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DOES QUALITY OF GOVERNANCE PLAY A ROLE IN TRADE? THE CASE OF INDIA'S TRADE FLOWS

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ABSTRACT

Economies across the globe are working towards strengthening the quality of governance to promote a conducive environment for trade and investment. The study is an attempt to empirically examine the impact of quality of governance on India's trade with 23 Asian partners for a period from 2000 to 2019. In order to examine the determinants of India's trade, the study employs both static as well as dynamic panel regression models. We also form an index to capture the indicators of governance using principal component analysis. The result indicates that better trade policies (trade openness) and well managed governance indicators have a positive and significant contribution on India's trade. Sound governance definitely facilitates better institutional, administrative, and operative environment in terms of lower transaction cost, better enforcement mechanism, better channels of distribution, and reduces barriers for free movement of goods, services and capital for India.

Contribution/ Originality: This is the first study to evaluate the impact on macro governance variables on India's bilateral trade flows. The study forms a governance index using principal component analysis. To empirically evaluate the explanatory variables (trade openness, economic size, governance), the study employs fixed effects estimation, GMM system and GMM differenced.

1. INTRODUCTION

The world economic system has been experiencing a wave of liberalization and globalization for the last 3-4 decades, which has facilitated trade and investment flows. Trade is an integral part of the world economic system. International trade gets affected by a large number of factors: both home country specific as well as host country specific. Some of these factors include economic size of the trading economies, per capita income of the trading economies, size of population, trade policies, regional factors (such as distance and linguistic proximity), domestic environment (of both the partners) and trade openness of the economies. These factors either ease or restrict transaction cost (or trade related cost) and hence determine cross countries' transportation cost. Many of these factors have traditionally remained important determinants of trade flows. However, with changes sweeping across the world, quality of governance is assuming an important role in international trade and investment decisions.

Macro level indicators of governance include *control of corruption; government effectiveness; political stability and absence of violence/terrorism; regulatory quality; rule of law; and voice and accountability.* Macro level governance

indicators support a healthy domestic domain for trade and exchange among nations. Corruption reduces democratic controls and internal mechanisms affecting smooth flow of goods and service at both domestic and international level. Lack of political stability and presence of terrorism in an economy increases vulnerability and risk. Terrorism affects trade channels and deteriorates national goals. Stringent regulatory mechanism within an economy leads to delay and defer production process. When the resources of production are scarce, a well-structured rule of law helps in better distribution and management of factors of production. In case the inhabitants have freedom to express and can hold the government accountable then the organizations functioning in such an economy can exercise better bargaining mechanism and thus support the channels of trade. In other words poor macro level governance leads to increase in transaction cost; deterioration of trade-related channels; production of non-competitive products; and inefficient use of domestic resources. Hence an economy with no or little governance will be a weaker market to trade with. The focus of the study is to determine whether countries with good (or strong) domestic environment in terms of governance are better facilitators of trade to Indian sub-continent.

2. INDIA AND MACROECONOMIC GOVERNANCE

World Bank provides data for macro governance indicators or worldwide governance indicators (WGI) as percentile ranks. Percentile ranks are employed to assign rank to each country by an aggregate indicator, where 0 indicates lowest rank and 100 denotes highest rank. Table 1 depicts India's percentile ranking for all six macro governance indicators covered in the study for the period 2000 to 2019.

Table 1. Percentile ranks for India's Macro level governance indicators (2000-2019).

Year	Control of Corruption	Political Stability and Absence of Violence/ Terrorism	Regulatory Quality	Rule of Law	Voice and Accountability	Government Effectiveness
2000	44.162	17.460	44.103	62.376	59.204	51.282
2002	35.859	15.873	42.347	53.96	61.194	53.061
2003	41.414	9.045	42.347	58.911	63.184	56.122
2004	40.976	13.107	38.424	55.024	61.538	52.217
2005	44.390	17.476	45.098	56.938	61.538	52.451
2006	46.829	16.908	45.098	58.373	59.135	53.659
2007	40.291	13.527	42.233	56.459	59.615	57.282
2008	44.175	13.942	40.291	57.692	60.096	54.854
2009	38.756	10.427	41.627	54.976	59.716	56.459
2010	38.571	11.374	38.756	54.028	60.190	56.938
2011	35.545	10.900	40.758	52.582	61.033	54.976
2012	36.967	10.900	35.071	52.582	61.033	48.815
2013	36.967	12.322	35.071	53.052	61.502	47.867
2014	41.827	13.810	34.615	54.808	60.099	45.192
2015	44.712	17.143	39.904	55.769	60.591	56.250
2016	47.596	14.762	41.346	53.365	61.576	55.769
2017	48.558	18.095	42.308	52.885	59.606	56.731
2018	49.519	14.286	44.231	55.288	60.099	63.942
2019	47.596	21.429	48.558	52.404	57.635	59.615
20 years average	42.353	14.357	41.168	55.341	60.452	54.394

Source: Based on the data collected from world bank database.

India's governance data indicates that percentile ranks for rule of law; voice and accountability; and government effectiveness indicators have been more than 50 percentiles on an average in past 20 years. Moreover, the data indicates that India's macro indicator percentiles have been more or less consistent over the period of 20 years, this indicates India's intent to provide a stable market and a healthy business environment for trade and trade related activities. Though, the average percentile for political stability and absence of terrorism has been low during past 20 years but India has performed reasonably well in other five domains of governance. India has been

consistently working on macro governance indicators in order to nourish trade, investment and various financial (and economic) parameters both on domestic as well as national front. The study encapsulates the measures taken by India.

2.1. India and Control of Corruption

In order to control corruption and to penalize for corruption, India has come up with various corruption control regulations and laws from time to time. Corruption combating laws and regulations include Indian penal code 1860 (IPC) to penalize public servants for corruption; Prevention of Corruption Act 1988 (POCA) (amended time to time) to punish bribe givers; The Benami transaction (prohibition) Act 1988 to prohibit purchase of property in false name; Competition Act 2002 to prohibit anti-competition behavior; Sec 182(1) of Company's Act 2013 to stop government companies or companies with less than 3years age to provide political funding/contribution; Sec 37 (1) of Income tax to provide no deduction to be claimed as expenditure for any unlawful activity; Prevention of money laundering Act 2002 to prevent money laundering activities and to strengthen financial institutions; and various others. Moreover, since 2005 India is signatory (not ratified) to UN convention against corruption.

2.2. India and Political Stability and Absence of Terrorism/ Violence

On the political front, the country has witnessed stability as none of the ruling government has been dissolved before the completion of its term since 1998. However, India still needs to do lot of work to combat terrorism and violence. India continues to face number of terror attacks including cross-border terrorism. As evident from the data collected from World bank, India's average percentile for political stability and absence of violence for last 20 years is less than 15.

2.3. India and Regulatory Bodies

Regulatory bodies are self-supporting statutory/ government bodies established by government to set standards; improve administrative and operational domain; and to ensure enforcement of standards. Government of India designated sectoral governance to regulatory bodies in order to strengthen financial and capital markets; ensure fair and free trade; encourage professional approach; and nurture spontaneous redress/remedial mechanisms. Some of the significant regulatory bodies in India include RBI, SEBI, press council of India, Competition Commission of India, and various others. These regulatory bodies are playing significant role for India both at domestic as well as international platform.

2.4. India and Rule of Law

Rule of law denotes predominance of law of land above any other elected representative or administration in a country. In India, presence of constitution indicates rule of law. All executive and administrative powers in India are vested with the supreme law of land (constitution). Moreover, courts in India have extensively contributed towards strengthening the rule of law via numerous judgements. The twenty years percentile average rank for India's rule of law has been 55.34 which indicate that the presence of rule of law has decently contributed towards shaping India's state and administrative functioning.

2.5. India and Voice and Accountability

Indian citizens are freely able to convey and exercise their point of view. Even, digital development and technological enhancement have contributed to the citizen voice and state accountability. Indian citizens can hold the state answerable for non-performance. In 2019, voice and accountability percentile rank for Pakistan, Sri Lanka, China and India were 23.15; 43.8; 6.4; and 57.63 respectively (based on data collected from World Bank database).

India has definitely ranked better for voice and accountability in terms of percentile as compared to the neighboring countries.

2.6. India and Government Effectiveness

As far as government effectiveness is concerned, India has reasonably performed better than other emerging economies. India's percentile rank for government effectiveness for 2018 was more than 60. Moreover, Indian government has come up with number of strategic policies to strengthen economic growth; domestic and international environment; citizen welfare; and institutional functioning from time to time. India has fairly contributed in almost all macro governance indicators. Moreover, the percentile ranks for all governance indicators indicate intent of regulatory bodies and state administration to provide a stable platform for growth, trade and investment.

3. RATIONALE OF THE STUDY

Since last few decades there has been a wave towards refining the quality of governance at macro level and large number of studies have captured the impact of governance on FDI flows. However, very few studies have incorporated the impact of good governance on bilateral trade flows. Therefore, it is significant to look into the impact of quality governance on Indian trade. The study is an attempt to empirically capture the impact of governance variables, namely control of corruption; voice and accountability; regulatory quality; rule of law; and government stability and control over terrorism on India's bilateral trade.

4. LITERATURE REVIEW

Too few studies have captured the impact of good governance on trade. Groot, Linders, and Rietveld (2005) empirically estimated that ineffective institutions and bad governance increase transaction costs and reduce international transport flows. The study employs gravity equations of bilateral trade and found that differences in the quality and effectiveness of institutions help in explaining the tendency of OECD and non-OECD countries to trade disproportionately with each other. Lavallée (2005) tries to assess the impact of quality governance in developing countries on North South trade. The study employs gravity model for the period 1984-1997 for a sample of 21 OECD countries and 95 developing countries. The results depict that a better governed developing economy, imports more from industrialized economy. Few studies have also captured the impact of corruption on trade. Hosseini-Pozveh (2011) captured the impacts of corruption on the bilateral trade of 25 EU countries from 1999 to 2008.The study found that the level of corruption of exporting country significantly reduces bilateral trade flows, while the corruption level of importing country has no effect on intra-EU 25 trade flows. Sarwar and Pervaiz (2013) empirically estimated the relationship between trade liberalization and corruption, using data from twenty-four countries divided into three panels: low-income, middle- income and high-income countries for a period of 23 years starting from 1995 to 2007. The results show that trade liberalization is both statistically significant and negatively correlated to the corruption level of these countries included in the study. Voraveeravong (2013) studies the impacts of corruption on bilateral trade flows during 2006 to 2011 using data for all ASEAN countries, namely, Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam. The results depict that the corruption perception index (CPI) of both bilateral countries has a positive relationship to bilateral trade flows using gravity model. The results, hence, show that corruption deteriorates trade. De (2010) empirically examines all individual governance indicators in order to examine the impact on Asian trade. The study found all governance indicators to be positive except for regulatory quality. Khorana and Martínez-Zarzoso (2018) employed gravity model to examine relationship between exports of common wealth countries and governance indicators. The results were found to be positive and significant. Some studies have even captured the impact of governance on FDI flows. Talamo (2007) studies the determinants of bilateral FDI. The study examines the role of institutional

variables and quality of governance (firm level) on FDI flows. The results depict that the quality of corporate governance institutions and mechanisms have positive effects on FDI flows. Adeoye (2007) uses World Bank governance indicators to empirically test the relationship between macroeconomic level corporate governance and inwards FDI flows into emerging market countries, using a panel data set of 33 countries between 1997 and 2002. The study found that macroeconomic corporate governance has a positive and significant effect on inwards FDI flows. Berden, Bergstrand, and Van Etten (2014) studied both trade and investment. The study found that indicators for trade are different from investment indicators.

5. RESEARCH METHODOLOGY

5.1. Sample Period

The study covers a period of 20 years from 2000 till 2019 to capture the impact of quality of governance on India's bilateral trade with 23 Asian partners. The trading partners covered are China, Singapore, Hong Kong, Saudi Arabia, Japan, Bangladesh, Republic of Korea, Sri Lanka, Israel, Malaysia, Turkey, Vietnam, Thailand, Nepal, Indonesia, Oman, Pakistan, Kuwait, Bhutan, Myanmar, Brunei Darussalam, Maldives and Philippines. In 2018, these countries accounted for more than 70% of India's export to Asia and 40% of India's total trade to the world (based on data collected from www.trademap.com). Some countries such as United Arab Emirates, Iran, Jordan, Afghanistan and Iraq were dropped due to non-availability of data for a number of explanatory variables.

5.2. Data Source

The data on bilateral trade between India and trading partners was collected from international trade Centre and UN Comtrade database. Data for independent variables GDP for India and its Asian trading economies were taken from the World Bank database. With respect to other explanatory variable, trade openness of the trading partner, the data was gathered from United Nations conference on trade and development, UNCTAD database. The details of macro level governance variables, the data was obtained from World Bank. In order to capture the macro level governance index, the study collected macro level governance variables from World Bank database compiled by Kaufmann, Aart, and Massimo (2010). World Bank provides six equally scaled summary-indicators covering different areas of governance. The study applies principal component analysis to form a composite index by using all the six governance estimates.

5.3. Model Specification

The study captures the impact of governance on Indian trade with bilateral trade as dependent variable. Our work captures the explanatory variables using panel regression model. Therefore, functional form of our regression model capturing trade determinants of India and governance is as follows:

$$Bilateral\ Tradei_{jt} = f\ (GDP_{it}, GDP_{jt}, TOPEN_{it}, TOPEN_{jt}, Governance\ index_{it}, Governance\ index_{jt})$$

Where bilateral trade is the dependent variable. However, the study uses a double log model for panel data regression to analyze the determinants of bilateral trade between India and its trading partner.

$$Logtradei_{jt} = (LogGDP_{it} + LogGDP_{jt} + LogTOPEN_{it} + LogTOPEN_{jt} + LogGOVER_{it} + LogGOVER_{jt})$$

$Logtradei_{jt}$, represents log of trade flow from India i to trading partner (host) j for year t (where t represents year starting from 2000 till 2019).

$LogGDP_{it}$, the log of GDP of country i (India) for given year t.

$LogGDP_{jt}$, the log of GDP of country j for given year t.

$LogTOPEN_{it}$, the log of trade openness of host country i(India) for given year t.

$LogTOPEN_{jt}$, the log of trade openness of host country j for given year t.

$LogGOVER_{it}$, the log of index of governance of country i (India) formed by using principal component analysis for the given year t.

$LogGOVER_{jt}$, the log of index of governance of partner country j formed by using principal component analysis for the given year t.

5.4. Explanation of the Dependent Variables

The determinants covered under the study and their impact on Indian trade is explained below. Income (GDP) is one of the traditional enhancement variables in bilateral trade. Gross domestic product (GDP) has been incorporated to explain the economic size of both the trading countries. GDP variable has been extensively used in regression model to capture the factors of pull towards trade. Groot et al. (2005); Khorana and Martínez-Zarzoso (2018) considered GDP of both home and host countries while empirically evaluating the impact of governance on trade. The GDP of India i.e. (GDPi) measures production/absorption capacity of India. GDPi is symbolic of supply (demand) of goods and services available for export (import) with the home country (India). GDPi is expected to have positive impact on the Indian trade.

H_{01}: GDP of India negatively affects India's trade.

H_{a1}: GDP of India positively affects India's trade.

GDP of the importing country (GDPj) measures absorption/production capacity. GDPj captures the demand (or supply) for Indian products in the host economy. GDP of the trading partners is expected to have a positive coefficient because of direct relationship between trade and GDP.

H_{02}: GDP of trading partner does not affect India's trade.

H_{a2}: GDP of trading partner positively affects India's trade.

Other significant variable incorporated is trade openness (TOPEN). Openness in trade refers to the degrees to which countries or economies permit or have trade with other countries or economies. Trade openness captures the strength in the domestic policies which promote trade among trading partners. In our study, trade openness has been the indicator of trade component of GDP hence equated as (Total X + Total M)/ real GDP. The study incorporates trade openness variable both for India (TOPNi) and its trading partner (TOPNj). We expect that bilateral trade between India and the trading partner will increase with the increase in trade openness of both home (India) and host country. Trade Openness variable for India indicates intent to open for global market hence, the variable is expected to carry a positive sign.

H_{03}: Openness (Trade) of India does not affect India's trade.

H_{a3}: Openness (Trade) of India positively affects India's trade

Similarly, India's trading partners (TOPNj) with better trade openness are expected to facilitate India's trade in a positive way.

H_{04}: Openness (Trade) of the trading partner does not affect India's trade.

H_{a4}: Openness (Trade) of the trading partner positively affects India's trade.

5.5. Governance Indicators

Macro level governance variables have been incorporated to examine whether countries with better governance are able to reduce transaction cost, and trade-related cost. Moreover, economies with good governance are able to provide better environment for production related activities and enhance trade channels. Suntharalingam and Hassan (2016); De (2010) examined governance indicators for trade. As discussed earlier, the study incorporates six indicators of governance, namely, control of corruption; government effectiveness; political stability and absence of violence/terrorism; regulatory quality; rule of law; and voice and accountability. Firstly, Control of corruption has been incorporated as economies with no or less corruption have greater transparency. As high level of corruption has an adverse impact on the price and quantity of goods traded. The variable measures whether the government is able to strengthen business processes by exercising a control over the system in order to reduce (or curb) corruption. Secondly, government effectiveness has been captured as one of other variables to examine governance

vis-à-vis an economy. Government effectiveness refers to performance of a government in terms of civil (national/state/local administrative tasks) functioning. An economy with better government effectiveness will provide a healthy environment and good governance. Political stability and absence of terrorism have been encompassed as the third variable for studying governance in an economy. Unstable government and terrorism distort channels of trade and hence lead to increase in cost of supplying goods aboard. Stable political setup and absence of terrorism will have positive impact on international trade. The study also accounts for regulatory quality as one of the variables for governance. The variable measures the intent of the government to develop policies and procedures to support corporate and non-corporate sector. A healthy regulatory environment supplements business practices and hence has a positive impact on international trade. Rule of law has been included to study the strength of statutes/regulations/by-laws. A strong system of rules and better enforcement mechanisms in an economy supports economic/social transactions. Rule of law measures a better exchange mechanism and hence depict a positive impact on international trade. Lastly, voice and accountability are also included as a measure of governance. In an economy where individuals and organizations can hold the government accountable, such an economy becomes more transparent and consistent. Such an environment supports development leading to a positive impact on international trade. As Indian economy is performing well in all six domains, therefore, the variable for quality of governance index for India (GOVERit) is expected to carry a positive sign on India's international trade.

H_{03}: Quality of governance of India does not affect India's trade.

H_{a3}: Quality of governance level of India positively affects India's trade.

Similarly, countries trading with India and having good governance are expected to trade more with India. Therefore, quality of governance index of trading partners (GOVERjt) is expected to bear a positive sign.

H_{06}: Quality of governance of the trading partner does not affect India's trade.

H_{a6}: Quality of governance level of the trading partner positively affects India's trade.

5.6. Research Methodology

To capture the impact of explanatory variables, the study applies panel regression model (both static and dynamic) and quality of governance is captured by weighing an index. In order to form a single index for governance while losing minimal (or no) significant data we adopt principal component analyses (PCA). Steps adopted for constructing index using PCA.

a. To test if PCA can be applied on the given data set, KMO and Bartlett test was conducted. KMO measures the sample adequacy and a value of KMO above 0.6 is preferred. Bartlett's test is conducted for sphericity. The value of Bartlett's test of sphericity should be less than 0.5 (see the results for both the tests in Annexure 2).
b. The total variance and cumulative percentage of explained variance of each component is extracted. They help to explain the strength of the components.
c. The number of components with Eigen value greater than one or nearer to one was retained. Two components were found to have value greater than one and these two components were explaining 90.79% of the total variance.
d. Varimax rotation is applied to the component derived so that the actual coordination remains intact but the orthogonal basis is rotated to align the coordinated (see Annexure 1). The index for governance is prepared by using the highest value for both the components, namely, political stability (0.5075); and voice and accountability (0.8075). In order to form an index, the weights (Wi) so derived are multiplied with the value of the corresponding governance variables/indicator (Gi). And the sum of both the products is used as an index for governance ($\sum$WiGi).

The study examines the impact of explanatory variables using both static (fixed and random effects model specification) as well as dynamic panel regression analysis (Generalized method of moments/GMM) with one year lag.

5.7. Static Model Specifications

Static panel regression equation can be represented as:

$$Y_{it} = \alpha + \beta X_{it} + \epsilon_{it}$$

Where Y represents the dependent variable; X represents the explanatory variable with α as constant term and β as coefficients; ϵ_{it} as the error term; i=1…N; and t=1…T.

Static model specifications (Fixed effects and Random effects) are substantially employed to capture static panel data regression models. Fixed effects (FE) are employed in studies where explanatory variables and individual effects are correlated. FE recognizes each cross-sectional unit (country or firm or institution) as a separate entity with specific attributes of its own. Moreover, the constant term(α_i) is entity specific. So fixed effect can be expressed as:

$$Y_{it} = \alpha_i + \beta X_{it} + \epsilon_{it}$$

Where α_i is time invariant individual effects and entity specific constant term.

Baltagi (2001) finds fixed effects suitable for studies having countries (or firms or entities) as focal point. Whereas random effects (RE) are suitable for studies where individual or entity effects are not assumed and variables are not correlated with individual effects. In case of RE, the constant term(α_i) is not correlated with cross sectional effects; and μ_i is random effects error term which is not correlated with explanatory variable. Random effects model specification can be expressed as:

$$Y_{it} = \alpha + \beta X_{it} + \mu_i + \epsilon_{it}$$

Hausman test is broadly employed to select between FE and RE specifications. For our study, Hausman test supports FE model, therefore, result generated by fixed effects are employed for interpretation. A number of studies have employed static panel regression model to examine the explanatory variables. Kundu (2015) applies static panel to explain the trade balances of Bangladesh with BRICS. Bhasin and Manocha (2014) employed static regression model to examine the impact of globalization on India's exports.

5.8. Dynamic Panel Regression Model

A number of studies have not only examined static panel regression but have also employed dynamic panel regression model to overcome the problem associated with serial correlation, heteroskedasticity and endogeneity for some of the explanatory variable. Tripathi and Leitão (2013); Zarzoso, Felicitas, and Nicholas (2006); Bassem and Maktouf (2014) employ both static and dynamic methodology to capture the results for the explanatory variables. Our study also examines explanatory variables using GMM-differenced and GMM-system for dynamic model panel specifications. Though FE model helps to address country specific effects but in order to administer the issue of heteroskedasticity, serial correlation and endogeneity (of some explanatory variables) GMM models are extensively employed. A dynamic model employs lag of dependent variable (ρY_{it-1}) as one of the explanatory variable and the equation can be expressed as:

$$Y_{it} = \alpha_i + \rho Y_{it-1} + \beta X_{it} + \mu_i + \epsilon_{it}$$

First differenced GMM was suggested by Arellano and Bond (1991) whereas GMM system was addresses by Arellano and Bover (1995) and Blundell and Bond (1998). Dollar and Kraay (2004), Fukase (2010) argued that first differenced GMM emphasizes on within country effects in a better way by taking difference of lag of dependent variable as one of the explanatory variables. The equation for GMM first differenced eliminates individual effects via difference and can be represented as:

$$\Delta Y_{it} = Y_{it} - Y_{it-1} = \rho \Delta Y_{it-1} + \beta \Delta X_{it} + \Delta \mu_i + \epsilon_{it}$$

However, Blundell and Bond (1998) suggested that GMM-system estimation is a better procedure in case the data is highly persistent as in case of export/trade/investment. Moreover, GMM-system takes care of both lag of dependent variable as well as levels equations. Our study examines the result for both GMM-differenced (GMM-DIF) and GMM-system (GMM-SYS) to study the impact of macro governance variables on India's bilateral trade in Asian region. Both GMM models employ lag of dependent variable as one of the explanatory variables in order to capture the impact of the one-year lag of trade flows on the dependent and also to control the dynamics in the equation. The trade flows for the current year are affected by the flows of trade in the last year/years and thus may cast a significant and positive impact on the flow of trade in the current year. In order to employ GMM system and GMM differenced, two prior evaluations are required. First, we need to check the overriding condition of the instrument (to establish the validity of instrument) and either Sargan test or Hansen test is conducted for the same. Secondly, serial correlation check is required. Sargan test for two-step GMM –DIF and GMM-SYS with one year lag supported the use of instruments for examining the explanatory variables and no evidence for presence of second order serial correlation was seen for both GMM models (reported in Table 2). Baltagi (2005) suggested that the results for one-step and two-step are both consistent but later is more asymptotically efficient. Hence, our study examines the variables using fixed effects specifications, first differenced GMM (two-step) and system GMM model (two-step).

Table 2. Panel regression results (using fixed effects, first differenced GMM, system GMM estimation) with India's bilateral trade as the dependent variable.

Variables	Fixed Effects		GMM-DIFF		GMM-SYS	
LnTRADEijt	**Coef. (Std. Err.)**	**p-value**	**Coef. (Std. Err.)**	**p-value**	**Coef. (Std. Err.)**	**p-value**
LaggedLogTRADEijt	----	----	0.715 (0.041)	0.000	0.736 (0.448)	0.000
LogGDPj	-1.133* (0.291)	0.0000	-0.386 (0.503)	0.442	-0.174 (0.459)	0.705
LogTOPENj	0.003 (0.064)	0.9610	-0.021* (0.006)	0.000	-0.031** (0.015)	0.030
LogGOVERj	5.399* (2.263)	0.0170	2.347 (2.176)	0.281	0.263 (2.413)	0.913
LogGDPi	2.193* (0.235)	0.0000	0.411 (0.356)	0.247	0.226 (0.344)	0.512
LogTOPENi	2.131 *(0.2)	0.0000	0.809* (0.078)	0.000	0.728* (0.096)	0.000
LogGOVERi	8.064 (10.286)	0.4330	5.929* (1.105)	0.000	9.507* (1.075)	0.000
Cons	-6.811 (12.705)	0.5920	-10.11* (3.575)	0.005	-12.22* (3.968)	0.002
Number of observations	460		414		437	
Number of countries	23		23		23	
Number of instruments			178		196	
R-square(within)	0.6231					
Hausman Test	Prob>chi2 =0.0000					
Sargan Test			$\chi2 = 20.605$ (1.000) df=170		$\chi2 = 20.546$ (1.000) df=188	
Arellano-Bond test for Ar(1)			-1.839 [0.0659]		-1.8351 [0.0665]	
Arellano-Bond test for Ar(2)			0.84193[0.3998]		0.83065 [0.4062]	

Note: 1. p-values (heteroskedasticity corrected) are in round brackets.
2. p-values (heteroskedasticity corrected) are in round brackets.
3. The null hypothesis that each coefficient is equal to zero is tested using two-step robust standard error.
4. AR1 and AR2 are tests for first-order and second–order serial correlation in the first-differenced residuals, asymptotically distributed as N (0, 1) under the null hypothesis of no serial correlation. They are based on the efficient two-step GMM estimator for both first differenced GMM and system GMM and p-value appears in square bracket for serial correlation.
5. Sargan is a test of the over-identifying restrictions, asymptotically distributed as χ^2, under the null of instruments' validity (with two-step estimator).
6. * and ** indicate statistical significance at 1 and 5 percent levels respectively.

6. RESULTS AND ANALYSIS

The result for impact of governance on India's bilateral trade using fixed effects, two-step GMM first differenced and two-step GMM system are depicted in Table 2.

The outcome for one year lag of trade is found to be highly significant and positive using both first differenced GMM and system GMM. The bilateral trade with the partner nation is definitely acting as a significant factor in fetching trade in successive year. The results for GDP of the home country (India) are found to be highly significant and positive for fixed effect model (positive but not significant for both GMM models) indicating a larger economic size of India is definitely acting as a bigger regime of production (for exports) and larger market (for imports) and that acts as a significant factor for India's bilateral trade.

The results for GDP of host country are found to be negative and significant (only for fixed effects). Moreover, the results for trade openness of India's trading partner are found to be negative and significant for both GMM-DIFF and GMM-SYS models. The results for GDP of host and Openness for host are against the existing norms for trade related studies; might be the sample size covers only Asian economies, therefore, such results would have been generated. Another reason for such results might be attributable to specialization/diversification. A partner country with larger economic size generally has larger regime of specialization/diversification and hence reduces trade (Salim, Mahmood, & Sector, 2014) with developing economies like India. The coefficient for trade openness of home country (India) is found to be significant and positive (for all models) indicating India's liberal trade policies are helping India to fetch international trade. Talking about the variable of our interest, the results for governance index for host economies is found to be positive and highly significant using fixed effects but the result for other two models is positive but not significant; this indicates that economies having better governance in terms of corruption control; political stability; regulatory quality; better accountability and rule of law are offering more trade to India. Even, the result for governance index for India is found to be positive for all three models but significant only for GMM-DIFF and GMM-SYS. The study found that liberal trade policies of India; larger economic size of home country; and good governance of both India and host economies are significant determinants of India's trade.

7. CONCLUSION

The study attempts to empirically examine the impact of quality of governance on India's trade using static and dynamic panel regression model. The result indicates that liberal trade policies and better governance are helping India to trade more. As a large economy in term of economic size, India is able emerge as a bigger market for trade. Moreover, post liberalization India is emerging as a more mature and larger market due to strong regulatory setup, laws to minimize corruption, better state accountability and strong rule of law for administrators. The study also indicates countries with better domestic governance offer a better market. And variables such as corruption control; political stability; control over terrorism; regulatory quality; and rule of law act as significant determinants in facilitating trade and trade channels for India. Better quality of governance has supported India in reducing transaction cost and better distribution of resource which in turn has supplemented trade.

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ANNEXURES

Annexure 1. Principal component (Varimax Rotated Matrix).

Number of Observations= 384			
Number of components= 2			
Trace= 6			
Rotation: Orthogonal varimax (Kaiser off) Rho= 0.9079			
Component	**Variance**	**Proportion**	**Cumulative**
Comp1	4.27308	0.7122	0.7122
Comp2	1.1745	0.1958	0.9079
Variable	Comp1	Unexplained	
Control of corruption	0.4525	0.08467	
Government Effectiveness	0.4272	0.06868	
Political Stability	0.5075	0.1244	
Regulatory Quality	0.3947	0.1287	
Rule of law	0.4412	0.04753	

Annexure 2. Results for KMO and bartlett's test of sphericity.

Bartlett test of sphericity		
Chi-square	=	2843.790
Degrees of freedom	=	15
p-value	=	0.000
H0: variables are not intercorrelated		
Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy		
KMO	=	0.849