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Institutions or Geography: What Explains More to Trade Policy for Developing Nations?

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Abstract

This study attempts to develop a trade policy–growth nexus using political economy approach for world developing nations. Trade policy has been assumed as endogenous variable in whole analysis which means that many exogenous factors can have the effect on the policy choices in nations. Seven trade policy measures including policy based, outcome based, composite indices, and market based measures, have been covering the time span 1995-2013. Dynamic Panel Model has been estimated using an instrumental variable technique i.e. System Generalized Methods of Moment (SGMM). Findings of the model are confirming the importance of institutions and governance over geography in case of each trade policy proxy for developing nations. The policy recommendation on the basis of all these results is that neoliberal policies can be decisive for developing nations if integrated with good governance along with various political and economic institutions.

Key Words: Trade policy, Political Economy, Bureaucracy, Geography, Panel Model

1: Introduction:

As trade is considered one of the most important ingredient for economic development (Krueger; 1997), therefore there has always been tremendous efforts of trade economists to investigate those factors which can hinder or facilitate this important sector of the economy. Today policy makers are not only interested in Trade-Growth nexus rather they are trying to focus 'Trade-Inclusive Growth' path which is a dire need of time for the whole world especially developing countries. (Lederman; 2011, Hoekman; 2012, Kumah & Sandy; 2013 and Winters ; 2014). Since 1990s developing nations are involved in the exercise of liberalizing their economies following the agenda of 'Washington Consensus'. Inception of WTO also provided its principles for both developed and developing nations in making trade sector more integrated and participatory in any economy. Apparently it seemed that efforts were made more for developing countries to have more access to markets through various tools and mechanisms. Doha Development Round was the fittest example of this concern but it remained fruitless on many political grounds by developed countries showing that trade policies are not only related to

economic factors only rather many political concerns are involved in extracting their full benefits. All this made the policy makers and economists to think beyond this old perception that the only mechanism of progress can be 'Getting prices right' which claims that market imperfections are actually the main reason of lower economic outcome of any policy. This debate led to a paradigm shift in policy making that made economists to take into consideration political landscapes of nations for designing and implantation of policies. And focus diverted towards 'Getting institutions right' (Rodrik; 2004). Institutions can be political, economic, social, or legal etc. History has shown the relationship between institutions and trade in the form of commercial revolution during 11^{th}-14^{th} century which gave rise to the reemergence of trade between Mediterranean and European nations (Lopaz; 1976). Past literature also confirms that all these institutions play very important role through providing strategic environment to policy makers and interest group in the formulation of policies in an economy. It is believed that many institutions govern trade sector in any nation. And these institutions are considered as the product of social and political set up of any nation. Moreover it has also been observed that these the institutions which empower the rulers of nations to use coercive powers for their economic gains. Therefore it can be concluded that political and economic exchanges have always been involved for trade as a major objective among nations.

Keeping in view all the above discussion, this study attempts to relate not only trade policy to economic growth rather it aims to incorporate the effects of all these institutional factors in trade policy making and then building a link between trade policy and growth. Many authors in past (North; 1990, Olson; 1993, Dawson; 1998, Hall and Jones; 1999, Kaufmann and Kraay; 2002, Parente and Prescot; 1999) have concluded that institutions are actually liable for the differences in the economic gains among nations. But in their analysis, either a direct link between growth and institutions was being made by capturing the endogeneity of institutions (Acemoglu et al.; 2005) or the relation has been checked directly from policy towards growth without capturing the endogeneity of these policies. To fulfill this gap in literature, this study has tried to address the issue of endogeneity of trade policy not only through geography as has been the practice in past but also using different dimensions of a nation's institutional framework. These dimensions include political, economic, governance and the extent of institutional integration/openness with the whole world. In short it discusses the Trade policy-Growth analysis from a new political economy perspective by employing a new estimation technique and not relying on Gravity model for solving this endogeneity problem. Moreover this study is also of great importance in its nature because for the first time such analysis has been made by covering maximum number of developing nations because at present times this region is considered to have institutional deficiencies and these are believed to be the major cause of their low economic performance. Political analyst argues that these institutional differences actually were responsible for turning Washington Consensus (1990) agenda (Liberalization, Privatization, Stabilization) into Washington Confusion for the world economies (Rodrik, 2006).

2. Literature Review

Literature shows a mix picture of the relationship between trade and growth. Lucas (1988) and Grossman and Helpman (1991) gave an idea that it can go either way. According to researchers, this discrepancy can be due to the endogeneity of trade policy

measures which has not been focused much in past analysis. Frankel and Romer (1999) for the first time and then following him Wacziarg et al. (2005) tried to purpose a methodology to handle this problem by using Gravity model. But in that model the endogeneity of trade policy was proposed to capture only through geographical measures like distance, landlockedness etc. Many other important factors have been ignored for a long period of time. Here is a brief literature review showing the relationship among trade, institutions and economic performance.

Milgrom and North (1990) highlighted the importance of institutions in the revival of trade. They based their view on the proposition that as trade activity expands among nations then it becomes difficult for 'merchants' to remain well informed about the behaviors of their partners. For this purpose, an essential need of designing institutions arises which can reduce the chances of cheating among traders. They solved this problem by proposing an idea that if in a society law and order situations are controlled through better performance of elected judges then a wave of 'trust' will help traders to involve themselves bilaterally into trade agreement because of no fear of breaking promises and an effective reputation of system will help in enhancing trade relations. This law enforcement will promote contract enforcement and less chances of uncertainty (cheating in making bilateral exchanges) will be in economic environment. And traders will be well informed with the help of such institutions and transaction costs in knowing the past behavior and reputation of other trade partner will also come down due to impartial behavior of judges.

Grief (1992) described that trade is not only being determined by endowments, technology and preferences rather this is the outcome of many political and economic institutions. Following the approach of Williamson (1985), he concluded that trade across borders depends on political and economic exchange relations among nations. And these exchange relations are governed by institutions. And in this way along with the above three mentioned factors responsible for trade, institutions has been regarded the foremost important factor in case of trade policy.

Ng and Yeats (1998) related governance and trade policy to the economic performance of Sub Saharan African nations. Their results showed that nations internal structural policies specially trade policies and governance structure explain more than sixty percent variation in the economic performance of these developing nations. And if nations are being restricted by international organization for having access to their economies then such losses can be overlooked by introducing more efficient domestic policies. Moreover the speed of convergence towards integrated world is very high for poorer nations as compared to other nations.

Jansen and Nordas (2004) associated institutions with trade flows and trade policies but not taking using trade policy endogenous. Using governance indicators as the proxy for institutions they found positive impact of institutions on trade flows and observed no statistically significant impact of domestic tariff. They proved that institutions have not only direct but also indirect impact on trade reforms in nations through increasing the actual flow more after reducing tariff rates. And according to them, control of corruption is one of the more important institutional proxies in improving the effect of trade reforms.

Giavazzi and Tabellini (2004) also made a link between trade reforms and political reforms. They found that after 4 years of democracy in a nation, the probability of a

nation to be open to international trade increases 30 percentage points more as compared to the time before democratization.

Basu (2008) connected development with economic policy, institutions and geography by developing different institutional indices like social, economic and political institutions, the results showed that that the role of institutions is more strong in case of any development perspective than economic policy and geography. But here in this analysis again the policies were not taken as endogenous and a direct link has been developed in model specification.

Kourtellos et al (2010) also tried to be a participant of the debate whether institutions rule over geography in explaining the long run economic performance or vice versa. Their study confirmed this fact that quality of institutions actually determines the role of both variables. They found that for low income nations, one standard deviation improvement in quality of institutions can improve their long run economic performance by 3.3 standard deviations point.

Li (2013) recently worked on political economy of NTMs and captured the endogeneity of NTMs using various institutional variables with the help of 2SLS approach. He found that the relationship between various NTMs and maximum residue limit (protectionism level) is sensitive to the inclusion and exclusion of political institutional variable.

Francois and Manchin (2013) in their analysis of North-South bilateral trade flows found that institutional quality of the regions is one of the most important factors for exporters to make trade agreements among nations because it is believed that better institutions help in reducing transaction costs.

Zhao and Zhao (2013) also proved the hypothesis that institutional change brings economic growth initially proposed by North (1990) for Chinese economy. They claimed that enforcement of property rights is an important institutional change in the progress of China and rejected this worldly opinion that Chinese success is a puzzle but not a miracle.

Recently Bown (2014) relates different trade policy instrument choices to the institutional aspects of international trade organizations on trade flows of the world. He concluded that all sort of agreements unilateral, bilateral or multilateral, all are the result of politico-economic vested interests and only tariff reductions cannot assure the openness of any trade regime in present times.

Assane and Chiang (2014) by extending gravity model have also tried to show that poor performance of economic institutions along with more restrictive trade policies are responsible for lower bilateral trade among Sub Saharan African nations.

2.1 Objective of the Study

To examine what explains more to the endogeneity of trade policy in Trade policy-Growth analysis for developing countries?

2.2 Hypothesis

- **H_1**: Institutions explains more to trade policy as compared to geography in Trade policy-Growth analysis for developing nations.

4. Methodology

4.1 Model Specification:

The empirical model used in this study is as follows:

$$y_{i,t} = \alpha + \beta y_{i,t-1} + \gamma TP_{i,t} + \phi X_{i,t} + \varepsilon_{i,t}$$

Where $y_{i,t}$is the GDP growth rate of economies and $y_{i,t}$ is its lag value which shows that the model is dynamic in its nature. $TP_{i,t}$ is referring to various measures of trade policy or it can be said that it's showing a set of proxies used for trade policy. $X_{i,t}$ is the vector of control variables which include inflation, size of country, health, employment level, globalization and infrastructure. $\varepsilon_{i,t}$is the overall error term with the assumption that with $E(\varepsilon_{i,t}) = 0$ for all i and t. Dynamic model has been used because of the reason put forward by many authors (Bond (2002); Baum, (2006); Roodman, (2009); and Baltagi, (2008) that in case of large N and small T such model specification helps in reducing panel bias. Moreover problem of endogeneity can easily be solved through dynamic models as compared to static model. And in our case trade policy has been used as the endogenous variable and its endogeneity has been aimed to capture through various institutional variables. That is the reason choice of dynamic model fits the data analysis. Moreover purpose of the study is to see both the short run and long run effect of trade policy variables on the economic performance of the country, such models help in achieving this objective as. First of all Pooled OLS estimation has performed but poolability test showed that it is not suitable to pool the dataset. Moreover, results also showed the presence of hetroskadasticity in the model due to heterogeneity in panel. To overcome this problem, panel fixed effect technique has been applied. But still serial correlation and hetroskadasticity is being found in post estimation results. To handle these two problems, System Generalized Methods of Moments (SGMM) technique has been considered. Because it is believed that it is an efficient estimator when data suffers from hetroskadasticity problem (Baum; 2003). Hausman test between OLS and GMM also confirms the validity of later technique. Moreover in political economy empirical literature, it has also been observed that dynamic panels usually have to face usually bias in estimation. Therefore SGMM is being suggested as the best remedy to be used for addressing this bias. This technique was originally presented by Holtz-Eakin et al. (1988). But with the passage of time, it got recognition by the name of Arellano and Bond (1991), Arellano and Bover (1995), and Blundell and Bond (1998). Moreover SGMM helps in handling those variables which have random walk (Bond; 2002, Roodman; 2006, 2007, Baum; 2006) in their trend. And as the model specification used in this study includes mostly macroeconomic variables so that's why SGMM approach can be used with more precision. More over it has been observed that small panels can face downward bias (Baltagi; 2008, p. 154) in standard error estimates but this bias can be removed in SGMM using two step procedures with option "small" which will implement Windmeijer correction and generate more appropriate estimates. Moreover the pre-requisite for the validity of instruments requires that there must be first order autocorrelation (AR1) in first differenced residuals but not second order serial correlation (AR2) in errors. However lower and upper bound provided by lagged dependent variable in two models i.e. Pooled OLS and Fixed Effects can be helpful in deciding whether GMM estimation is valid or not. This criterion tells us that the value of lagged dependent variable estimated through GMM must fall in this bound of values.

$LDV_{FE} < LDV_{GMM} < LDV_{OLS}$

This coefficient of LDV also indicates the convergence of model but the condition is this that its value should be less than unity. All these points are required for the validation of GMM estimator. So far validity of entire instruments has been discussed by considering Hansen J-test but validity of additional instruments like in levels, differenced and IV instruments is also important. For this purpose Difference-in-Sargan/Hansen test has been proposed. It is also recognized as C-test (Baum, 2006; Roodman, 2006). This test helps in evaluating the validity of subset of instruments in SGMM estimation or in other words a test for their exogeneity. Optimal number of instruments are obtained by using second lag (2 2) suggested by Roodman (2006). Joint significance test of model has been tested by F-Test. Its null hypothesis states that all explanatory variables are jointly equal to zero. All these requirements are being fulfilled in the estimation process of the model of this study.

4.2 Long-run coefficients measurement

In the equation of dynamic model, γ and $\emptyset$ are considered as short-run coefficients, which actually measures the immediate (within the year) response of growth rate of the economy due to the unit change in trade policy of an economy. However β in the model reports the persistence of the process. it is assumed that if this value is closer to 1 then it means the dependent variable is highly persistent. This LDV coefficient also helps in knowing the speed of long run adjustment. Therefore long run coefficients are calculated as follows:

$$\gamma / 1 - \beta$$

Following Papke and Wooldridge (2004), this has been derived from the baseline model of the study using STATA11 with the help of command “nlcom”.

5. Variables and Data Sources

Table 1: Trade Measures

MFN Tariff rate	It is taken as un weighted average of most favored nation tariff rates for all products. Source: World Bank.
Non-Tariff Barriers	It is a sub component extracted from of EFW Index under the Source: Economic Freedom Dataset 2013.
Regulatory Trade Barriers	It takes into account two important aspects: Non-Tariff barriers, and cost of importing and exporting. Source: Economic Freedom of the World 2013.
Black Market Premiums	It is also a component of EFW Index showing openness indicator. Source: Economic Freedom of the World 2013.
Freedom to Trade	It is composed of taxes on trade among nations, Regulatory trade barriers, Size of trade sector, Black market premiums Source: Economic Freedom Dataset 2013.
Trade (% of GDP)	It is defined as the sum of exports and imports of goods and services measured as a share of gross domestic product. Source: World Bank
KOF Restrictions	This covers the restrictions on trade and capital using hidden import restrictions, tariffs, and other taxes on international trade. Source; World Economic Forum's Global Competitiveness Report (various issues).
Political institutional Variables	
Political Constraints	The measure of political constraints estimates the feasibility of policy change. Source: Henisz, W. J. (2002).
Durability of Political System	It measures the number of time a political regime changes frequently. Source: Polity IV (2013)
Bureaucracy	It is defined as regulation in chief executive recruitment. Source: Polity IV (2013).
Military	"1" if the chief executives were described as officers and "0" otherwise. Source: DPI 2013.
Concentration of Political Powers in Political Parties	It includes both the concentration of powers with government and opposition. It is meseaured as the sum of the squared seat shares of all parties in the government and opposition. Source: DPI 2013.
Openness Indicators	
Political Openness	It measures the political integration through the role of Embassies, and Membership of International Organizations, Source : KOF Globaliztion Index by Dreher, Axel, Noel Gaston and Pim Martens (2008).
Cultural	It reports cultural integration through the number of franchise per

Openness	capita and trade in books as per capita. Sources: KOF Globaliztion Index by Dreher, Axel, Noel Gaston and Pim Martens (2008).
Governance Indicators	
Political Stability	It reports the number of chances a government will be destabilized by politically motivated actors. Source: World Bank.
Rule of Law	It is measured by quality of contract enforcement, the working of police and courts, as well as the chances of committing crime and violence. Source: World Bank.
Geographical indicator	
Landlocked ness	A dummy variable for the being land locked nation has been used for this purpose. “1” for land locked nations, “0” for non-landlocked.
Economic institutional Variables	
Legal System & Property Rights	It is one of the components extracted from EFW Index showing the Legal Structure and Security of Property Rights. Source: Economic Freedom Dataset 2012.
Financial Institutions	It is defined as domestic credit provided by the banking sector to various sectors. It has been used as the proxy for financial institutions in the analysis. Source: World Bank.
WTO	A dummy variable for the membership of WTO. “0” for non-member nations, “1” for member-nations. Source: World Trade Organization.
Macro-Economic Variables	
GDP Growth	It is annual percentage growth rate of GDP calculated at market prices at market prices using constant 2000 local currency unit. Source: World Bank.
Health	For this purpose life expectancy at birth has been used as proxy. It shows number of years an infant would live if mortality conditions remain same from the time of birth till the end of life. Source: World Bank.
Size of Country	It is measured by total population of a country which includes all residents regardless of their citizenship. Its natural logarithm has been taken for final estimation. Source: World Bank.
Infrastructure	It is being proxied by telephone lines. These include fixed telephone lines that help to connect the subscriber's terminal to the public telephone network Source: World Bank.
Employment	It is measured as employment to population ratio for the age 15 and above. Source: World Bank.
Inflation	Consumer price index has been used for measuring this variable. Source: World Bank.

6. Estimation of Results

This section contains the estimation results of the model given above. Assuming various intervening factors affecting trade policy like various institutional and fixed factors, the nexus between trade and growth of developing nations has been developed. Each trade policy proxy is being run by five times using different institutional feature which can affect the trade policy decisions. Controls are also being added in each model. These are health, size of country, infrastructure, employment and inflation. Results are not reported of these variables but can be provided on request.

Table: 1.1: Trade Policy= Tariff Barriers

Variables	OLS	FE	SGMM-2	SGMM-2	SGMM-2	SGMM-2	SGMM-2
			Pol. Institutions	Openness	Eco. Institutions	Geography	Governance
Constant	2.3395 (0.116)	-38.985 (0.068)	6.3541*** (0.000)	12.5087*** (0.000)	-2.6045*** (0.001)	2.6170*** (0.002)	.8868 (0.100)
$Growth_{t-1}$	.4363*** (0.000)	.2832*** (0.000)	.3968*** (0.000)	.3696*** (0.000)	.3928*** (0.000)	.3154*** (0.000)	.4177*** (0.000)
Trade Policy (SR)	**-.0138 (0.375)**	**-.0003 (0.990)**	**-.0271*** (0.000)**	**-.0804*** (0.000)**	**-.0638*** (0.000)**	**-.0470*** (0.000)**	**-.0231*** (0.000)**
(LR)			**-.0449*** (0.000)**	**-.1276*** (0.000)**	**-.1052*** (0.000)**	**-.0686*** (0.000)**	**-.0398*** (0.000)**
controls	yes	yes	yes	yes	yes	yes	yes
Hausman test for OLS & GMM							
Chi square			359.14***	167.88***	225.62***	63.72***	202.13***
observations	1494	1494	1494	1494	1494	1494	1494
Countries	83	83	83	83	83	83	83
Instruments			77	74	71	70	75
F-test			22751.43 (0.000)	20910.07 (0.000)	10049.48 (0.000)	10301.74 (0.000)	33295.60 (0.000)
AR(1)			0.000	0.000	0.000	0.000	0.000
AR(2)			0.342	0.766	0.573	0.233	0.699
J-Test			0.337	0.213	0.188	0.278	0.205
C-Test							
GMM			0.989	0.983	0.985	0.998	0.972
IV			0.976	0.337	0.774	0.836	0.744

Note: Three methods of estimation have used. Ordinary Least Squares (OLS), Fixed Effects Model (FE), and System Generalized Method of Moments (SGMM). In the case of two-step GMM, the Windmeijer (2005) finite sample correction for standard errors is employed. *, ** and *** denote significance at the 10%, 5% and 1% level, respectively. The row for the Hansen/ J-test reports the p-values for the null hypothesis of instrument validity. The values reported for the Diff-in-Hansen/ C- test are the p-values for the validity of the additional moment restriction necessary for system GMM. The values reported for AR(1) and AR(2) are the p-values for first and second order autocorrelated disturbances in the first differences equations

Table: 1.2 Trade Policy= Non-Tariff Barriers

Variables	OLS	FE	SGMM-2	SGMM-2	SGMM-2	SGMM-2	SGMM-2
			Pol. Institutions	Openness	Eco. Institutions	Geography	Governance
Constant	1.6816	-46.205	10.535***	22.6831***	-4.0612***	10.0619***	1.6606***
	(0.316)	(0.037)	(0.000)	(0.000)	(0.001)	(0.000)	(0.003)
$Growth_{t-1}$	.4465***	.2903***	.3978***	.3965***	.4004***	.3501***	.3963***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Trade Policy	.0946	-.0404	-.4156	-.7360	-.6935	-1.0504	-.7113
(SR) NTB	(0.364)	(0.820)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
(LR)			-.6902	-1.2197	-1.1569	-1.6165	-1.1784
			(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Controls	yes	yes	yes	yes	yes	yes	yes
Hausman test for OLS & GMM							
Chi square			304.49***	700.46***	799.38***	193.78***	301.33***
observations	1386	1386	1386	1386	1386	1386	1386
Countries			77	77	77	77	77
Instruments			76	74	71	70	75
F-test			61764.08	17554.64	1901.35	17364.83	12319.91
AR(1)			0.000	0.000	0.000	0.000	0.000
AR(2)			0.225	0.666	0.265	0.436	0.334
J-Test			0.296	0.252	0.175	0.233	0.276
C-Test							
GMM			0.989	0.986	0.990	0.988	0.994
IV			0.939	0.790	0.217	0.868	0.774

Note: Three methods of estimation have used. Ordinary Least Squares (OLS), Fixed Effects Model (FE), and System Generalized Method of Moments (SGMM). In the case of two-step GMM, the Windmeijer (2005) finite sample correction for standard errors is employed. *, ** and *** denote significance at the 10%, 5% and 1% level, respectively. The row for the Hansen/ J-test reports the p-values for the null hypothesis of instrument validity. The values reported for the Diff-in-Hansen/ C- test are the p-values for the validity of the additional moment restriction necessary for system GMM. The values reported for AR(1) and AR(2) are the p-values for first and second order autocorrelated disturbances in the first differences equations.

Table:1.3: Trade Policy= Regulatory Trade Barriers

Variables	OLS	FE	SGMM-2	SGMM-2	SGMM-2	SGMM-2	SGMM-2
			Pol. Institutions	Openness	Eco. Institutions	Geography	Governance
Constant	3.0334	-33.626	3.3909	18.374	5.4396	.6104	4.6287
	(0.042)	(0.115)	(0.000)	(0.000)	(0.000)	(0.501)	(0.000)
$Growth_{t-1}$	.4343	.2818	.3734	.3714	.4081	.3348	.4117
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Trade Policy	**-.2009**	**-.2783**	**-.6392**	**-.8097**	**-.7614**	**-1.0285**	**-.9068**
(SR)	**(0.008)**	**(0.047)**	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
(LR)			**-1.0202**	**-1.2884**	**-1.2866**	**-1.5462**	**-1.5414**
			(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Controls	yes	yes	yes	yes	yes	yes	yes
Hausman test for OLS & GMM							
Chi Square			233.69***	31.84***	186.82***	145.74***	261.74***
observations	1494	1494	1494	1494	1494	1494	1494
Countries			83	83	83	83	83
Instruments			77	74	71	70	75
F-test			23787.45	32451.71	27290.25	12583.38	23744.27
AR(1)			0.000	0.000	0.000	0.000	0.000
AR(2)			0.181	0.770	0.861	0.725	0.640
J-Test			0.261	0.170	0.198	0.202	0.147
C-Test							
GMM			0.985	0.963	0.994	0.992	0.938
IV			0.928	0.516	0.579	0.986	0.240

Note: Three methods of estimation have used. Ordinary Least Squares (OLS), Fixed Effects Model (FE), and System Generalized Method of Moments (SGMM). In the case of two-step GMM, the Windmeijer (2005) finite sample correction for standard errors is employed. *, ** and *** denote significance at the 10%, 5% and 1% level, respectively. The row for the Hansen/ J-test reports the p-values for the null hypothesis of instrument validity. The values reported for the Diff-in-Hansen/ C- test are the p-values for the validity of the additional moment restriction necessary for system GMM. The values reported for AR(1) and AR(2) are the p-values for first and second order autocorrelated disturbances in the first differences equations.

Table: 1.4: Trade Policy= Black Market Premium

Variables	OLS	FE	SGMM-2	SGMM-2	SGMM-2	SGMM-2	SGMM-2
			Pol. Institutions	Openness	Eco. Institutions	Geography	Governance
Constant	-1.2243 (0.464)	-39.775 (0.060)	6.1555 (0.000)	14.592 (0.000)	-.2872 (0.847)	1.0683 (0.000)	-2.6991 (0.000)
$Growth_{t-1}$	.4248 (0.000)	.2836 (0.000)	.3825 (0.000)	.3675 (0.000)	.3830 (0.000)	.3295 (0.000)	.3652 (0.000)
Trade Policy	**.3251**	**.2736**	**.1089**	**.2262**	**.2002**	**.1579**	**.2854**
(SR)	**(0.000)**	**(0.009)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**
(LR)			**.1763**	**.3576**	**.3246**	**.2355**	**.4497**
			(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**
Hausman test for OLS & GMM							
Chi Square			40186.9***	2621.01***	5445.92***	141.26***	484.79***
observations	1494	1494	1494	1494	1494	1494	1494
Countries			83	83	83	83	83
Instruments			77	74	71	70	75
F-test			84224.27	66061.39	31280.05	19391.11	36386.85
AR(1)			0.000	0.000	0.000	0.000	0.000
AR(2)			0.403	0.515	0.421	0.286	0.400
J-Test			0.287	0.160	0.180	0.164	0.269
C-Test							
GMM			0.998	0.994	0.999	0.994	0.999
IV			0.983	0.574	0.806	0.944	0.999

Note: Three methods of estimation have used. Ordinary Least Squares (OLS), Fixed Effects Model (FE), and System Generalized Method of Moments (SGMM). In the case of two-step GMM, the Windmeijer (2005) finite sample correction for standard errors is employed. *, ** and *** denote significance at the 10%, 5% and 1% level, respectively. The row for the Hansen/ J-test reports the p-values for the null hypothesis of instrument validity. The values reported for the Diff-in-Hansen/ C- test are the p-values for the validity of the additional moment restriction necessary for system GMM. The values reported for AR(1) and AR(2) are the p-values for first and second order autocorrelated disturbances in the first differences equations.

Table: 1.5: Trade Policy= Trade %GDP

Variables	OLS	FE	SGMM-2	SGMM-2	SGMM-2	SGMM-2	SGMM-2
			Pol. Institutions	Openness	Eco. Institutions	Geography	Governance
Constant	.8769	-36.752	2.8227	5.5187	-.0707	-1.7583	2.1820
	(0.573)	(0.081)	(0.006)	(0.000)	(0.960)	(0.231)	(0.146)
$Growth_{t-1}$	.4272	.2760	.3586	.3632	.4030	.3199	.3198
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Trade Policy	**.0081**	**.0378**	**.0301**	**.0327**	**.0396**	**.0364**	**.0439**
(SR)	**(0.001)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**
(LR)			**.0470**	**.0513**	**.0663**	**.0536**	**.0646**
			(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**
Controls	yes	yes	yes	yes	yes	yes	yes
Hausman test for OLS & GMM							
Chi Square			810.82***	502.63***	1567.09***	187.34***	811.07***
observations	1494	1494	1494	1494	1494	1494	1494
Countries			83	83	83	83	83
Instruments			77	74	71	70	75
F-test			7798.08	7183.62	4290.25	11056.86	13351.70
AR(1)			0.000	0.000	0.000	0.000	0.000
AR(2)			0.992	0.561	0.723	0.469	0.993
J-Test			0.392	0.229	0.189	0.335	0.320
C-Test							
GMM			0.999	0.990	0.992	0.999	0.999
IV			0.877	0.284	0.194	0.932	0.459

Note: Three methods of estimation have used. Ordinary Least Squares (OLS), Fixed Effects Model (FE), and System Generalized Method of Moments (SGMM). In the case of two-step GMM, the Windmeijer (2005) finite sample correction for standard errors is employed. *, ** and *** denote significance at the 10%, 5% and 1% level, respectively. The row for the Hansen/ J-test reports the p-values for the null hypothesis of instrument validity. The values reported for the Diff-in-Hansen/ C- test are the p-values for the validity of the additional moment restriction necessary for system GMM. The values reported for AR(1) and AR(2) are the p-values for first and second order autocorrelated disturbances in the first differences equations.

Table: 1.6: *Trade Policy= Free to trade(composite index)*

Variables	OLS	FE	SGMM-2	SGMM-2	SGMM-2	SGMM-2	SGMM-2
			Pol. Institutions	Openness	Eco. Institutions	Geography	Governance
Constant	-1.0628	-63.348	-7.6279	4.3288	-17.099	-13.9451	-16.1481
	(0.528)	(0.003)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)
$Growth_{t-1}$	.4290	.2847	.4147	.3731	.3885	.3344	.3885
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Trade Policy	**.5438**	**1.2272**	**2.0248**	**.8860**	**1.2884**	**2.3641**	**1.9837**
(SR)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**
(LR)			**3.4595**	**1.4134**	**2.1072**	**3.5519**	**3.2440**
			(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**
Controls	yes	yes	yes	yes	yes	yes	yes
Hausman test for OLS & GMM							
Chi Square			1101.42***	182.98***	617.56***	1020.66***	651.41***
observations	1494	1494	1494	1494	1494	1494	1494
Countries			83	83	83	83	83
Instruments			77	74	71	70	75
F-test			82672.71	15737.42	23583.81	11814.89	56769.15
AR(1)			0.000	0.000	0.000	0.000	0.000
AR(2)			0.620	0.458	0.381	0.393	0.467
J-Test			0.284	0.169	0.149	0.108	0.227
C-Test							
GMM			0.998	0.997	0.993	0.963	0.997
IV			1.000	0.661	0.636	0.299	0.953

Note: Three methods of estimation have used. Ordinary Least Squares (OLS), Fixed Effects Model (FE), and System Generalized Method of Moments (SGMM). In the case of two-step GMM, the Windmeijer (2005) finite sample correction for standard errors is employed. *, ** and *** denote significance at the 10%, 5% and 1% level, respectively. The row for the Hansen/ J-test reports the p-values for the null hypothesis of instrument validity. The values reported for the Diff-in-Hansen/ C- test are the p-values for the validity of the additional moment restriction necessary for system GMM. The values reported for AR(1) and AR(2) are the p-values for first and second order autocorrelated disturbances in the first differences equations.

Table: 1.7: Trade Policy= KOF

Variables	OLS	FE	SGMM-2	SGMM-2	SGMM-2	SGMM-2	SGMM-2
			Pol. Institutions	Openness	Eco. Institutions	Geography	Governance
Constant	1.8600 (0.235)	-35.833 (0.097)	7.4519 (0.000)	8.3985 (0.000)	-2.4507 (0.063)	2.0750 (0.042)	-.4367 (0.620)
$Growth_{t-1}$	.4306 (0.000)	.2848 (0.000)	.4232 (0.000)	.3623 (0.000)	.4081 (0.000)	.3386 (0.000)	.4046 (0.000)
Trade Policy (SR)	**.0252 (0.008)**	**.0179 (0.350)**	**.0898 (0.000)**	**.0564 (0.000)**	**.1514 (0.000)**	**.0854 (0.000)**	**.0766 (0.000)**
(LR)			**.1557 (0.000)**	**.0885 (0.000)**	**.2559 (0.000)**	**.1291 (0.000)**	**.1288 (0.000)**
Controls	yes	yes	yes	yes	yes	yes	yes
Hausman test for OLS & GMM							
Chi Square			491.56***	174.82***	950.71***	237.50***	475.19***
observations	1455	1455	1455	1455	1455	1455	1455
Countries			81	81	81	81	81
Instruments			77	74	71	70	75
F-test			62307.44	20307.98	8036.51	14654.41	64206.19
AR(1)			0.000	0.000	0.000	0.000	0.000
AR(2)			0.604	0.529	0.700	0.539	0.650
J-Test			0.271	0.220	0.203	0.161	0.229
C-Test							
GMM			0.965	0.977	0.989	0.961	0.979
IV			0.500	0.454	0.981	0.876	0.446

Note: Three methods of estimation have used. Ordinary Least Squares (OLS), Fixed Effects Model (FE), and System Generalized Method of Moments (SGMM). In the case of two-step GMM, the Windmeijer (2005) finite sample correction for standard errors is employed. *, ** and *** denote significance at the 10%, 5% and 1% level, respectively. The row for the Hansen/ J-test reports the p-values for the null hypothesis of instrument validity. The values reported for the Diff-in-Hansen/ C- test are the p-values for the validity of the additional moment restriction necessary for system GMM. The values reported for AR(1) and AR(2) are the p-values for first and second order autocorrelated disturbances in the first differences equations

5. Discussion

5.1 Model with Tariff Rate

Table 1.1 reports the result of model using tariff as a trade policy indicator. Here it can be seen that five various models have been run using various sets of institutional and geographical factors for capturing the endogeneity of trade policy. The negative sign of trade policy is showing that with decreasing trade taxes, the overall economic growth is increasing in developing countries. And this magnitude gets higher both in short run and long run when endogeneity of trade policy has been captured by openness indicators

because it includes political integration and cultural interconnectedness among nation's institutions. After openness factors, the magnitude of variable is showing rise when it is instrumented with economic institutional factors. From the long run estimates, it can be seen that improvement is more in case of institutional variables as compared to other indicators. Moreover control variables are showing their signs according to theory and significance is quite high for all variables. Diagnostics of the model reports the validity of SGMM results. Hausman between OLS and GMM supports the later one as the most suitable technique for analysis. The condition of steady state can be seen from the absolute value of LDV. Similarly Hansen J-test confirms instrument validity. Orthogonality conditions through C-test for both subsets of instruments used for GMM and IV options are also leaving no sign to reject the hypothesis that these instruments are not exogenous. Probability of F-test is showing the overall joint significance of all explanatory variables of model.

5.2 Model with Non-Tariff Barriers

Now another important trade policy measure has been used for analyzing its impact on economic growth via different institutional features of an economy in table 1.2. Nature of the relationship remains the same but co-efficient in magnitude has increased drastically for all instruments which supports the theory that non tariff barriers are more restrictive than tariff barriers and their removal can be more helpful in increasing economic growth. But here it can be seen that when trade policy is being endogenized by geographical indicator then the coefficient of trade policy becomes high as compared to other institutional variables. Diagnostics proves that model is valid. Moreover other control variables are also having the expected and significant signs.

5.3 Model with Regulatory Trade barrier

This trade policy proxy is also showing negative effect on growth rates of the economies. As this sub component of EFW index is also containing a part of NTBs that's why the magnitude of trade policy coefficient are large showing a strong effect of such type of barriers on economic performance. Both short and long run estimates are negative and highly significant but more in magnitude for the model capturing the endogeneity of trade policy by geography. Diagnostics supports the validity of instruments and model overall. All these three proxies are direct measures of trade policy or sometimes called incidence based measures. Such policy measures affect directly the economic performance. Now the remaining analysis is based on the outcome based measures. In this respect, firstly black market premium has been used.

5.4 Model with Black Market Premium

Black market premium is also considered as one types of trade restrictiveness measure. An economy is to be called more open if it is showing less control on foreign exchange market or in other words less capital controls leads to more economic activity. And lower level of premium increases the degree of openness in an economy. Data set also reports that the discrepancy between black market and official exchange rates is decreasing in developing nations which is showing movements towards more open exchange markets. So the proposed relationship between BMP and growth is assumed to be positive. From the table 1.4, it can be seen that this type of reform is contributing positively in growth when instrumented with different institutional variables. Or in other words less restrictive trade barriers in the form less controls on foreign exchange markets are growth

enhancing. Here again models instrumented with institutional and governance factors are showing high magnitude of trade policy variables as compared to model coalesced with geography. All diagnostics are showing the validity of the model.

5.5 Model with composite index

Now another proxy variable for trade policy has been examined for its effect on the economic performance of developing nations under their institutional frame work. This is actually a composite index showing the extent of overall openness in a country using tariff, non-tariff, and capital control. From the table 1.5, it can be seen that coefficients in both short and long run are showing positive and highly significant results. But the main thing to be focused that the magnitude of trade policy proxy has increased much more as compared to other outcome based measures. But the model with geographical indicator is showing high value as compared to other institutional-coalesced model with trade policy. All this shows that whenever NTBs are a part of trade policy then role of geography becomes more prominent. Diagnostics again validates all the assumptions of the model.

5.6 Model with Trade/GDP

Now when trade to GDP ratio has been used as the proxy for trade policy in table 1.6 then it is also showing that more liberal policies lead to more economic growth. Relationship is being observed highly significant. But the magnitude of the coefficients has decreased to larger extent. This measure is considered by many authors atheoratical. They think that this measure doesn't not show the direct impact of trade policy only rather it is the outcome of many other policies in an economy as well. That is the reason it's showing a very little impact on economic performance of the nation. Again this proxy if instrumented with governance and economic institutional factors then effect on growth is more as compared to other models. All diagnostics are according the assumptions of the model which prove the validity of estimation procedure again.

5.7 Model with KOF sub index

This is also one of the proxies used for measuring the restrictiveness of trade barriers. KOF index tells us about the openness or extent of globalization in any economy. It includes a sub-index for trade policy. This shows the extent of openness of trade policies in the complete index. The coefficient sign is showing again the positive and significant impact of the variable of on economic growth in table 1.7. Sign of the variable is according to the theory that openness leads to more growth of nation. Now the question about instruments arise .i.e. which intervening variable is influencing more on this trade policy proxy for having its final impact on the economic performance. The role of economic institution is very prominent, and then political institutions are showing their effectiveness in making trade policy more liberal. Using this proxy as well, post estimation of all models confirms the validity of assumption.

6. Conclusion & Recommendations

As in this study, trade policy has been assumed endogenous variable which means that many exogenous factors can play their role in deciding the impact of trade policies on economic growth in nations. On the basis of findings, the study draws two broader conclusions: one is this that liberal trade policies are growth-enhancing for developing countries supporting the results of these studies (Dollar 1992; Lee 1993; Sachs & Warner

1995; Harrison 1996; Edwards 1998; Dollar & Kraay 2003; Lee et al. 2004; Wacziarg & Welch 2008; Kwon; 2013), second is whenever the endogeneity of trade policy is being captured through economic institutional factors like property rights and international organization and governance then the coefficient of trade policy on economic growth shows improvement confirming the results presented by Rose (2004), and Gil-Pareja et al. (2013). Moreover political and cultural openness is also being observed very much effective in explaining trade policies which proves that if nations are integrated more to each other then trade reforms can be more decisive to growth. Following the lines of past debate, this study also incorporated the role of geography in trade policy analysis, but only in case of non-tariff barriers this factor showed improvement while for all other cases institutional factors appeared important contributors to Trade policy- Growth nexus. In total 35 models have been run, out of these 32 confirms the hypothesis that when the role of institutional factors especially economic institutions and governance are coalesced with trade policy then economic growth shows more improvement as compared to geographically instrumented models.

This helps to conclude that for developing nations the role of economic and political institutions is more important for explaining trade policies as compared to their geography. All these findings are confirming the idea given by Acemoglu et al. (2012) recently that growth is actually the result of 'inclusive economic institutions' and 'inclusive political institutions'. In short it can be concluded that neoliberal policies can be fruitful for the growth of developing nations only if their economic and political institutions are supportive and well integrated. These results also support 'New Institutionalist' school of thought which emphasizes both the role of institutions and governance for better economic development. Therefore this study suggests to policy makers that such a policy framework should be designed for developing nation which covers both of these aspects side by side 'Neo-liberalism' along with 'New Institutionalism' in policy making.

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