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How Does the National Big Data Comprehensive Pilot Zone Affect the Technical Complexity of Urban Exports?

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Abstract. Taking "the establishment of the national big data comprehensive pilot zone" as a quasi-experiment, this study uses propensity score matching-difference in difference (PSM-DID) to investigate how the national big data comprehensive pilot zone improves the technical complexity of urban exports and its mechanism, which is based on the data of 280 prefecture cities from 2007 to 2019. The results show that the establishment of national big data comprehensive pilot zone can improve the technical complexity of urban exports. Specifically, it drives regional trade upgrading by increasing technology investment. In addition, its establishment has inhibited the technical output to some degree, and the trade openness negatively regulates the impact of the big data comprehensive pilot zone on the technical complexity of urban exports. Besides, this study not only lays a foundation for empirical research on the national big data policy to promote the high-quality development of regional trade, but also provides a new perspective for studying the transformation of digital economy.

Keywords: Big Data Pilot Policy; Digital Economy; Foreign Trade; PSM-DID.

1. Introduction

Since the reform and opening up, export trade has been the main force to promote national economic development. Due to unfavorable factors such as epidemic spread in recent years, Sino-US trade friction and global supply chain disturbance, the export trade volume has sharply declined in a weak trend as a whole. Meanwhile, the digital economy with data and information as factors of production is profoundly integrated with the real economy, which leads to social reform with a series of revolutionary changes and creative achievements in human production and life. To comprehensively advance the development and application of big data in China and promote industrial upgrading in various fields, a national big data comprehensive pilot zone is established. Up against the continuous high-quality development of foreign trade and the establishment of a new development pattern featuring domestic and international circulation, China's foreign trade is in urgent need of transformation and upgrading. Besides, the new industrial model represented by the digital economy has become the key to stimulating the advantages of international trade competition and driving high-level openness. Therefore, it is of great practical significance to study how the big data comprehensive pilot zone impacts China's foreign trade and its mechanism.

At the early stage of reform and opening up, China took the initiative to utilize the raw materials and labor forces with significant competitive advantages at that time, and integrated into the global supply and value chains, which remained at the low point of the smile curve for a long time in labor divisions of the global industrial chain. In recent years, trade protectionism and technology protectionism have been on the rise, with prominent bottlenecks in vital industries and core technologies. Besides, problems such as resource depletion faced by the manufacturing industry are increasingly serious. Thus, in order to promote high-quality Chinese development from a "world factory" to "a major power with intelligence", the upgrading of Chinese traditional industries to the midstream and upstream of the value chain with higher added value and the protection of enterprises' international competitive advantages have been the central issues.

Nowadays, China's manufacturing industry is in a crucial stage at the upstream of the global value chain with stronger innovation and higher added value. Enhancing independent innovation capability and accelerating high-level scientific and technological self-reliance is the only gateway to breaking through the downstream global value chain. With the in-depth new scientific and technological revolution and industrial transformation, guided by the new development philosophy, the big data comprehensive pilot zone comes into being, which is responsible for fully using the big data and new advantages of the digital economy as well as exploring the new engine of digital trade growth. Since 2015, China has promulgated the *Action Outline for Promoting the Development of Big Data*, after which the Guizhou national big data comprehensive pilot zone (Gui'an New District), Beijing-Tianjin-Hebei and Pearl River Delta big data comprehensive pilot zones, etc. have been successively built, so as to promote deeper integration and higher-quality development of digital economy and real economy, and improve the application of data elements in trade. Hence, taking the data from 280 prefecture cities in China from 2007 to 2019, this paper uses the PSM-DID method to investigate how the big data pilot zone affects the export trade of prefecture cities in China. It is found that big data pilot zones can enhance the expansion and upgrading of regional exports. The mechanism of technology input and the regulation of trade opening make a difference. This study will provide vital theoretical value and practical significance for evaluating the effect of big data policies, so as to reveal the mechanism of big data development in trade promotion.

Based on the existing literature, this paper makes the following marginal contributions: (1) From the research perspective, this paper examines the impact of the national big data comprehensive pilot zone policy on export trade, which provides institutional support for understanding the role of digital development in improving the technical complexity of export. In addition, this paper makes a useful supplement for evaluating its effect. (2) As for research methods and variable selection, this paper using the PSM-DID method takes the establishment of national big data comprehensive pilot zones as an exogenous policy impact, which better alleviates endogenous problems. (3) This paper further discusses the impact mechanism of the national big data pilot zone on the technical complexity of export trade and its regulatory role in trade opening, which is conducive to understanding the relationship between big data and high-quality trade development.

2. Literature Review, Theoretical Analysis and Hypothesis Proposition

2.1. Establishment of Big Data Comprehensive Pilot Zone and Upgrading of Foreign Trade

At present, the establishment of national big data comprehensive pilot zones affects the technical complexity of urban export in many ways. First of all, it can promote digital development and the application of big data, optimize the traditional industrial structure, and drive the transformation and upgrading of traditional manufacturing industries (Li, 2020; He, 2022). In addition, it improves the high-tech and quality of export products, thus enhancing the technical complexity of exports. Secondly, the establishment of national big data comprehensive pilot zones not only promotes the digital economy, but also advances the export trade of agricultural products and the communication industry, which can increase the competitiveness of export products (Yao, 2020). Besides, based on making full use of traditional digital technologies, the national big data comprehensive pilot zone can use high-tech such as the Internet, AI and cloud computing to break the spatiotemporal restrictions on the transmission of information and data, unshackling the traditional "spatiotemporal barriers" during the trade and production, which has obvious spatial spillover effects to improve the technical complexity of export (Yu, 2023; Su, 2023). Hence, the hypothesis H_0 is proposed:

H_0: The establishment of big data comprehensive pilot zones has a positive impact on the technical complexity of exports.

2.2. Technology Input, Technology Output and Foreign Trade Upgrading

The establishment of national big data comprehensive pilot zones enables trade-related industries to invest more resources in technology research and development, thus improving the technical complexity of exports. On the one hand, national big data comprehensive pilot zones integrate a series of innovative technical elements such as high-quality talents and R&D capital, which improves the efficiency of various elements and resource allocation, providing innovative environment, resources and policy support for enterprises and research institutions (Lin, 2022); On the other hand, the investment and innovation activities of regional enterprises and research institutions in technology increase, which improves the innovation efficiency, the product upgrading of export trade, and then the technical complexity of exports (Yan, 2022). Hence, the hypothesis H_{1a} is proposed:

H_{1a}: The establishment of big data comprehensive pilot zones can enhance urban technology investment, thus improving the technical complexity of exports.

Based on the Solow Paradox, it takes time and resources for scientific and technological achievements to be transformed from technology creation into advanced productivity. It undergoes continuous adjustments and improvement to meet actual needs. Emerging technologies, such as big data and Internet+, are characterized by complexity and changeability, which is in the initial stage of development. However, a time lag effect exists from initial application to transformation into advanced productivity. By analyzing the impact of digital development on total factor productivity, we found that the Solow Paradox exists in China (Chen, 2018). With the high penetration rate of high technologies such as the Internet, the investment in digital information technology inhibits technology output (Xie, 2020). Hence, the hypothesis H_{1b} is proposed:

H_{1b}: The establishment of big data comprehensive pilot zones initially inhibits the improvement of technology output.

2.3. Trade Openness, Digital Economy and Foreign Trade Upgrading

With the development of economic globalization, continuous improvement of trade openness is conducive to the high-quality development of China's foreign trade. Trade openness can indirectly accelerate the overall upgrading and advance the development of industrial structure by increasing material capital accumulation, stimulating consumer demand, upgrading technology and promoting institutional reform (Cai, 2017). It is mentioned in the theoretical mechanism that with the improvement of trade openness, domestic importers trade more frequently, which proves the higher degree of foreign technology introduction (Wang, 2023). Under the digital achievements brought by data comprehensive pilot zones, the different trade openness will adjust its effect on export trade. In areas with high export trade, the marginal spillover effect of foreign technology is apparent. In a short time, the technological upgrading resulting from big data comprehensive pilot zones may not promote foreign trade upgrading due to restricted foreign technology. Thus, the hypothesis H_2 is put forth.

H_2: Trade openness will promote foreign trade upgrading and regulate the establishment of big data comprehensive pilot zones.

3. Research Design

3.1. Sample Selection and Data Sources

This paper selects 280 prefecture cities in China from 2007 to 2019 as samples. All the data come from the China Customs Import and Export Statistics Database, the Foreign Trade Database in the Information Network of Development Research Center of the State Council, the CCER Database, the official website of the National Bureau of Statistics and the *China City Statistical Yearbook*.

3.2. Variable Definition

3.2.1. Explained Variables

The explained variable in this paper is the technical complexity of urban exports, which can be used to reflect the technical content and international competitiveness of exports of a country (region). Meanwhile, the technical complexity of urban exports can measure the structure upgrading of foreign trade exports at the city level (Zhou et al., 2019; Sun et al., 2021), which can be used as a representative index to measure the quality of urban export trade. As an important geographical unit in international trade, cities are the top priority in building an international economic cycle. Therefore, the development of China's foreign trade is measured by the upgrading complexity of urban exports. According to the practice of Chao Xiaojing (2022), this paper multiplies the proportion of tertiary industry in the GDP of prefecture cities with the technical complexity of provincial exports, so as to obtain the technical complexity index of urban exports.

3.2.2. Core Explanatory Variables

The explanatory variables of this paper are policy implementation of big data comprehensive pilot zones (*Post*) and zones affected by the policy (*Treat*). The indicators of big data comprehensive pilot zones are composed of DID variables ($Treat_{ct} \times Post_{ct}$), in which the pilot zone affected by the policy (*Treat*) is 1 and the non-pilot zone is 0. Post is a dummy variable in the pilot policy year, which is assigned to 1 in the year of implementation and subsequent periods, and 0 before implementation. The regression coefficient of the cross-multiplication term $Treat \times Post$ is the net effect of the big data comprehensive pilot policy on the technical complexity of urban exports.

3.2.3. Control Variables

In addition to the dummy variables of big data comprehensive pilot zone policy, this paper attempts to control the influence of other factors at the city level on the technical complexity of exports. The control variables are as follows: human capital (HCL) expressed by the average wage of employees; financial development (FIN) expressed by the proportion of deposit and loan balance to GDP; economic development (PerGDP) expressed by the per capita GDP of each city; human capital investment (HUM) expressed by the ratio of education expenditure to fiscal expenditure; marketization (MAR) expressed by the reciprocal of local fiscal expenditure to GDP; urban land resources (AOL) expressed by urban land area; urban financial industry development (FINA) expressed by the number of financial and insurance employees in cities.

3.3. Model Establishment

In this paper, the DID model in Equation 1 is used to identify the influence of digital economy transformation policy on dependent variables:

$$\ln ESF_{ct} = \beta_0 + \beta_1 Treat_{ct} \times Post_{ct} + \beta_2 X_{ct} + \mu_c + \lambda_t + \varepsilon_{ct} \tag{1}$$

subscripts c and t are prefecture cities and years respectively; μ_c and λ_t are the fixed effect of region and year respectively; ε_{ct} is a random error term; X_{ct} is the selected control variable. $\ln ESF$ is an explained variable in the model, which takes the logarithm of the export technical complexity. The core explanatory variable $Treat_{ct} \times Post_{ct}$ is the policy dummy variable of big data comprehensive pilot zones. $Treat_{ct}$ is to assign big data comprehensive pilot zones as 1 and non-pilot zones to 0. $Post_{ct}$ is to assign the current and subsequent periods of policy implementation to 1, 0 for other years.

4. Empirical Results and Analysis

4.1. Descriptive Statistics

Table 1 is the descriptive statistics of the main variables. The average technical complexity of texports (lnESF) is 9.548, the standard deviation is 0.486, the minimum is 8.4489, and the maximum is 10.5573, which shows differences in the technical complexity of exports in various regions. The average of *treat* policy impact variable is 0.2873, which means about 28.73% of regions have implemented the pilot policy.

Table 1. Descriptive Statistics

Variables	Obs	Mean	Std. Dev.	Min	Max
lnESF	3025	9.548	.486	8.4489	10.5573
treat	3025	.2873	.4526	0	1
lnHCL	3025	10.5516	.4187	9.6542	11.4359
FIN	3025	.0001	.0001	.0001	.0003
lnPERgdp	3025	10.4061	.6739	8.8179	11.9395
HUM	3025	.1846	.0419	.0923	.2874
MAR	3025	.1779	.089	.0644	.5721
lnAOL	3025	9.337	.7933	7.3614	11.4078
lnFINA	3025	9.3181	.8324	7.439	11.7543

4.2. Correlation Analysis

To avoid multicollinearity in the model, the correlation between explanatory and control variables is analyzed in this paper. According to Table 2, the Pearson correlation coefficients of each control and explanatory variable do not exceed 0.278 with significant results. Hence, there is no multicollinearity in the model.

Table 2. Correlation Analysis

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) *TP*	1.000							
(2) *lnHCL*	0.278***	1.000						
	(0.000)							
(3) *FIN*	0.140***	0.399***	1.000					
	(0.000)	(0.000)						
(4) *lnPERgdp*	0.148***	0.716***	0.208***	1.000				
	(0.000)	(0.000)	(0.000)					
(5) *HUM*	-0.056***	-0.237***	-0.220***	-0.352***	1.000			
	(0.002)	(0.000)	(0.000)	(0.000)				
(6) *MAR*	0.072***	0.129***	0.239***	-0.407***	-0.164***	1.000		
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)			
(7) *lnAOL*	-0.012	-0.081***	-0.070***	-0.289***	0.047***	0.347***	1.000	
	(0.511)	(0.000)	(0.000)	(0.000)	(0.010)	(0.000)		
(8) *lnFINA*	0.110***	0.363***	0.422***	0.469***	-0.040**	-0.375***	0.049***	1.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.026)	(0.000)	(0.007)	

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

4.3. Baseline Regression Results

To further control the systematic differences among samples and overcome the Self-Selection Bias, this paper uses the PSM-DID method to conduct regression analysis. According to the results in Table 3, column (1) tests the impact of digital economy transformation policy on the technical complexity of urban exports without adding control variables; column (2) adds other control variables affecting the technical complexity of urban exports. The results show that after controlling the urban fixed effect and the year fixed effect, the coefficient of *post*×*year* is positive regardless of whether adding control variables or not. The results tested by the propensity score matching show that the implementation of the digital economy transformation policy will significantly promote the technical complexity of urban exports. Thus, H_0 is supported.

Table 3. PSM-DID Estimation Results

Variables	(1)	(2)	(3)
	lnESF	*lnESF*	*lnESF*
TP	0.0424***	0.0232**	-0.0819**
	(0.00945)	(0.00948)	(0.0314)
lnHCL		-0.0349	0.00811
		(0.0216)	(0.0645)
FIN		488.0***	1,645***
		(101.9)	(490.9)
lnPERgdp		-0.0928***	-0.140**
		(0.0154)	(0.0597)
HUM		-0.356***	0.491
		(0.0927)	(0.457)
MAR		0.227***	0.122
		(0.0794)	(0.248)
lnAOL		-0.0347	-0.180
		(0.0353)	(0.250)
lnFINA		-0.0400***	-0.133***
		(0.0112)	(0.0487)
Constant	9.563***	11.56***	13.60***
	(0.00202)	(0.407)	(2.514)
Observations	2,963	2,963	218
R-squared	0.973	0.976	0.988
City Fe	Yes	Yes	Yes
Year Fe	Yes	Yes	Yes

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

4.4. Robustness Test

4.4.1. Placebo Test

To avoid the influence of missing variables on the benchmark regression results, referring to the practice of Li et al. (2016), this paper replaces the treatment group for the urban placebo test. In the sample data, the same number of cities are randomly selected as the false treatment group, and the other cities are taken as the false control group. Then, the coefficient estimation of enterprises' digital transformation by implementing the pilot policy of big data comprehensive pilot zones with urban placebo is obtained. The above experimental process is repeated 500 times, which gains 500 regression coefficients and their corresponding P values. Figure 1 reports the kernel density of estimated coefficients of 500 virtual treatment groups. The regression coefficients are mainly distributed around 0 with normal distribution, which further proves the robustness of benchmark regression results.

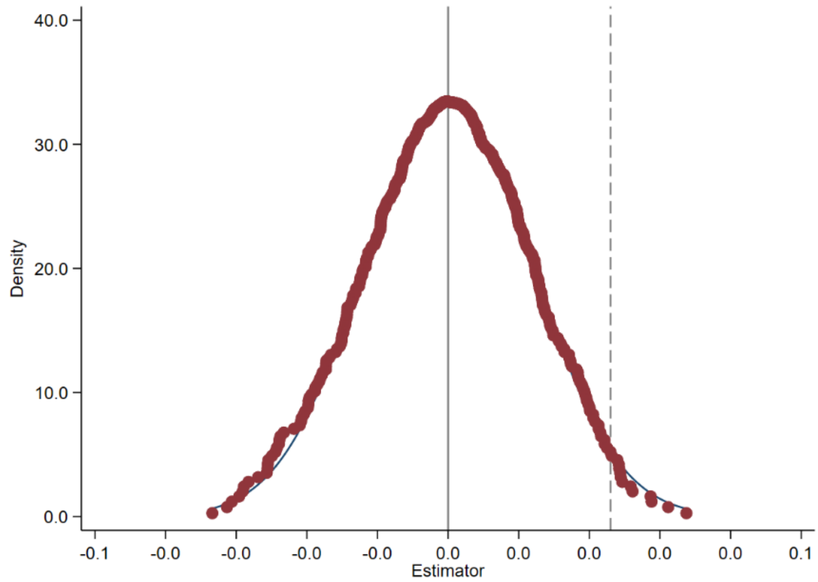

Figure 1. Placebo Test

4.4.2. Elimination of Special Samples

There may be significant heterogeneity in economic, social and cultural aspects in minority areas, which may affect the research results. Column (3) of Table 3 shows the results after excluding samples from the Inner Mongolia Autonomous Region, Ningxia Hui Autonomous Region, Xinjiang Uygur Autonomous Region and Guangxi Zhuang Autonomous Region. According to the results, the elimination of ethnic minority areas has no fundamental impact on the regression results.

4.5. Analysis of Internal Mechanism

4.5.1. Impact Mechanisms

According to the previous analysis, the policy of big data comprehensive pilot zones may affect export competitiveness through technology input and technology output. Based on the existing research, the proportion of government expenditure on science and technology to regional GDP is used to measure capital investment. The larger the value, the higher the level of regional technology investment. Total factor productivity is used to measure technical output, which reflects the overall efficiency of transforming the input combination of production factors into output.

From column (1) of Table 4, the policy of big data comprehensive pilot zones has significantly increased technology investment, which can drive regional technology upgrading. From columns (3) and (4) of Table 4, compared with the regions with high technology input, the big data policy can greatly promote the technical complexity of exports in the regions with low technology input. The possible explanation for this difference is that cities with high technology input have relatively abundant human capital and a relatively high level of economic development. The policy implementation of the big data comprehensive pilot zone is more conducive to low-tech investment cities to improve their technical complexity of exports. Hence, the establishment of big data comprehensive pilot zones can enhance urban technical investment, thus improving the technical complexity of exports. Hence, H_{1a} is proved.

From column (2) of Table 4, the policy of big data comprehensive pilot zones has significantly inhibited the total factor productivity, which may be due to the time lag effect from technology input to technology output. Besides, it takes time for data elements to be developed and utilized to promote economic development, resulting in no improvement in technology output in a short time. From columns (5) and (6) of Table 3, compared with the regions with low technology output, the big data policy plays a more vital role in promoting the upgrading of export trade in regions with high technology output. This difference may be because the input of data elements can quickly affect the real economy and promote high-quality economic development in areas with high resource allocation efficiency, strong resource absorption and transformation ability. Hence, H_{1b} is supported.

Table 4. Influence Mechanism

	(1)	(2)	(3)	(4)	(5)	(6)
Variables	m1	m2	High technical input	Low technology input	High total factor productivity	Low total factor productivity
	RD	*TFP*	*lnESF*	*lnESF*	*lnESF*	*lnESF*
TP	0.000379*	-0.142***	0.0167	0.106***	0.0499***	-0.00192
	(0.000212)	(0.0309)	(0.0113)	(0.0240)	(0.0160)	(0.0114)
Constant	-0.0367***	-5.017***	8.911***	-0.0342	11.46***	11.87***
	(0.00907)	(1.329)	(0.488)	(0.207)	(1.327)	(0.481)
Observations	2,800	2,963	1,344	1,439	1,397	1,497
R-squared	0.541	0.886	0.979	0.791	0.979	0.985
Control variables or not	Yes	Yes	Yes	Yes	Yes	Yes
Fixed urban effect or not	Yes	Yes	Yes	Yes	Yes	Yes
Fixed year effect or not	Yes	Yes	Yes	Yes	Yes	Yes

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

4.5.2. Regulatory Mechanisms

Due to different trade openness in various regions, there are huge differences in resource allocation and foreign financing, which will lead to different reactions when the technical complexity of urban exports is impacted by pilot policies. Based on the model (1), two new models (2) and (3) are established to analyze the moderating effect of trade openness:

$$\ln ESF_{ct} = \beta_0 + \beta_1 Treat_{ct} \times Post_{ct} + \beta_2 Freedom_{ct} + \beta_3 X_{ct} + \mu_c + \lambda_t + \varepsilon_{ct} \qquad (2)$$

$$\ln ESF_{ct} = \beta_0 + \beta_1 TP_{ct} + \beta_2 Freedom_{ct} + \beta_3 Treat_{ct} \times Post_{ct} \times Freedom_{ct} + \beta_4 X_{ct} + \mu_c + \lambda_t + \varepsilon_{ct} \qquad (3)$$

$Freedom_{ct}$ indicates the degree of trade openness, which is measured by taking a logarithm of the amount of foreign capital used in the current year. The estimation of the adjustment effect model is as follows. Firstly, add a new variable $Freedom_{ct}$ based on model (1), estimate the coefficients beta1 and beta2 in the model (2), and then verify the influence of digital transformation policy on the technical complexity of urban exports under the same urban trade openness and test the influence of urban trade openness on the technical complexity of urban exports. Secondly, add the interactive item between digital transformation policy and urban trade openness based on model (2), estimate the coefficient beta3 of the interactive item $TP_{ct} \times Freedom_{ct}$ in the model (3), and then observe the symbolic and statistical significance of beta3 to understand the moderating effect of trade openness on the role of digital economic transformation policy in promoting technical complexity of urban exports.

Table 5. Regulatory Mechanism

VARIABLES	(1) *lnESF*	(2) *lnESF*
TP	0.0368***	0.158***
	(0.00922)	(0.0292)
freedom	0.0287***	0.0344***
	(0.00213)	(0.00248)
TP × *freedom*		-0.0122***
		(0.00278)
lnHCL	-0.0453**	-0.0516**
	(0.0206)	(0.0205)
FIN	837.1***	773.3***
	(99.68)	(100.4)
lnPERgdp	-0.119***	-0.124***
	(0.0151)	(0.0151)
HUM	-0.282***	-0.325***
	(0.0883)	(0.0885)
MAR	0.246***	0.195**
	(0.0763)	(0.0769)
lnAOL	-0.0398	-0.0368
	(0.0333)	(0.0332)
lnFINA	-0.0437***	-0.0427***
	(0.0106)	(0.0106)
Constant	11.68***	11.73***
	(0.387)	(0.386)
Observations	2,919	2,919
R-squared	0.979	0.979
City Fe	Yes	Yes
Year Fe	Yes	Yes

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

According to the coefficients in column (1) of Table 5, the establishment of big data comprehensive pilot zones and the increase of trade openness can significantly promote the complexity of urban export trade. However, the coefficient of the interaction item between TP and freedom in column (2) of Table 5 is significantly negative, which indicates that with the increase of trade openness, the establishment of big data comprehensive pilot zones has a less obvious improvement effect on the export competitiveness of urban products brought by the digital economy. This may be due to the apparent spillover effect of foreign technology in areas with a high trade openness, and the technological upgrading brought by the big data comprehensive pilot zone in a short time cannot replace foreign technology for the time being.

5. Conclusion and Suggestions

1. The establishment of big data comprehensive pilot zones can improve the technical complexity of urban exports, which means that the digital economy can promote trade upgrading.

2. The impact mechanism focuses on technology input and technology output. This paper finds that the establishment of big data comprehensive pilot zones can enhance the urban technology input, thus improving the technical complexity of exports. From the aspect of technology output, the big data comprehensive pilot zones initially inhibit the improvement of technology output. Based on the Solow Paradox, this may be due to the time lag effect from technology input to technology output. However, on the whole, the technical complexity of exports is still positively affected by big data comprehensive pilot zones, which may be because the positive effect of technology input is greater than the negative effect of technology output.

3. The regulatory mechanism adopts the influence of trade openness. This paper finds that with the increase in trade openness, the improvement of the digital economy on the complexity of urban export trade is becoming less obvious. This may be due to the apparent spillover effect of foreign technology in areas with a high trade openness. Besides, the technological upgrading brought by the big data comprehensive pilot zone in a short time cannot replace foreign technology for the time being.

Based on the research conclusions, three policy suggestions are put forward:

(1) Pay more attention to the digital economy transformation policy and accelerate the application and improvement of big data technology in foreign trade transactions. The advantages of digitalization should be fully used to reduce production costs and improve production efficiency, promoting the innovation and upgrading of export products and technologies.

(2) Emphasis should be laid on the promotion of technology upgrading to the development of international trade. The efficiency of resource transformation should be promoted from technology input to technology output by improving its position in the global value chain through continuous industrial upgrading. We should also promote the digitalization, facilitation and expansion of trade, injecting new impetus into China's economic development.

(3) Improve the cooperative development of big data comprehensive pilot zones among different cities. The leading role of pilot cities should be fully utilized to better bridge the "digital divide" between different regions. Cities with different trade openness should complement each other in technology, realize the integration of digital resources among different regions, and build a new pattern of big data technology application and development in foreign trade.

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