and promote the essence of Chinese culture, creating brand products rich in cultural depth to stimulate overseas consumers' interest and resonance with Chinese culture. This will help cross-border e-commerce

enterprises achieve deeper expansion in the global market and broaden their export footprint, accomplishing the dual internationalization of brand and culture.

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References

[1] Meng Xia, Sun Lu, Wang Hao: The Impact of Digital Service Trade Barriers and Heterogeneity of Regulatory Policies on Digital Delivery Service Trade, Asia-Pacific Economic Review, 2020(06), p.42-52+147.

[2] Qi Junyan, Qiang Huajun: Do Restrictions on Digital Service Trade Affect Service Exports?: An Empirical Analysis Based on Digital Service Industries, World Economic Studies, 2021(09), p.37-52+134-135.

[3] Xiao Guang'en, Ran Xiaodong: The "Deficit" in Global Digital Trade Governance and China's Countermeasures - Based on the Perspective of Global Public Goods, Journal of South-Central University for Nationalities (Humanities and Social Sciences Edition), 2022, 42(01), p.139-147+187.

[4] Zhang Xiaheng: Symbiosis or Iteration: Revisiting Cross-border E-commerce and Global Digital Trade, Contemporary Economic Management, 2020, 42(11), p.43-50.

[5] Flavio Calvino, Chiara Criscuolo, Luca Marcolin, Mariagrazia Squicciarini: A Taxonomy of Digital Intensive Sectors, OECD Science, Technology and Industry Working Papers, 2018, No.14.