International Journal of Economics and Finance; Vol. 15, No. 8; 2023
ISSN 1916-971X E-ISSN 1916-9728
Published by Canadian Center of Science and Education

The Role and Impact of Institutional Distance on China's Export Trade with Countries in Africa and Asia

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Received: June 20, 2023 Accepted: July 18, 2023 Online Published: July 25, 2023

doi:10.5539/ijef.v15n8p96 URL: https://doi.org/10.5539/ijef.v15n8p96

Abstract

The concept of institutional distance has been gaining prominence in the context of international trade. Recent research has indicated that the impact of institutional distance on exports can be either positive or negative, and is determined by the interplay between substitution and complementary effects arising from trade costs and preferences. The present study investigates the significance of institutional distance in the trade partnership between China and African and Asian countries. In this study, we utilize export trade data at the product-level between China and 103 trading partners, of which 48 are located in Africa and Asia, to estimate the extended gravity model. To investigate the potential impact of institutional distance, we employ a nonlinear gravity equation. The time frame for our analysis spans from 2006 to 2020. Our analysis reveals that the presence of institutional distance poses a significant obstacle to China's export activities, primarily due to the associated trade costs. China's export hindered by institutional distance. In addition, the impact of institutional distance on China's exports is subject to variation based on differentiated products and the geographical location of trading partners.

Keywords: Gravity model, institutional distance, China exports, African and Asian countries

1. Introduction

Existing research on the factors that affect international trade goes beyond the costs that can be seen, such as tariffs and transportation costs, and looks at the costs that can't be seen (Deardorff, 2014; Obstfeld & Rogoff, 2000), of which asymmetric knowledge and uncertainty in transactions are frequently linked (de Groot et al., 2004). Institutional quality affects the business setting. In addition, the institutional difference has to do with how well the institutions of the two countries match up. As technology has improved, the significance of observable costs has diminished. In recent scholarly investigations, there has been a notable focus on the significance of unobservable expenses, particularly those associated with institutional distance (Linders et al., 2005). But there isn't a lot of research that looks at the effects of institutional distance on different types of foreign trade at the same time, and there's no agreement among studies about how important institutional distance is for trade.

The main goal of this study is to look at China's trade flow in a broad sense, with a focus on the African and Asian countries, which haven't been looked at much in the past. We haven't been able to find much work here. In particular, institutional quality is hurting this route in a way that hasn't been studied in a formal way yet. In this study, we require to find out if both the African and Asian trade routes are good for China and to what extent negative stereotypes in partner countries threaten both routes and could cause problems for China's trade flow. Institutional distance mechanisms that hurt trade are becoming more and more important to figure out in the context of China's relationship with African, Asian and other regional and organizational arrangements. There are so many structural differences that it is important to put them in a broader perspective.

We chose the trade route where we require to look at the factors that make it easier and the ones that make it harder, focused on the institutional distance to export trade flow between China and its partners in Africa and Asia. The study could be seen as an addition to what has already been written about political ties or risks in other countries and places.

We use the gravity model, invented by (Anderson & van Wincoop, 2003), to examine how sensitive China's

export trade is to institutional distance with its trading partners in Asia and Africa. It takes into consideration the heterogeneity across continents. We also talk about how the institutional distance in China's trade is impacted by the continents of Africa and Asia. we investigate the nonlinear definition of the gravity equation and utilize Poisson regression to account for the serial correlation of export trade. Our aim is to obtain more accurate coefficient estimators based on data from 103 trading partners, 46 of which are located in Africa and Asia, over the time frame of 2006-2020.

2. Relevant Literature

The six characteristics of governance quality defined by (Kaufmann, Kraay, & Mastruzzi's, 2010) or the Governance Environment Index (GEI) created by Li and Filer in 2007 are used to measure institutional distance. (de Groot et al., 2004) draw that the concluconcludeonal distance has a detrimental impact on bilateral trade flows using the earlier measure of institutional distance. Here are several explanations that could apply. First, similar institutional quality levels lead to trusted relationships and known business practices, which lower search and adjustment costs (de Groot et al., 2004; Mendonça et al., 2014; Linders et al., 2005). Consequently, the presence of homogenous institutions could potentially enhance compliance with agreements and transaction procedures for parties involved, thereby facilitating trade (Miura & Takechi, 2014). Second, institutions mirror the overall commercial and contractual environment. Third, a price markup is imposed on traded products due to institutional instability (de Groot et al., 2004; Wu, Li, & Samsell, 2012). However, the Governance Environment Index could not reliably confirm the hypothesis that more or less commerce occurs between countries with comparable or different institutional setups.

The literature discusses two ways in which institutional distance affects trade. One potential benefit of institutional homogeneity is the development of a shared understanding of institutional structures among nations. This can foster compatibility between institutions and contribute to increased trust and decreased uncertainty in bilateral interactions (de Groot et al., 2004), lowering the cost of adjustment and transaction (Mendonça et al., 2014). On the other hand, represent the business and contractual settings. Since homogenous institutions might provide improved contract enforcement and transaction procedures, trade would be facilitated (Miura & Takechi, 2014).

Institutional distance, which is regarded as an intangible trade barrier, is often shown in the research to be one of the most significant factors influencing bilateral trade flows. However, owing to the diverse methods, there is no unified viewpoint on the institutional distance on international trade. Additionally, there aren't many studies that look at how institutional distance affects international trade and those that need to be expanded.

Therefore, substitution effects or complementing effects via trade costs determine the overall impact of institutional distance on bilateral trade. There is more room for debate as a result. China now has one of the largest economies and exports in the world. The impact of institutional distance on China's export flows has come under increased scrutiny. Furthermore, while dealing with structural changes in the global value chain, it is of utmost importance to look at how institutional distance affects China's exports. In light of this, this research contributes to the limited body of literature regarding the influence of institutional distance on China's exports through the utilization of product-level data and the PPML methodology for nonlinear equations. Beta coefficients are utilized as a means of quantifying the impact of institutional distance on China's export activities. The present study contributes to the existing literature in the field and enhances the understanding of the role of institutional distance in China's export trade with African and Asian countries.

3. The Theoretical Framework

3.1 Theoretical Model

Since (Tinbergen, 1962), the gravity equation has been extensively used and expanded in global commerce. Institutional distance between trading partners may have an impact on trade flows since observable variables cannot fully explain trade flow (Deardorff, 2014; Guo, 2004; Linders et al., 2005). As a result, we add institutional distance to (Anderson & van Wincoop, 2003) gravity equation.

The trade flow from country i to country j, represented by T_{ij}, is proportional to the product of the two countries GDPs, denoted by Y_i and Y_j and inversely proportional to their distance, D_{ij}, which essentially depicts trade barriers. Let ij represent a stochastic error that deviates from the theory.

$$T_{ij=\alpha_0} Y_i^{\alpha^1} Y_j^{\alpha^2} D_{ij}^{\alpha^3} m_{ij} \tag{1}$$

Typically, within the theoretical context of the gravity equation, ij is considered to be statistically independent of the regressors, and $E(T_{ij} \mid Y_i, Y_j, D_{ij}) = 1$, resulting in:

$$E(T_{ij} \mid Y_i, Y_j, D_{ij}) = \alpha_0 Y_i^{\alpha^1} Y_j^{\alpha^2} D_{ij}^{\alpha^3} \quad (2)$$

3.2 Measuring Institutional Distance

The concept of institutional distance refers to the extent to which the quality of institutions in one country is comparable to that in another country. The institutional distance metric utilized in this study is derived from the scores obtained from the six dimensions of governance quality as proposed by (Kaufmann, Kraay, & Mastruzzi's, 2010) The measurement of these dimensions is conducted using the Euclidean distance formula, as represented by Eq. (3) and include voice and accountability, political stability and the absence of terrorism, government effectiveness, regulatory quality, the rule of law, and control of corruption. The Worldwide Governance Indicators online database of the World Bank provides a country's ratings on each of the six elements of the quality of governance identified by Kaufmann et al.

$$IND_{ij} = \sqrt{\sum_{k=1}^{6} (I_{kj} - I_{ki})^2} \quad (3)$$

where I_{ki} and k_{ij} represent country i's and country j's scores on Kaufmann et al.'s kth dimension, respectively.

4. Econometric Model and Estimation Methods

Our estimate technique adheres to (Anderson & van Wincoop, 2003) extended gravity model framework and employs the PPML method suggested by (Silva & Tenreyro, 2006) and shown satisfactorily by (Silva & Tenreyro, 2010). Based on the gravity model, exports of a good k from country i to country j in the year t(EX_{ijkt}) are favorably related to the economic levels of the countries (Y_{it} *and* Y_{jt}). Still, they decrease with the geographical distance between trading partners i and j (DST_{ij}). Given the rising relevance of institutional distance's impacts on exports, as demonstrated by research, we include the institutional distance between trade partners i and j in the year t ($INDijt$). Furthermore, other variables that may have an impact on exports are taken into account. Instead of employing a linear regression model by taking the natural logarithms of the variables on both sides, we utilize a nonlinear model with a Poisson distribution. The PPML technique involves accurately specifying the conditional mean function and subsequently maximizing the Poisson log-likelihood function. Initially, we establish a nonlinear conditional mean function denoted as equation (4).

$$E(EX_{ijkt} \mid IND_{ijt}, Z_{ijt}, m_{ijt}) = \exp(\alpha_0 + \alpha_1 IND_{ijt} + \beta' Z_{ijt} + m_{ijkt}) \quad (4)$$

Where m_{ijkt} is a country-product-specific idiosyncratic error occurring in the year t. Furthermore, we standardize the error term m_{ijkt} by considering $E[exp(m_{ijt})|IND_{ijt}, Z_{ijt}] = 1$. The conditional mean function of EX_{ijkt}on explanatory variables can be expressed as follows by repeatedly applying the law of conditional expectation.

$$\pi = E(EX_{ijkt} \mid IND_{ijt}, Z_{ijt}) = exp(\alpha_0 + \alpha_1 IND_{ijt} + \beta' Z_{ijt}) \quad (5)$$

The coefficients in equation (5) and the beta coefficients are estimated using the Poisson Pseudo Maximum Likelihood (PPML) method. The estimation is aggregated based on country-level products. Hence, it exhibits resistance to serial correlations. The PPML method aims to maximize the log-likelihood (LL) function (6), as depicted below.

$$LL = \sum_j \sum_k \sum_t \left(EX_{ijkt}\, log\left[exp\left(\alpha_0 + \alpha_1 IND_{ijt} + \beta' Z_{ijt}\right)\right] - exp(\alpha_0 + \alpha_1 IND_{ijt} + \beta' Z_{ijt}\right) \quad (6)$$

The utilization of this approach has the potential to circumvent the issue of incongruous estimations that may arise due to the existence of heteroskedasticity in conjunction with the log-linearization of the gravity model and the conventional ordinary least squares estimation technique, as demonstrated by (Silva & Tenreyro, 2006). Additionally, it resolves the issue of incongruity in the log-linearization model caused by a trade flow value of zero. According to Gourieroux et al. (1984), If the conditional mean is correctly specified, the coefficient estimators demonstrate consistency within the Poisson distribution, which is a member of the linear exponential family. Moreover, the PPML technique is effectively utilized in Stata and offers a convenient approach for empirical researchers.

The estimates of the coefficients provide an indication of the direction of the causal effects. However, they fail to provide accurate quantitative data on the degree to which changes in institutional proximity result in alterations in exports. In the realm of nonlinear models, the determination of the partial effect involves the calculation of the partial derivative of exports with regard to a particular variable. This methodology allows for the determination of the exact quantitative effect on the dependent variable when an explanatory variable experiences a unitary

alteration. The variable of institutional distance exhibits a range of 0.739 to 6.279 (0.739 – 5.279) in the Chinese sample, with a mean of 3.024 (2.457) and a standard deviation of 1.449 (1.026). Hence, elucidating the impact of a one-unit increase in institutional distance on export is not readily apparent. Hence, the beta coefficients are computed and the quantitative contributions of the primary variable, institutional distance, are compared to the variations in China's exports. The beta coefficient pertaining to variable z denotes the extent to which an increase in said variable results in a corresponding increase in exports, as determined by the product of the relative standard deviation of variable z and the standard deviation of exports. The statement pertains to calculating the effect of a one-unit increase in the standard deviation of z on the corresponding increase in standard deviations in exports. Equation (7) defines the beta coefficient for variable z.

$$B_z = \frac{\eth EX}{\eth z} . \frac{\sigma z}{\sigma EX} \tag{7}$$

The aforementioned expression pertains to the partial derivative of exports with respect to the variable z, denoted as $\partial EX\, \partial z$. The symbols σz and σEX denote the standard deviations of the variables z and exports, respectively.

5. Data and Estimation Results

5.1 Data Description

The dataset encompasses 103 countries and spans the period from 2006 to 2020. The countries considered for this study are presented in Table 1. The export data are categorized according to 3-digit SITC Rev.3 codes and were sourced from the United Nations (UN) Comtrade Statistics Database. (Pettersson & Johansson, 2013) methodology was employed to utilize the reported exports for China (EX). The gross domestic production per capita (GDPC) and population (Popu) data were sourced from the World Development Indicators online database. The Centre d'Etudes Prospectives et d'Informations Internationales (CEPII) database has furnished information regarding the geographical distance between capital cities (DST) and the landlocked or non-landlocked status of the respective country (Land). The Heritage Foundation monitored the Economic Freedom Scores (EFS) through a comprehensive assessment of ten indices. Countries with higher indices tend to have more favorable economic environments. The Worldwide Governance Indicators online database was utilized to procure the voice and accountability (VAC), political stability and absence of violence (PSA), government effectiveness (GEF), regulatory quality (REQ), the rule of law (ROL), and control of corruption (COC) data. The indices were estimated to range from 2.5 to 2.5, with a positive correlation between higher estimates and more robust performance in relation to a specific index. Table 1 presents a comprehensive overview of the statistical summary of the variables.

Table 1. Statistical description of variables

Variable	Obs	Mean	Std.Dev	Min	Max
All countries					
EX	145,137	1.730e+08	9.010e+08	1	2.390e+10
lnEX	145,137	16.02	2.897	0	25.01
IND	145,137	3.024	1.449	0.739	6.279
VAC	145,137	0.197	0.969	-1.908	1.821
PSA	145,137	-0.0441	0.979	-3.281	1.621
GEF	145,137	0.375	0.959	-1.829	2.438
REQ	145,137	0.395	0.946	-2.246	2.262
ROL	145,137	0.263	1.024	-2.278	2.121
COC	145,137	0.251	1.073	-1.678	2.473
Ln DST	145,137	8.967	0.471	6.703	9.724
Ln POPU	145,137	16.67	1.586	12.78	21.17
Ln EFS	145,137	4.239	0.171	3.163	4.523
Ln GDPC	145,137	10.22	0.943	3.152	11.23
land	145,137	0.167	0.381	0	1
Africa and Asia					
EX	56,392	1.170e+08	5.348e + 08	2876	1.260e+10
lnEX	56,392	15.96	3.846	7.962	27.08
IND	56,392	2.457	1.026	0.739	5.279
VAC	56,392	0.221	0.971	-1.917	1.891

PSA	56,392	-0.0392	0.901	-3.191	1.641
GEF	56,392	0.401	0.976	-1.919	2.448
REQ	56,392	0.391	0.952	-2.246	2.272
ROL	56,392	0.292	1.029	-2.278	2.121
COC	56,392	0.279	1.087	-1.768	2.481
Ln DST	56,392	8.925	0.518	6.872	9.876
Ln POPU	56,392	16.72	1.551	12.68	21.09
Ln EFS	56,392	4.138	0.163	3.083	4.592
Ln GDPC	56,212	8.809	1.543	2.869	11.73
land	56,392	0.170	0.376	0	1

5.2 Empirical Results

The present discourse showcases the coefficient estimates of nonlinear models, accompanied by robust standard errors clustered at the country-commodity level. A Chow test was conducted to examine the statistical differences in coefficients between the countries of Africa and Asia and all countries. The findings on institutional distance's impact on China's exports are presented in Table 2. The statistical analysis reveals a strong correlation between the natural logarithm of per capita GDP (lnGDPC) and the natural logarithm of the geographical distance between capital cities (lnDST), thus confirming the validity of the conventional gravity equation. Certain residual variables, such as the scores for Economic freedom and the landlocked status of trading partners, exhibit statistically significant effects on the flow of Export trade. However, these variables do not constitute our primary area of interest. Subsequently, our attention is directed towards the empirical findings pertaining to the primary variables of interest, specifically IND.

Our study centres on the impact of the composite measure of institutional distance between China and its trading partners on China's exports to said countries and regions. Table 2 displays noteworthy findings regarding the impact of institutional distance on China's export trade with Africa and Asia. Specifically, the observed coefficients are statistically significant and negative, indicating that institutional distance has a detrimental effect on China's export trade flow with these regions. One plausible explanation is that greater institutional distance may result in increased levels of uncertainty and transaction costs, thereby impeding the export trade activities between China and its trading counterparts. The statistical significance and negativity of the coefficients pertaining to institutional distance are observed across all countries, per the findings presented in Table 2. Our current observations show that institutional distance significantly and adversely impacts China's export trade flows.

Moreover, we are primarily interested in examining how institutional distance affects the composition of China's export trade. The statistical evaluation of Table 2, which include columns for Africa and Asia as well as all countries, reveals that the coefficients of institutional distance are negative and statistically significant. This indicates that an increase in institutional distance between China and its trading partners results in a decline in China's exports. This relationship holds regardless of whether export flow is used as the dependent variable. The hindrance of export trade flows may be attributed to the significant institutional distance that poses challenges and complexities in trader interactions, leading to asymmetric information and increased costs and uncertainty in international trade. The presence of substantial institutional distance implies that the institutional quality levels of the trading partners to whom Chinese firms export are vastly dissimilar to those of China. This discrepancy is linked to increased adjustment costs, which ultimately hinder firms' efficient functioning in their trade partners' countries.

Table 2. Institutional distance's effect on Chinese exports

Variable	Africa and Asia	All countries
IND	-0.238***	-0.317***
	(0.041)	(0.024)
Ln GDPC	0.226**	0.192**
	(0.096)	(0.094)
Ln DST	-0.240***	-0.177***
	(0.269)	(0.254)
Ln POPU	0.879***	0.903***
	(0.096)	(0.098)
land	-0.968***	-1.162***
	(0.258)	(0.298)
Ln EFS	5.635**	7.428**
	(2.571)	(2.909)
VAC	-0.608***	-0.793***
	(0.133)	(0.173)
PSA	0.302**	0.397***
	(0.142)	(0.139)
GEF	0.041	0.172
	(0.576)	(0.498)
REQ	0.765*	0.430
	(0.459)	(0.406)
ROL	-0.268	-0.457
	(0.414)	(0.435)
COC	-0.160	-0.268
	(0.446)	(0.439)
Constant	25.280***	8.498***
	(1.637)	(1.062)
Year FE	yes	yes
Wald_p	0.000	0.000
N	56,392	145,137
Pseudo_r2	0.5070	0.6383

Note. 1) The robust standard errors are presented in parentheses and are grouped by country-commodity level.

2) Significance levels of 1%, 5%, and 10% are indicated by ***, **, and *, respectively.

The appendix A provides the coefficient estimates and statistical significance of the impact of institutional distance on China's exports. The present study investigates the beta coefficients and quantitative contributions of institutional distance to the export performance. A rise of one standard deviation in institutional distance results in a decline of 5.86% and 3.36% of their respective standard deviations in China's exports to Africa, Asia, and all countries.

Table 3. Institutional distance's effects on China's exports of distinct products

	Primary		Manufactured		Labor		Capital	
Variable	Africa and Asia	All countries	Africa and Asia	All countries	Africa and Asia	All countries	Africa and Asia	All countries
IND	-0.138	0.101	-0.373***	-0.350***	-0.294**	-0.390***	-0.427***	-0.319**
	(0.162)	(0.183)	(0.117)	(0.115)	(0.140)	(0.106)	(0.157	(0.138
Ln GDPC	0.098	-0.014	0.234***	-0.013	0.309***	0.046	0.166	0.055
	(0.117)	(0.074)	(0.083)	(0.036)	(0.105)	(0.047)	(0.116)	(0.042)
Ln DST	-0.844***	-0.896***	-0.208	-0.739***	-0.145	-0.675***	-0.260	-0.779***
	(0.296)	(0.161)	(0.242)	(0.138)	(0.268)	(0.085)	(0.356)	(0.162)
Ln POPU	0.934***	0.834***	0.876***	0.828***	0.859***	0.849***	0.896***	0.816***
	(0.120)	(0.092	(0.083)	(0.059)	(0.098)	(0.068)	(0.122)	(0.067)
land	1.812***	-1.677***	-0.978***	-0.625**	-0.981***	-0.007	-0.957***	-1.221***
	(0.350)	(0.466)	(0.236)	(0.292)	(0.315)	(0.378)	(0.332)	(0.251)

Ln EFS	3.813**	4.022**	5.738**	4.606***	4.937**	4.604***	6.271*	4.665***
	(1.827)	(1.884)	(2.348)	(1.177)	(2.342)	(1.250)	(3.403)	(1.378)
VAC	0.719***	-0.147	-0.599***	-0.229	-0.603***	-0.227*	-0.592***	-0.230
	(0.195)	(0.283)	(0.127)	(0.172)	(0.156)	(0.118)	(0.191)	(0.204)
PSA	0.617***	0.379**	0.280**	0.312**	0.344**	0.130	0.223	0.417***
	(0.212	(0.168)	(0.125)	(0.123)	(0.161)	(0.211)	(0.179)	(0.125)
GEF	0.440	1.596***	0.020	1.851***	0.120	1.850***	-0.026	1.863***
	(0.524)	(0.396)	(0.545)	(0.346)	(0.478)	(0.289)	(0.791)	(0.411)
REQ	1.084***	0.123	0.756*	0.401	0.651	0.461*	0.854	0.359
	(0.419)	(0.502)	(0.413)	(0.298)	(0.447)	(0.272)	(0.625)	(0.330)
ROL	-0.929	-1.343***	-0.246	-1.347***	-0.263	-1.292***	-0.214	-1.351**
	(0.582)	(0.494)	(0.362)	(0.486)	(0.447)	(0.376)	(0.516)	(0.553)
COC	-0.045	-0.197	-0.163	-0.370	-0.265	-0.161	-0.099	-0.531
	(0.547)	(0.405)	(0.392)	(0.308)	(0.442)	(0.225)	(0.548)	(0.395)
Constant	-11.783	-4.402	-17.694*	-5.765	-15.536	-8.004	-19.014	-4.461
	(10.522)	(8.477)	(10.722)	(5.379)	(11.386)	(6.151)	(15.799)	(6.306)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Wald_p	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
N	54,902	142,881	54,902	142,881	54,902	142,881	54,902	142,881
Pseudo_r2	0.6247	0.6920	0.6490	0.7537	0.6487	0.8179	0.6920	0.8139

Note. 1) The robust standard errors are presented in parentheses and are grouped by country-commodity level.

2) Significance levels of 1%, 5%, and 10% are indicated by ***, **, and *, respectively.

The research results indicate that the exports of China experience an adverse impact due to the institutional distance. Furthermore, it has been observed that institutional factors have a detrimental impact on the export performance of China, Africa, and Asia. Additionally, when the institutional distance is analyzed in a decomposed manner, it is found that institutional factors have a negative effect on the exports of China and all other countries. The study aims to investigate the potential impact of institutional distance on product processing levels. To achieve this, the exports of China are analyzed, and the exported goods are classified into primary and manufactured commodities. This approach enables a separate examination of the effects of institutional distance on the two categories.

The primary columns of Table 3 present the findings pertaining to Africa, Asia, and all countries indicate that the IND coefficients in regressions concerning China's primary exports of goods are not statistically significant. This suggests that the institutional distance measures, whether composite or decomposed, do not significantly impact China's primary goods exports. This phenomenon may be attributed to the relatively lower proportion of primary commodities in China's export portfolio. The findings pertaining to the average results of manufactured goods in China are presented in Columns of African and Asian countries and all countries in Table 3. The results indicate the assumed coefficients of IND exhibit a negative and statistically significant relationship in both regression analyses conducted in China. Regarding the quantitative impact of institutional distance on exports, it is demonstrated in Appendix B that a one standard deviation increase in institutional distance results in a respective decrease of 6.93% and 6.32% in the standard deviation of China's exports.

The findings suggest that there is a negative correlation between the institutional distance of China and its trading partners and the export of manufactured goods from China. One plausible interpretation is that the varying factor intensity of China's manufactured exports is attributable to its comparative advantage in labor-intensive products, which stems from its factor endowment. This perspective is supported by (Shafaeddin, 2004). In order to bolster the findings, a comprehensive analysis of the impact of institutional distance on the categorization of manufactured products is warranted.

The results of the study suggest that there is a significant negative relationship between institutional distance and the export of labor-intensive and capital-intensive goods from China to various countries in Africa, Asia, and the specific countries mentioned in Table 3. The study presents the estimated coefficients of institutional distance for China's exports of labor-intensive and capital-intensive goods as (-0.294/-0.427) and (-0.390/-0.319) respectively. The beta coefficients provided in Appendix B demonstrate that institutional distance can explain 8.36% and 7.98% of the variations in labor-intensive and capital-intensive exports of China, respectively. Additionally, it is found that institutional distance accounts for 7.15% and 5.66% of the fluctuations in labor-intensive and capital-intensive exports, respectively. This phenomenon can be attributed to the fact that a substantial portion of

China's manufactured goods are labor-intensive, catering to the fundamental production and living needs of its trading partners.

Table 4. Institutional distance's impact on China's exports throughout the continent

Variable	Asia	Africa	Europe	America
IND	-0.302*	-0.243	-0.129	-0.579
	(0.174)	(0.303)	(0.256)	(0.505)
Ln GDPC	-0.024	-0.082	0.185	0.068
	(0.101)	(0.055)	(0.253)	(0.073)
Ln DST	-0.651**	0.155	0.675	0.942
	(0.291)	(1.592)	(1.381)	(1.125)
Ln POPU	0.680***	1.072***	0.828***	-0.946***
	(0.125)	(0.223)	(0.139)	(0.150)
land	-1.175*	-1.697***	-0.487	-0.942
	(0.660)	(0.387)	(0.369)	(0.397)
Ln EFS	3.718	-1.971	0.215	-0.641
	(2.473)	(1.494)	(2.130)	(1.597)
VAC	-0.430**	0.149	-0.085	-0.978
	(0.196)	(0.303)	(0.464)	(0.736)
PSA	0.517**	-0.123	0.201	-0.202
	(0.227)	(0.301)	(0.230)	(0.279)
GEF	-0.879	0.408	0.209	1.438*
	(1.015)	(0.468)	(0.353)	(0.867)
REQ	1.470**	-0.054	1.090	-0.136
	(0.703)	(0.593)	(0.703)	(0.542)
ROL	-0.745*	0.235	-0.976	0.18
	(0.443)	(0.726)	(0.731)	(0.618)
COC	0.457	0.522	0.472	0.095
	(0.485)	(0.333)	(0.598)	(0.206)
Constant	-0.556	7.782	-3.581	15.908
	(10.875)	(15.901)	(9.834)	(12.959)
Year FE	Yes	Yes	Yes	Yes
Wald_p	0.000	0.000	0.000	0.000
N	3241	1739	4575	1847
Pseudo_r2	0.4433	0.4109	0.3971	0.6093

Note. 1) The robust standard errors are presented in parentheses and are grouped by country-commodity level.

2) Significance levels of 1%, 5%, and 10% are indicated by ***, **, and *, respectively.

The notion that political contexts vary significantly across continents is widely acknowledged, and this can manifest in diverse institutional distance roles in relation to exports: table 4 and the Appendix C present China's absolute and quantitative outcomes at the continental level. The results displayed in Table 4 demonstrate that the coefficients of IND do not exhibit statistical significance in the regressions that incorporate China's exports, with the exception of those involving Asian trading partners. This implies that the composite measure of institutional distance does not have any impact on China's exports to its trading partners in Europe, Africa, and the Americas. The findings presented in Appendix C illustrate that there is a negative relationship between institutional distance and exports when considering quantitative measures. Specifically, an increase of one standard deviation in institutional distance corresponds to a decrease of 2.98% in China's exports to its Asian trading partners. The disparity above may be attributed to the following factors. China's largest trading partner group was Asia, which contributed to nearly 50% of China's exports. Institutional distance has an impact on trade costs and consumer preferences. Hence, it is likely that the adverse consequences of institutional distance on exports would outweigh any favorable effects.

6. Conclusions

This study investigates the impact of institutional distance, an intangible element of trade, on China's exports. Specifically, it examines the impacts of decomposed institutional distance on exports from China to 103 trading partners, utilising product-level data from 2006 to 2020. Our research is primarily centred on countries in Africa

and Asia, particularly emphasising utilizing the nonlinear equations estimating PPML approach. Furthermore, distinctions between various goods and the trading partners' levels across different continents are analyzed independently.

The results suggest that the composite institutional distance between China and its trading partners has a negative impact on China's export activities. Upon examination of the component dimensions of institutional distance, it is evident that this factor hinders China's exports. The impact of institutional distance on China's primary goods exports is insignificant due to the considerable variation among products. However, the findings for China's manufactured goods exports align with those for its overall exports. The present study provides empirical support for the notion that the impact of institutional distance on China's export performance varies across different continents, except for its Asian trading partners. Stated differently, the composite institutional distance between China and its African, European, and American trade partners does not correlate significantly with China's export activities towards said partners.

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Appendix

Appendix A. Beta coefficients (%) of Institutional distance

	Africa and Asia	All countries
IND	5.86***	3.36**

Appendix B. Beta coefficients (%) of Institutional distance

	Africa and Asia				All countries			
	Primary	Manufactured	Labor	Capital	Primary	Manufactured	Labor	Capital
IND	-3.91	-6.93***	-8.36**	-7.15***	-1.15	-6.32***	-7.98***	-5.66**

Appendix C. Beta coefficients (%) of Institutional distance

	Asia	Africa	Europe	America
IND	-2.98*	-5.01	-3.06	-4.91