INNOVATIVE JOURNAL OF BUSINESS AND ECONOMICS STRATEGY
VOLUME 1, ISSUE 1
AUGUST 2024
Pg. 1-11
ISSN (Online): 3078-3240 | ISSN (Print): 3078-3232

A Nexus Between Macroeconomic Development and Bilateral Trade: The Role of National Institutional Quality

Muhammad Aqib Khursheed[1] Sundas Shabbir[2] Asif Javed[3]*

Abstract

This article investigates the impact of development and national institutions' quality on bilateral exports. Using a framework for new trade theory, we obtain a gravity equation, containing gravity variables to analyze the impact of development and quality of institutions on bilateral exports across a panel of nations. We use panel data from 20 impoverished and 41 prosperous nations for the timespan 2005 to 2022 and employ fixed effect econometric techniques to analyze the data. The findings of this study show a strong and significant direct relationship between the institutional quality and bilateral exports. Nevertheless, the quality of the institutions of the exporting country is more important than the quality of institutions of the importing country. Bilateral exports are increased when both trading nations have the same level of quality of national institutions, according to our estimation of institutional homogeneity. Furthermore, with time, the impact related to the institutional conditions at the destination grows substantially. This is a strong outcome for all economic sectors, with bilateral trade having greater value. However, to boost bilateral trade, the government should improve the quality and development of its institutions.

Key word: Institutional Quality, Bilateral Trade, Gravity theory, Fixed Effect, Development

1. Introduction

There is huge literature which suggests that trade and institutions are both important drivers of economic growth and income (Azam et al., 2021; Duodu et al., 2024). The literature on these topics is divided into two parts. First, new, and previous research reveals that growth has a positive and substantial impact on trade (Chigeto et al., 2024; Zhuang et al., 2021; Frankel and Romer, 1999). Second, previous research on this topic indicates that institutions of superior quality are a crucial predictor of economic growth and development. Domestic institutions serve as mediators in understanding the relationship between trade and growth, in addition to having direct effects on growth (Chigeto et al., 2024; Chhabra et al., 2023; Pascali and Luigi, 2017; Nunn and Trefler, 2014).

Institutions and trade are also have interdependent relationship. On the one hand institutions affect the trade but on the other hand trade also affects the institutions as, Nunn and Trefler(2014) empirically and theoratically study the interdependent connection between domestic institutions and trade, and discover that institutions positvely affect the trade. They provide rubost suggestion of the impact of trade on institutions. However Nunn and Nathan (2007) explains that trade affects the domestic institutions in different ways: mainly, by the complication of intermediary inputs in association between specific investments with the need

[1] Department of Business Economics G. d'Annunzio University of Chieti – Pescara Italy. aqibkhurshid4@gmail.com
[2] Department of Education Mohi Ud Din Islamic University Nerian Sharif AK Pakistan. sundasshabbir34@gmail.com
[3] Department of Economics "G. d'Annunzio" University of Chieti – Pescara Italy. asif.javed@unich.it

of contract securities. Their results empirically show that the instiutional quality of a country is most important for long-run gain from international trade.

Institutional homogeneity[4] is also determinant of bilateral trade, for institutional homogeneity, we use La Porta et al.'s (1997 and 1998) "Same-Legal-Origin" measure. If both the exporter and importer territories share the identical legal origin, it is assumed that they have the same constitutional background (Acemoglu and Johnson, 2005). The main concept regarding legal origins developed by (La Porta et al., 1997; La Porta et al.,1998) indicates that nations have different legal origins, which have a significant impact on monetary and economic performance.

Heterogeneous quality of institutions is also measured by legal origins; if both countries are not sharing the same legal origin, then it is referred to heterogeneous institutional quality. Heterogeneity of institutions is also playing very important role in bilateral trade flow as Bandyopadhayay and Roy (2016) analyze the hetrogeneous effect of corruption on different trade flows and discover that the exports of a country negatively affected by corruption. Marjit et al. (2014) use the same interaction between corruption and economic development and find that this interaction significantly affects the trade openness. Similarly, Dutt and Traca (2010) explore the negative impact of heterogeneous institution's quality on bilateral trade or exports. However, the impact of institutions on bilateral export varies across different countries. Hence our core objective is to test the development's role in hetrogeneous effect of quality of institutions on bilateral exports.

From an empirical perspective numerous parts of the literature investigating the role of institutions on international trade considered as a trust indicator by Euro barometer, institutional indicator from EFW and other alternative database of institutional quality (Chishti et al., 2021; Francois and Manchin, 2007; De Garoot et al., 2005; De Groot et al., 2004). We follow this studies and considered all the dimension of quality of institutions from EFW. Further, Alvarez et al. (2018) introduces the institutional quality in two ways: first institutions are considerd as a barrier to destination and second one is that the difference between institutional indicator of exporter and importer country measure the institutional differences between these countries. Hence the first type of instituions of this study are more interesting to us that low quality institutions are barrier to bilateral trade.

Empirically this study related to literature on institutions, trade, and development by Beverelli et al. (2018) , Bandyopadhayay and Roy (2016); Miura and Takechi (2014) as Beverelli et al. (2018) investigate the influence of national institutions on bilateral trade and find that stronger institutions promote trade. The basic term which is used in this article is the effect of quality of institutions on bilateral trade (exports). This approach absorbed exporter-fixed effect plus importer-fixed effects and control all the observable and unobservable country and time fixed effects. Secondly Bandyopadhayay and Roy (2016) apply the interection of corruption index and level of development and discover that the domestic higher corruption of countries negatively affects the exports of specific goods, and corruption of the trader or importer country is similarly reducing the exports of this specific things.

To estimate the effect of institutional quality and institutional homogeneity on bilateral trade we employ "Structural Gravity Methodology". This methodology empirically explains the impact of institution's quality, homogeneity of institutions and development role on bilateral trade. We use the gravity methodology because it is workhorse for empirical trade studies over the last numerous times (Eichengreen and Irwin, 1998; Baier and Bergstrand, 2003). The model has gained extensive prominence in the economics. The traditional form explained that the

trade of a country directly proportional with the volume of trading nations and negatively proportionate with a distance between countries.

This study contributes into the literature by answering the following questions: ***RQ1*** How institutional quality affects the bilateral exports. ***RQ2*** What are the effects of level of development on bilateral exports. However, novelty of this study is fourfold. First this research explores the effect institution's quality on bilateral trade in a basic gravity framework with other gravity variables including bilateral distance, contagious border, and regional trade agreements. Anderson and Van Wincoop (2003) contend that if we do not control MRTs in the gravity model, we will get incorrect outcomes for the determinants of bilateral trade. To overcome this problem, we use exporter and importer and time fixed effect by Hummels (2001); Dutt and Traca (2010); Alvarez et. (2018) which controls MRTs in gravity model. However our results indicate that quality of institutions positively affects the bilateral trade when the quality of institutions of countries is different or simultaneously low. These results conclude that when the trading is involved low institutional quality countries then unilateral expansion in institutional quality increases the bilateral exports.

Second the baseline gravity model is extended progressively to check the similarity and homogeneity of institutions (De Groot et al., 2004; Islam and Reshef, 2006). In the context of the impact of institutional homogeneity we explore that institutional homogeneity have positive impact on bilateral exports when the qualities of both countries are similar. If the quality of these two nations is high at maximum level and it cannot improve further, then they must make their institutions homogeneous to promote the bilateral exports.

2. Literature Review

In literature it has been shown that the all dimension of institutional quality affect the bilateral exports though, Meon and Sekkat (2008) use the panel data for time period 1920-2000 and examines the different dimminsion of institutional quality affecting the exports and find that the lack of political violence, government effectiveness, rule of law and control of corruption possitively affect the exports. Samilarly, Depken and Sonora (2005) use the panel data of America and it's trading partnesr for the time period 1999 and 2000. By employing the Fraser Institution's (EFW) they find that if EFW increases in the rest of the world it boosts the overall American trade volume. These results also show that how economic freedom affects the American trade positions.

Samilarly, Bilgin et al. (2017) evaluates the effect of employment protection, corporate governance, and political environments on bilateral trade. This study apply the data of 166 countries for the timespan 1976-2004 and find that countries having high institutional quality of all dimensions are affecting less from the formal and informal trade hurdles which makes the connections of international trade more easier, resultant the exports rises. Bournakis and Tsoukis (2016) examine the impact of market size which is captured by tax to GDP ration and institutional features on the export performance. This paper use the panel data of 18 OECD nations during the timespan 1980-2005 and find that tax-GDP ratio and institutional quality have significant and non-linear effect on exports performance.

Significant role of development determine the association between institutions and bilateral trade such as Kuncic (2013) explore the determinants of bilateral exports and finds that political, legal and economic institutions are main determinant for bilateral trade and also find that legal institutional differences have no effect on bilateral trade, whereas political institutional differences have postive and significant efffect on bilateral trade and economic institutional differences have significant and negative effect on bilateral trade drifts. Secondly, development of a country also positively affect the bilateral trade. However Bojnec et al.

(2009) use the panel data of OECD countries and investigate that the effect of level of development on the influence of the level of development on the trends of bilateral trade depends on institutional determinants.

Homogeneity or similarity of institutions means: if two countries are sharing the identical level of institutions or same appearance of institutions. If both countries are sharing same level or characteristics of institutions, it is called homogeneity of institutions, and both are not sharing the same level or characteristics of institutions it is called heterogeneity of institutions. There is huge literature which considered the same legal origin as the homogeneity of institutions for distinct countries (Chishti et al., 2021; Acemoglu and Johnson 2005; Islam and Reshef 2006).

Institutional homogeneity and institutional heterogeneity can be determined simultaneously such as, De Groot et al (2004) inspect the effect of situation of institutions along with institutional homogeneity and heterogeneity on trade flows with the help of gravity framework by using the same proxies to signify the institutions. The result of this paper specifies that there is significant and positive impact of environment of institutions on bilateral exports. The heterogeneity increases transaction costs and reducing bilateral trade. Samilarly, Yan and Wu (2018) investigate the impact of institutional quality and institutional hetrogeneity on sustatinable development of exports. They use the panel data of China's 20 industries exports to 117 countries for the period of 1996-2011 and find that institutions' quality enhances the viable development of industrial exports in developing nations.

3. Methodology

3.1 Empirical Model

This study has three objectives. First, we examine the impact of institutional homogeneity on bilateral trade. Second, we investigate the impact of institutional heterogeneity on bilateral trade. Third, following Bandyopadhayay and Roy (2016), our study shows how institutional quality affects bilateral trade while also considering the influence of development. We do our analysis sequentially (Beverelli et al., 2018). We begin the research with the conventional gravity model and then illustrate the effect of institutional quality and development on bilateral trade within that model. We construct following equation for our first objective:

$$lnx_{ijt} = GRAV_{ij}\beta + \beta_1 IQ_{it} + \beta_2 IQ_{jt} + \beta_3 lny_{it} + \beta_4 lny_{jt} + \beta_5 Law_{ij} + \beta_6 ER_{it} + \beta_7 IQ_{it} * lny_{it} + \beta_8 IQ_{jt} * lny_{it} + \eta_{ij} + \mu_t + \varepsilon_{ijt} \quad (3.1)$$

For our second objective heterogeneous institutional quality, bilateral export, and development we construct following equation:

$$lnx_{ijt} = GRAV_{ij}\beta + \beta_1 IQ_{it} + \beta_2 IQ_{jt} + \beta_3 lny_{it} + \beta_4 lny_{jt} + \beta_5 ER_{it} + \beta_6 IQ_{it} * lny_{it} + \beta_7 IQ_{jt} * lny_{it} + \eta_{ij} + \mu_t + \varepsilon_{ijt} \quad (3.2)$$

In Equation 3.1 GRAV is containing graveity variable which includes: $LNDIST_{ij}$ distance involving country i and nation j, $CNTG_{ij}$ is for common border, for official common language we used ($LANG_{ij}$). For sahring colonial relationships it is ($CLNY_{ij}$). For regional trad agreements between two countries is RTA., (Law) is homogenity of institutions, X_{ijt} is bilateral exports from country exporting (i) to country mporting (j) in time which is t. IQ_{it} is institution's quality (IQ) of exporting in (t) time. IQ_{jt} is institution's quality (IQ) of importing nation in (t) tim. lny_{it} is GDP Per Capita (in dollar) of exporter and lny_{jt} is the GDP per-capita of importer nations which is used for level of development. (ER_{it}) is real exchange rate of country i in time (t). η_{ij} is fixed-effect It is used to represent the impact of country-pairs that regulate the MRTs in the gravity model and μ_t is year fixed-effect capture the influence of time-varying.

3.2 Method of Estimation

We estimate the gravity equation by using a fixed-effect model with the assumption of the association between individual specific effects and exogenous variable. And estimate the gravity equation using Random-effect model with the assumption of the not correlation between individual specific effects and exogenous variable as Bandyopadhayay and Roy (2016) estimate in their paper. To check that whether the fixed-effect model is suitable or random-effect model is appropriate we use Wu-Huasman test.

3.3 Descriptive statistics

As in the recent literature (Alvarez et al., 2018; Beverelli et., 2018; Anderson and Marcouiler, 2002) examining the impact of institutions on bilateral trade, our analysis based on gravity equation. By following the literature (Chhabra et al., 2023; Alvarez et al., 2018) firstly we present descriptive statistics in Table (3.1). The descriptive statistics provide the number of observations in the first column, mean in second column, standard deviation in third column, minimum values of variables in fourth column and maximum values of variables in fifth column. And all variables are presented in natural log form.

Table: 1 **Descriptive Statistics**

VARIABLES	(1) N	(2) mean	(3) SD	(4) min	(5) max
LN Bilateral Exports $_{ijt}$	56,354	17.70	3.509	0	26.74
LN Bilateral Distance $_{ij}$	62,220	8.708	0.785	5.374	9.889
Contagious Border $_{ij}$	62,220	0.0279	0.165	0	1
Common Language $_{ij}$	62,220	0.132	0.338	0	1
Colonial Relationship $_{ij}$	62,220	0.0281	0.165	0	1
Regional Trade Agreement $_{ijt}$	62,220	0.298	0.457	0	1
LN GDP Per-capita $_{it}$	62,100	8.932	1.406	5.926	11.43
LN GDP Per-capita $_{jt}$	62,100	8.932	1.406	5.926	11.43
EFW $_{it}$	59,700	6.875	0.902	2.881	8.973
EFW $_{jt}$	59,700	6.875	0.902	2.881	8.973
Law $_{ijt}$	62,220	0.327	0.469	0	1
Exchange Rate $_{ijt}$	62,040	0.442	0.628	7.47e-05	3.720

Note: i and j shows exporter and importer country respectively, Contagious border: if both i and j share same border, common official language: if both countries speaks the same language, EFW measures the institutional quality, Law is dummy variable for homogeneity of institutions, Interactions: Interaction between institutional quality and development measured by GDP per capita, Exchange rate from i to j, Natural log Trade openness from j to i.

3.2 Description of Variables

Table 2: Description of Variables and data sources of variables

Variables	**Indicators**	**Definition**	**Sources**	**Measures**
X ijt	Bilateral Exporters	Bilateral trade (exports) flows from exporting country(i) to Importing country(j)	UNCOMTRADE , CEPII	Total exports
DIST	Distance	Logarithm of bilateral distance between exporting and importing countries	CEPII	Distance in Kilometers

CNTG	Contagious boarder	Contagious boarder mean whether or not two trading partner share a common boarder	CEPII	Same border
LANG	Language	Common official language mean whether i and j speak the same official language	CEPII	Culture Similarity
CLNY	Colonial Relations	colonial relationship mean if two countries share any colonial relationships	CEPII	Colonial Ties
RTA	Regional Trade Agreements	Whether exporting and importing countries have an RTA in force (RTAij)	WTO & Mario Larch's Regional Trade Agreements Database	Free Trade
EFW	Economic Freedom of the World	This variable is constructed by aggregate institutional quality index, as the simple average of the five individual EFW categories: (i) freedom to trade (ii) regulation of business, credit and labor (iii) size of government (iv) access to sound money (v) legal structure and protection of property rights	Economic Freedom of the World Database	Institutional Quality
GDP P. Capita	GDP Per Capita	GDP per capita is a measure of a country's economic production based on its population. It divides the country's GDP by its total population. This makes it the most accurate measure of a country's standard of life.	World development indicator (WDI)	Level of development& Size of the Government
ER	Exchange Rate	Exchange Rate of exporter country from local currency to US dollar	UNCTAD	Price of local goods for other nations

Sample: South Asia=4, Sub-Saharan Africa=11, Latin America& Caribbean=8, East Asia Pacific=9, Middle East& North Africa=8, Europe & Central Asia=19, North America=2

4. Results and Discussion

By obtaining the partial derivative estimations of the directly impact of national institutions and the developments level on bilateral exports, this study shows the strength of our techniques in this section. We also explore the ways that institutional heterogeneity and homogeneity impacts on bilateral exports. In recent literature of institutions, development and bilateral trade different studies used the different estimation methods to investigate the role of institutions and development on bilateral exports (Chigeto et al., 2024; Larch et al. 2019; Zylkin, 2018; Alvarez et al., 2018; Beverelli et al., 2018) nonetheless the fixed effect and random effect was popular in some current and many previous studies to check the role of institutions and development on bilateral exports (Chhabra et al., 2023;Bandyopadhayay and Roy, 2016; Naanwaab and Diarrassouba, 2013; Hosseini, 2011; Levchenko, 2007). However, we used our analysis by using fixed effect and random effect estimation method as suggested by Bandyopadhayay and Roy (2016) but we present here only fixed effect estimation result because our Wu-Huaman test guide us that the fixed effect estimation method is appropriate for our data set and.

Gravity variables and their time-invariant effect on bilateral exports is revealed by the baseline standard gravity estimates from the column one of the Table (3). This indicates that while having a Bilateral trade is encouraged by having a common official language, sharing colonial links, and sharing bilateral trade agreements, but distance, and contagious borders act as barriers to bilateral trade. LN_DIST has a significant and negative estimated effect on bilateral

export. Contagious borders, a colonial ties, common official language, and trade agreements all have positive significant effects on bilateral exports. However, the time-varying effects of variables namely, institutional quality and the interaction term between institutional quality and development level on bilateral exports are of greater interest to us.

However, our fixed effect estimation results are consistent with literature (Chhabra et al., 2023) with little differences when we drop common official language from regression. However, Column one and 2 of Table (3) reports the main results also explain the homogeneity and heterogeneity of institutions, in these columns bilateral distance negatively relates with bilateral exports. Contagious border, colonial relationship and regional trade agreements are positively related with bilateral exports. The GDP per capita of both the exporter and the importer nations has a positive and significant impact on bilateral exports; however, the exporter country's GDP per capita has a greater coefficient than the importer country's GDP per capita, indicating that the exporter country's level of development is more essential than the importer country's level of development. The quality of the institutions of both the exporter and the importer has a larger coefficient than the importer country's institutional quality, indicating that the exporter country's institutions are more important than the importer country's institutions to increase bilateral exports. Exchange rate is also positively and significantly related with bilateral export that explains that country with strong exchange rate trade more. Law variable is used for homogeneity of institutional quality which shows that Bilateral exports are encouraged when the institutional levels of the two nations are equal.

Column 3 and 4 of Table (3) reports the interaction effects of quality of institutions and development level on bilateral exports is also significant and positive. We just include here interaction terms only without individual terms to avoid the multicollinearity as shown in many studies that interactive term with individual terms allow the multicollinearity to enter in regression and multicollinearity leads biased estimates.

Column 3 of Table (3) shows the homogenous interaction effect and column 4 of Table (3) shows the heterogenous interaction effects. In these columns all other coefficients of variables are consistent with column 1 and 2 of this table along with interaction terms. The interaction effect of quality of institutions and development level for exporter country and importer country is positive and significant but the coefficient of exporter country is larger than the importer country which leads that the interaction between institutional quality and the development of the exporting nation's economy has a greater impact on bilateral exports than the interaction between the institutional quality and development of the importing nation.

Our results yield three main conclusions: first, they allow to determine the effect of quality of institutions on bilateral exports during the presence of the full set of exporter-fixed-effects and importer-fixed-effects, plus time-fixed effects. This supports the contention made by Beverelli et al. (2018) that, should we employ fixed effects in our analysis, collinearity issues shell not arise. Second, quality of institutions is crucial in describing the effect of institutional quality on bilateral exports if both the exporter's and the importer's countries' quality of institutions is completely or partially low. Third, the law variable's positive and statistically significant results (which measure institutional homogeneity) imply that bilateral exports are encouraged if both nations have institutional qualities that are like one another. According to Miura and Takechi (2014), this finding has important implications for institutional quality homogeneity, particularly in nations with high institutional quality.

Table 3 Impact of quality of Institutions and development level on bilateral exports

VARIABLES	(1) Fixed Effect HOMO Main	(2) Fixed Effect HETRO Main	(3) FE Interaction HOMO	(4) FE Interaction HETRO
LN DIST ij	-0.917***	-0.934***	-0.972***	-0.987***
	(0.0157)	(0.0157)	(0.0159)	(0.0159)
CONT ij	1.183***	1.321***	1.169***	1.304***
	(0.0623)	(0.0620)	(0.0635)	(0.0631)
COL ij	1.405***	1.579***	1.376***	1.547***
	(0.0592)	(0.0584)	(0.0603)	(0.0595)
RTA ijt	0.661***	0.665***	0.665***	0.669***
	(0.0242)	(0.0243)	(0.0246)	(0.0247)
LN P. GDP it	2.288***	2.297***		
	(0.0726)	(0.0728)		
LN P. GDP jt	0.672***	0.659***		
	(0.00866)	(0.00865)		
EFW it	0.0807*	0.0792*		
	(0.0450)	(0.0451)		
EFW jt	0.0316**	0.0228*		
	(0.0137)	(0.0138)		
ER it	0.573***	0.576***	0.361***	0.363***
	(0.0915)	(0.0917)	(0.0932)	(0.0934)
Law ijt	0.384***		0.377***	
	(0.0226)		(0.0231)	
INT it			0.0924***	0.0926***
			(0.00379)	(0.00379)
INT jt			0.0566***	0.0551***
			(0.000615)	(0.000610)
Constant	-2.347***	-1.990***	16.30***	16.62***
	(0.615)	(0.616)	(0.276)	(0.276)
Observations	52,607	52,607	52,607	52,607
R-squared	0.322	0.319	0.297	0.293
Number of PID	60	60	60	60
Fixed-Effects	Yes	Yes	Yes	Yes

"Standard errors in parentheses"
*** p<0.01, ** p<0.05, * p<0.1

Note: This Table shows fixed effect estimation method. Column 1 and 2 of this table reveals the fixed-effect estimation results without interactions and column (3) and (4) indicate the main results of fixed effect estimation with interaction terms of development and institutional quality.

5. Conclusion

Current economic and financial crisis has revealed questions on the importance of institutions in economics. In the context of institutions this article applies an innovative methodology which allow to examine how informal trade barriers are influenced by the homogeneity and quality of institutions about bilateral export flows within structural gravity framework with proper set of fixed-effects: exporter, importer, and time-fixed effects. Our technique is

consistent with the theoretical gravity model and allows for the identification of the effects of institutional quality and degree of development on bilateral exports. There are three other vital benefits of our approach.

We have assessed the positive and significant impact of institutional quality and development on bilateral export flow. The outcome of identical institutional quality is likewise noteworthy and positive, indicating that identical institutional quality promotes bilateral export patterns. Such impacts are basically strong for trade flows that represent individual effects of institutions, institutional homogeneities, and level developments on bilateral exports. Our results are strong to practice the estimators (i.e., Fixed Effect Estimator) which are standard in the literature of institutions, development, and trade.

Our findings also indicate that the institutions' quality and development level of both exporter and importer countries affect the bilateral trade but the quality of institutions and level of development of exporter country is more significant than the quality of institutions and development level of importer country. Therefore, government should initiate the policies which facilitate the local producers and foreign exporters to increase their exports and attract the importers to import the products which give the absolute and comparative advantages.

References

Acemoglu, D., & Johnson, S. (2005). Unbundling institutions. *Journal of Political Economy, 113*(5), 949-995.

Acemoglu, D., Johnson, S., & Robinson, J. (2001). The Colonial Origins of Comparative Development: An Empirical Investigation. *American Economic Review, 5*(1), 1369-1401.

Alvarez, I., Barbero, J., Rodriguez-Pose, A., & Zofio, J. (2018). Does Institutional Quality Matter for Trade? Institutional Conditions in a Sectoral Trade Framework. *World Development, 103*(1), 72-87.

Anderson, J., & Van Wincoop, E. (2003). Gravity with Gravitas: A Solution to the Border Puzzle. *The American Economic Review, 93*(1), 170-192.

Azam, M., Hunjra, A. I., Bouri, E., Tan, Y., & Al-Faryan, M. A. S. (2021). Impact of institutional quality on sustainable development: Evidence from developing countries. *Journal of Environmental Management, 298*, 113465.

Baier, S. L., & Bergstrand, J. H. (2004). Economic Determinants of Free Trade Agreements. *Journal of International Economics, 64*(1), 29-63.

Bandyopadhayay, S., & Roy, S. (2016). The Effects of Corruption on Trade Flows: A Disaggregated Analysis. *International Trade and International Finance, 1*(1), 97-116.

Bilgin, M. H., Gozgor, G., & Lau, C. M. (2017). Institutions and gravity model: the role of political economy and corporate governance. *Eurasian Business Rewiew, 7*(3), 421-436.

Bojnec, S., Imre, F., & Kti, M. (2009). The Institutional Determinants of Bilateral Agricultural and Food Trade. *Applied Studies in Agribusiness and Commerce, 1*(3), 1-15.

Bournakis, L., & Tsoukis, C. (2016). Government size, institutions, and export performance among OECD economies. *Economic Modelling, 53*(1), 37-47.

Chhabra, M., Giri, A. K., & Kumar, A. (2023). What shapes economic growth in BRICS? Exploring the role of institutional quality and trade openness. *Economic Papers: A journal of applied economics and policy, 42*(4), 347-365.

Chigeto, A. D., Jayamohan, M. K., & Ayeru, E. (2024). Does financial development and institutional quality matter in South-South Trade? Evidence from Sub-Saharan Africa. *Research in Globalization, 8*, 100209.

Chishti, M. Z., Hussain, B., & Khursheed, M. A. (2021). Impact of Institutional Quality on Bilateral Exports: Exploring the role of Development. *Journal of Applied Economics and Business Studies, 5*(2), 17-34.

De Groot, H. L., Rietveld, P., Subramanian, U., & Linders, G.-J. (2004). The Institutional Determinants of Bilateral Trade Patterns. *KYKLOS, 57*(1), 103-123.

Depken, c. A., & Sonora, R. J. (2005). Asymmetric Effect of Economic Freedom on International Trade Flows. *International Journal of Busines and Economics, 4*(2), 141-155.

Duodu, E., Kwarteng, E., & Ogajah Tawiah, T. (2024). Trade, institutional quality and economic growth in Africa: does China and United States trade matter?. *The Journal of International Trade & Economic Development*, 1-32.

Dutt, P., & Traca, D. (2010). Corruption and Bilateral Trade Flow: Extortion or Evasion? *The Review of Economic and Statistics, 92*(4), 843-860.

Eichengreen, B., & Irwin, D. A. (1998). The role of history in bilateral trade flows. *In The regionalization of the world economy* (pp. 33-62). University of Chicago Press.

Francois, J., & Manchin, M. (2007). Institutions, Infrastructure, and Trade. *World Development, 46*(1), 165-175.

Frankel, J. A., & Romer, D. H. (1999). Does Trade Cause Growth? *American Economic Review, 89*(3), 379-399.

Hosseini, S. H. (2011). Does Corruption Mitigate Trade in the EU?

Hummels, D. L. (2001). Toward a Geography of Trade Costs. *SSRN 160533, 17*, 1-32.

Islam, R., & Reshef, A. (2006). If Your Institutions are Good, Does it Matter if they are Differenen? *The World Bank*, 1-61.

Kuncic, A. (2013). Trade and Institutions: Do not forget institutional distance. *2016-11-09]. https//cerge-ei.cz/pdf/gdn/rrc/RRCXJJ_51_paper_.pdf, 1*(1), 1-21.

La Porta, R., Lopez-de-Ailanes, F., Shleifer, A., & Vishny, R. W. (1997). Legal Determinant of External Finance. *The Jounal of Finance, 52*(3), 1131-1150.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. W. (1998). Law and Finance. *Journal of Political Economy, 106*(6), 1113-1155.

Larch, M., Wanner, J., Yotov, Y. V., & Zylkin, T. (2019). Currency Unions and Trade: A PPML Re-assessment with High-dimensional Fixed Effects. *Oxford Bulletin of Economics and Statistics, 81*(3), 487-510.

Levchenko, A. (2007). Institutional Quality and International Trade. *Review of Economic Studies, 74*(3), 791-819.

Marjit, S., Mandal, B., & Roy, S. (2014). Trade Openess, Corruption and Factor Abundace: Evidence from a Dynamic Panel. *Review of Development Economics, 18*(1), 45-58.

Meon, P.-G., & Sekkat, K. (2008). Institutional Quality and Trade: Which Institutions? Which Trade? *Econonomic Inquiry, 46*(2), 227-240.

Miura, K., & Takechi, K. (2014). Institutional Quality and Homogeneity, and Types of International Transactions. *Scientific Research, 1*(1), 1-21.

Naanwaab, C., & Diarrassouba, M. (2013). The Impact of Economic Freedom on Bilateral Trade: A Cross-Country Analysis. *International Journal of Business Management and Economic Research, 4*(1), 668-672.

Nunn, & Nathan. (2007). Relationship-Specificity, Incomplete Contracts, and the Pattern of Trade. *Quarterly Journal of Economics, 122*(2), 569-600.

Nunn, N., & Trefler, D. (2014). Domestic institutions as a source of comparative advantage. *Handbook of international economics, 4*(1), 263-315.

Pascali, & Luigi. (2017). The Wind of Change: Maritime Technology, Trade, and Economic Development. *American Economic Review, 107*(9), 2821-2854.

Robinson, S., Burfisher, M. E., Hinojosa-Ojeda, R., & Thierfelder, K. E. (1993). Agricultural Policies and Migration in a US-Mexico Free Trade Area: A Computable General Equilibrium Analysis. *Journal of Policy Modeling, 15*(5-6), 673-701.

Yan, X., & Wu, F. (2018). Institutional Quality and Sustainable Development of industries' Exports: Evidence from China. *Sustainability, 10*(11), 41-73.

Zhuang, Y., Yang, S., Chupradit, S., Nawaz, M. A., Xiong, R., & Koksal, C. (2021). A nexus between macroeconomic dynamics and trade openness: moderating role of institutional quality. *Business Process Management Journal*, *27*(6), 1703-1719.

Zylkin, T. (2018). PPML_PANEL_SG: Stata module to estimate "structural gravity" models via Poisson PML.