The Impact of Trade Facilitation on Sectoral Export Performance: A Case for SAARC Countries

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Abstract

- The concept of trade facilitation has received a greater attention from the last few years.
- The transaction costs of trade are among the significant factors of international trade flows. Improvement in trade facilitation measures has seen very effective for lowering the trade cost and accelerating the trade performance especially in developing countries.
- World Bank (2009) pointed out that trade facilitation indicators in SAARC countries are very disappointing as compared to developed and developing countries and poor trade facilitation and fragile institutional structure seems hurdle to export growth of region.
- Previous literature focuses on aggregate data of export that could possibly mask and miss the channels between trade facilitation and export growth.
- Therefore, in order to assess effect of trade facilitation on export performance and unmask the important information for policy formulation.
- In this paper we investigate the nexus of trade facilitation and sectoral export namely primary and manufacturing export performance of SAARC countries.

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- Using gravity model augmented with trade facilitation indicators: Documents, Time and Cost per Container to exports, the PPML FE technique's results suggest that a 1% improvement in the trade facilitation indicators enhance primary exports by approximately 3.26%, 1.08 % and .06 % .
- Furthermore, findings for manufacturing sector exports are also recommend that improvement in trade facilitation levels by 1% increase manufacturing exports by approximately 2.58 and .574 %. Findings of the paper recommend that in the face of lackluster export performance of most of SAARC countries, trade facilitation reforms are recommended as an effective remedy to maintain and enhance the export performance in the region.

1.0 Introduction

- The tariff barriers have been reduced significantly over the years by Regional Trade Agreements (RTAs) and Free Tarde Agreements (FTAs) (WTO, 2013).

- Despite the benefits of declining tariff barriers, non-tariff barriers (NTBs) can also play their role. Dicken (2011) claimed that since 1970s non-tariff barriers has been increased markedly.

- According to OECD (2011), NTBs have more negative impacts than tariff barriers, because government earns revenues from tariff barriers and NTBs resulting a “dead weight loss” in the shape of welfare losses to consumers by losing employments, reducing the variety of products and decreasing the governments revenue.

- Therefore, the NTBs reducing any gains in trade due to the eliminations or reductions of tariffs. The NTBs has been addressed, through the facilitation policies.

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What is trade facilitation?

There is no specific definition of trade facilitation, and its scope varies according to the different definitions. In a narrow sense, trade facilitation is associated with the reduction of on-the-border transaction costs other than tariff cuts, which essentially involves the simplification, standardization, and harmonization of trade documents and formalities related to international trade.

- In a broader sense, trade facilitation not only comprises at-the border issues, but also beyond-the-border issues, dealing for instance with the business environment, the quality of infrastructure, strong institutions, and domestic regulations. (OECD(2005),UNTAD(2001)

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- The transaction costs of trade are among the significant factors of international trade flows, its direct and indirect cost involved in export processes is estimated up to 15 % of the value of traded goods (OECD, 2003).
- Trade facilitation is commonly seen an active tool for reducing trade and transaction related cost. It induces the FDI and rises the trade flows which increases public revenue and also increases the welfare of consumer.
- The estimated result suggest that trade facilitation increases the economic development and trade (Wilson, Man, & Otsuki, 2003).
- In case of developing countries, trade facilitation upturns the capability of these nations to become an integrated part of the global supply chain (OECD, 2005).
- According to World Bank (2009) enterprises in SAARC countries take a great deal of additional documents, time and cost obligatory to their export procedure as compared to developed economies

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For instance, SAARC economies, on average, took 33 days and 8 documents and cost 1522 US $ per container require to export a standard container of goods, whereas in OECD countries an identical good would only take 8 days to export, require four documents and cost 969 US $ per container for export (Doing Business 2015).

Motivation of the Study

- Export is one of the most important channel for growth and development of any economy.

- Historically SAARC's export performance in terms of share in global context is disappointing. The region's share in total world export is small and falling till 1990. The merchandise export of SAARC countries and its share in the world exports ,except India all other countries export's share less than one percent in the world exports.

- The share of SAARC countries in world export steadily decrease from 3.7% in 1950 to 0.8% level in 1990 and then gradually increase and reach to 2.04% level in world exports in 2014 however still its share is not very significant as compared to other developing Asian economies.

- From this background SAARC is very interesting case study; poor trade facilitation indicators and weak institutional structure seem to hurdle for facilitate the export growth in South Asian countries.

Trend of Merchandise Export (US $ millions)

Year/Country	1950	1960	1970	1990	2000	2010	2014
Afghanistan	**53** *(0.09)*	**50** *(0.04)*	**86** *(0.03)*	**235** *(0.01)*	**137** *(0.001)*	**388** *(.003)*	**535** *(.003)*
Bangladesh	**274** *(0.44)*	**325** *(0.25)*	**519** *(0.16)*	**1671** *(0.05)*	**6389** *(0.10)*	**19194** *(.125)*	**30405** *(.161)*
Bhutan	-----	------	------	**70** *(0.002)*	**103** *(0.001)*	**641** *(.004)*	**555** *(.003)*
India	**1145** *(1.85)*	**1332** *(1.02)*	**2026** *(0.64)*	**17969** *(0.52)*	**42379** *(0.66)*	**226351** *(1.479)*	**317380** *(1.676)*
Maldives	**2** *(0.003)*	**2** *(0.001)*	**4** *(0.001)*	**78** *(0.002)*	**109** *(0.002)*	**198** (.001)	**326** *(.002)*
Nepal	**1** *(0.002)*	**17** *(0.01)*	**42** *(0.01)*	**175** *(0.005)*	**804** *(0.01)*	**856** (.006)	**975** *(.005)*
Pakistan	**489** *(0.79)*	**394** *(0.31)*	**397** *(0.13)*	**5589** *(0.16)*	**9028** *(0.14)*	**21410** (.14)	**24714** *(.131)*
Sri-Lanka	**328** *(0.53)*	**385** *(0.23)*	**342** *(0.11)*	**1912** **(0.05)**	**5430** *(0.08)*	**8602** (.056)	**11200** *(.059)*
SAARC Region	**2292** *(3.71)*	**2504** *(2.00)*	**3416** *(0.94)*	**27700** *(0.80)*	**64379** *(0.99)*	**277640** *(1.814)*	**386089** *(2.039)*
Developing Economies	**21051** *(34.04)*	**31714** *(24.40)*	**60334** *(19.03)*	**840994** *(24.17)*	**2052172** *(31.84)*	**6438434** *(42.075)*	**8490932** *(44.839)*
Developed Economies	**38830** *(62.80)*	**97786** *(71.98)*	**242202** *(76.40)*	**2519069** *(72.42)*	**4238022** *(65.76)*	**8254521** *(53.944)*	**9682025** *(51.129)*

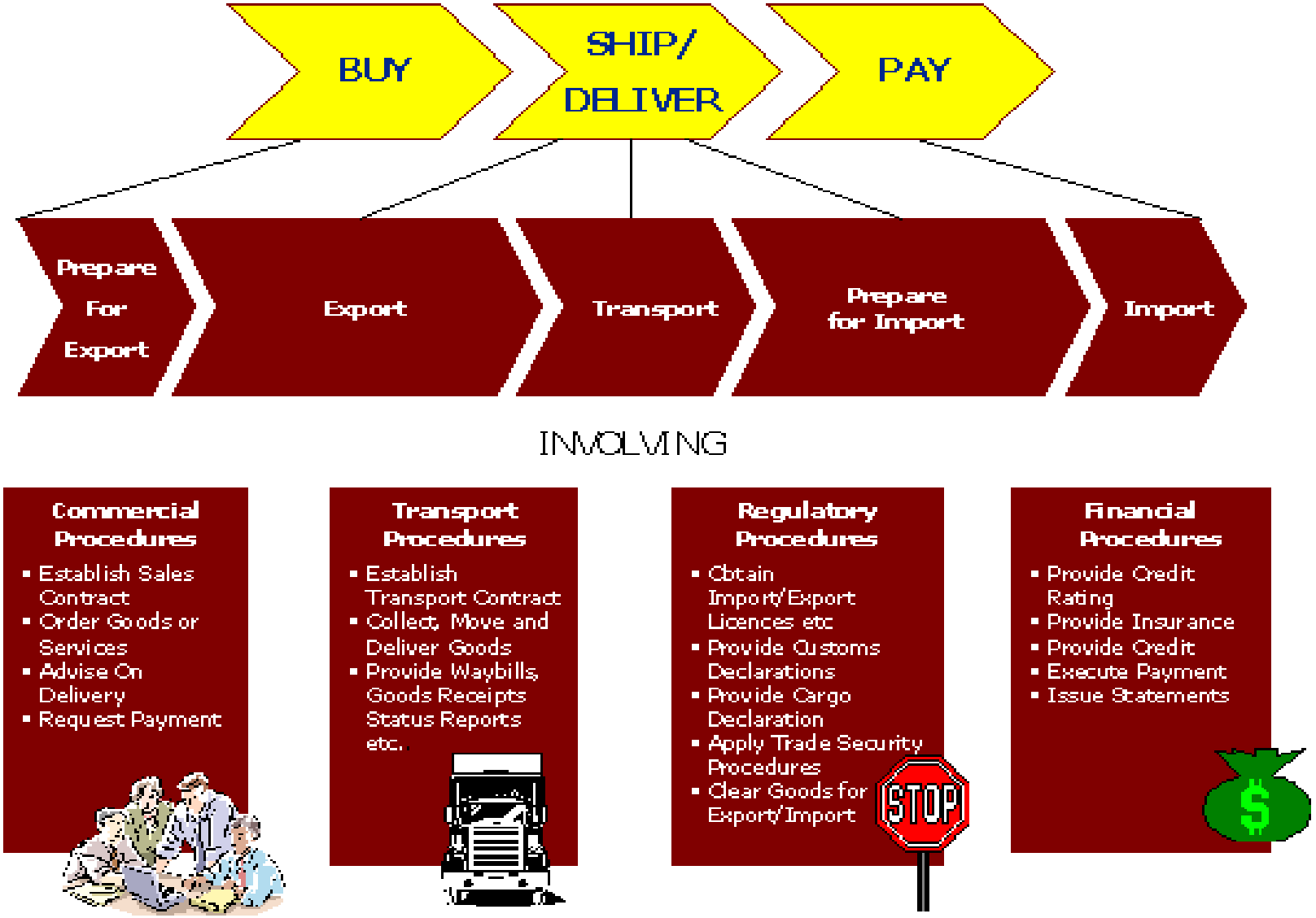
The small italic values showing Region and Country share to World Merchandise Export

- While reviewing the relevant literature some studies tried to explore the impact of trade facilitation on trade but they relied on aggregate data that could possibly mask and miss channels between trade facilitation and export growth.

- Therefore, in order to assess effect of trade facilitation on export performance and unmask the important information for policy formulation.

- In this paper we investigate the nexus of trade facilitation and sectoral export namely primary and manufacturing export performance of SAARC countries.

Trade Process



Trade Facilitation Indicators for SAARC Countries

Average Over the Period (2004-2015)

Countries	Documents to Exports *(Number)*	Time to Exports *(Days)*	Cost to Exports *(US $ Per Container)*	Documents to Imports *(Number)*	Time to Imports *(Days)*	Cost to Imports *(US $ Per Container)*
Afghanistan	10	73.8	3,257.50	10	78.3	3,425.00
Bangladesh	6	31.6	1081.8	9	42	1,344.70
Bhutan	9	38	1,702.00	11	37	2,102.00
India	7	18.7	954.8	10	24.3	1,167.30
Maldives	7	21	1,419.60	9	21	1,409.40
Nepal	11	40	2,545.00	11	39	2,650.00
Pakistan	8	22.3	649.9	8	20.2	651.3
Sri-Lanka	6.8	21.1	568.9	7.6	19.9	674.2
Average	8.1	33.3125	1,522.44	9.45	35.2125	1,677.99

Source: calculated from Doing Business (World Bank)

------ is Relatively Good Indication

-------is Relatively Bad Indication

Trade Facilitation Indicators for Selected OECD Countries and SAARC (Average over the period 2004-15)

	Documents to Exports *(Number)*	Time to Exports *(Days)*	Cost to Exports *(US $ Per Container)*	Documents to Imports *(Number)*	Time to Imports *(Days)*	Cost to Imports *(US $ Per Container)*
Denmark	4	6	751.9	3	5	701.9
Finland	4	9	554.5	5	7.7	556.5
Germany	4	8.4	869	4	7	892
Luxembourg	5	8	1,383.33	4	7	1,382.22
Netherlands	4	7	919.5	4.7	6	981.90
Norway	4	8	993.9	5	7	852
Sweden	3	9	678.6	3	6	700.2
Switzerland	3	8	1,481.70	4	8	1,444.40
United Kingdom	4	9	1014	4	7	1,154.60
United States	3	6	1039	5	5	1,261.50
Average of OECD	3.8	7.84	968.543	4.17	6.57	992.722
SAARC Average	8.1	33.3125	1,522.44	9.45	35.2125	1,677.99

Source: calculated from Doing Business (World Bank)

------ is Relatively Good Indication

-------is Relatively Bad Indication

2.0 REVIEW OF LITERATURE

Author	Published	Brief Explanation
Export volume and trade facilitation		
Wilson, Mann and Otsuki Lee and Park Djankov, Freund and Phan	2003 2007 2010	Found positive and significant impact of trade facilitation on volume of trade.
Engman Milner et al	2005 2008	suggest low middle income countries to facilitate their exporting procedures because of positive impacts on trade flows.
Djankove, Freund and Pham	2010	use the time factor of trade facilitation, shown that for each additional day, the trade volume are reduced by 1%.
Tomasz Iwanow and Colin Kirkpatrickz	2007	find out empirically the significance of the relationship between trade facilitation and trade performance. Using augmented gravity model their estimated results suggest that if trade facilitation improves by 10 %, this could yield a 5% increase in export. If the same improvement is brought in regulatory environment, communication and infrastructure the resulted yield would be 8 %.
Robert C. Feenstra and Hong Ma	2014	explored the impact of trade facilitation and extensive margins exports by taking OECD and non-OECD countries for analysis. For trade facilitation they used port efficiency. Estimated results show that port efficiency is positively significantly enhancing extensive margin of exports and bilateral import tariff negatively, further results showing that the relationship is not strong within OECD group individually.

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Product heterogeneity/Sectoral impacts		
Clarke	2005	studied the factors affecting the export performance of manufacturing sector of African countries, the estimated results suggest that countries export less with poor customs regulations.
Hyo-young Lee and Chong-Sup Kim	2012	analysed the relationship of trade facilitation and trade growth using extensive and intensive margins. Highly disaggregated data; sector wise plus income levels of the countries of trade were taken and a composite index is used for trade facilitation. The results suggest that the developing countries responding more in primary goods to trade facilitation. The study further show that TF on lower -middle-income countries have large impacts in primary goods at intensive margin while these impacts are largest for manufacturing goods at intensive margin.
Inma Martinez-Zarzoso and Laura M´arquez-Ramos	2008	determined the effect of trade facilitation on sectoral export. The data were taken from 'World Doing Business' on time, documents and cost to import or export for 167 importers and 13 exporter countries. Using different estimation techniques named as OLS, PPML and the Harvey model. The estimated results suggest that by lowering the number of days, cost and number of documents to exports will boost export performance, also found that TF has stronger impacts on the volume of differentiated products.
Maria Persson	2012	worked on the transaction cost related to the cross border trade procedures that are affecting the volume and range of traded goods. Using 8 digit products that were exporting from developing to EU countries the study found that if transaction costs proxied by number of days needed to export a standard container of goods dropped by one percent, the number of exported differentiated products would increase by 0.6 % and homogenous by 0.3 percent.

Trends of Sector wise exports (US $ million)

Countries	Sector Wise Export	1995	2000	2005	2011	2014
Afghanistan	Primary	.14	.12	.28	.18	.37
	Manufacturing	.03	.02	.50	.15	.59
	Services	-----	----	----	----	---
Bangladesh	Primary	.41	.85	.73	2.14	2.05
	Manufacturing	2.96	5.80	8.58	23.75	26.87
	Services	.70	.82	1.25	2.65	2.95
Bhutan	Primary	.03	.05	.13	.36	.20
	Manufacturing	.07	.05	.13	.26	.30
	Services	.01	.02	.04	.08	.13
India	Primary	7.98	8.59	28.36	102.85	126.90
	Manufacturing	18.45	26.02	58.56	191.73	172.03
	Services	6.77	16.69	52.53	137.15	148.65
Maldives	Primary	.06	0.03	.13	.32	.31
	Manufacturing	.03	.08	.02	.02	.20
	Services	.23	.35	.32	.85	2.5
Nepal	Primary	.03	.08	.28	.33	.23
	Manufacturing	.30	.47	.61	.59	.64
	Services	.68	.51	.38	.68	1.18
Pakistan	Primary	1.37	1.39	2.91	7.24	6.62
	Manufacturing	6.77	7.80	13.12	18.10	18.49
	Services	1.86	1.38	3.68	5.04	4.9
Sri-Lanka	Primary	.92	1.18	1.72	3.09	3.01
	Manufacturing	2.62	3.91	4.02	6.45	6.55
	Services	.82	.94	1.54	3.08	4.67

OBJECTIVE OF THE STUDY

- To study the impact of trade facilitation on export performance.
- To assess the impact of trade facilitation on export performance sector wise.
- To recommend suitable policy measures based on the finding of study.

RESEARCH HYPOTHESIS

Ho: Trade facilitation is positively enhancing sectoral export performance in SAARC countries.

Ho: Primary export will response more relative to other sectors to trade facilitation.

3. ECONOMETRIC METHODOLOGY AN VARIABLES DEFINITION

3.1 Augmented Gravity Model with Trade Facilitation

The following gravity model augmented with trade facilitation indicators in **logarithmic form** is used for this research study.

$$EXP_{ijt} = \beta_0 . Y_{it}^{\beta_1} . Y_{jt}^{\beta_2} . POP_{it}^{\beta_3} . POP_{jt}^{\beta_4} . D_{ijt}^{\beta_5} .$$
$$e^{(\beta_6 \text{COM\_COL}_{ij} + \beta_7 \text{COM\_OFF\_LANG}_{ij} + \beta_8 \text{ADJ}_{ij} + \beta_9 \text{DOCUMENT\_EXP}_{it} + \beta_{10} \text{TIME\_EXP}_{it} + \beta_{11} \text{COST\_EXP}_{it} + \vartheta_i + \vartheta_j)} . \varepsilon_{ijt}$$

Where “i” is showing exporter, “j” is representing importer and “t” in the subscripts of the variables showing time period (from year 2006-13) here in our case. Subscript “s” to dependent variable in model is showing sectors that is; primary or manufacturing.

VARIABLE DESCRIPTION AND ITS SOURCES

Variable	Description	Source
Dependent variables		
X_{ijs}: Exports from i to j of Commodity in sector s	Value of exports (US $) for the given data set	Unctad
1 X_{ijps} :is total exports in Primary sector **2** X_{ijms} **:**is total exports in manufacturing sector	Value of exports (US $) sector wise for the given data set	Unctad and WTO

Independent Variables		
$TIME\_EXP_i$	Total Number of days	Doing Business
$DOCUMENT\_EXP_i$	Total number of Documents	Doing Business
$COST\_EXP_i$	Transport costs (US$ per container)	Doing Business
Y_i	GDP_i of exporter(US $)	GDP from WDI
Y_j	GDP_j of importer(US $)	GDP from WDI
D_{ij}	Distance between exporter and importer	CEPII
$COM\_OFF\_LANG_{ij}$	Dummy will be 1 if language is common officially otherwise 0	CEPII
COM_COL_{ij}	Dummy for common colony	CEPII
POP_i	POP total in millions	POP from WDI
POP_j	POP total in millions	POP from WDI
ADJ_{ij}	Dummy will be 1 if border is common officially otherwise 0	CEPII
$\eth_i$	Exporters dummy	Known
$\eth_j$	Importer dummy	Known from the study

3.3 ECONOMETRIC METHODOLOGY

- To perform econometric estimation of equation , Panel data is adapted for estimation to control heterogeneity across countries.
- Typically, panel data deals with the two major effects for instance fixed effect (FE) and random effect models (RE).
- FE model capture time specific and individual specific intercepts, whereas RE model deals with country and time specific intercepts as instrument of random trouble. Hausman test is employed to choose fixed effect or random effect model.
- To perform econometric estimation of model we apply different estimation techniques to our panel data set. The majority of the methodology applying in traditional way likewise as estimation by Poisson, using fixed effect to estimate the model.
- As the empirical literature postulates that that econometric model of gravity equation comprises numerous time invariant variables. For illustration some important variables in our model for example population, distance or trade barriers reveal a minute change within the data set for our concern. By applying simply fixed effect all these variables would be excluded in the regression. Though, we assume high explanatory power of these variables and want to see the effects of them on trade/export flows.

- Further more there are always chances of zero export/trade and heteroscedasticity in trade gravity data set.
- Santos Silva and Tenreyro (2006) present a simple way of dealing with this problem. They show that under weak assumptions – essentially just that the gravity model contains the correct set of explanatory variables – the Poisson pseudo-maximum likelihood estimator provides consistent estimates of the original nonlinear model. It is exactly equivalent to running a type of nonlinear least squares on the original equation.
- As Shepherd (2013) also claimed that Poisson estimator has a number of additional desirable properties for applied policy researchers using gravity models.
- First, it is consistent in the presence of fixed effects, which can be entered as dummy variables as in simple OLS.
- Second, the Poisson estimator naturally includes observations for which the observed trade value is zero. Such observations are dropped from the OLS model because the logarithm of zero is undefined.
- Third, interpretation of the coefficients from the Poisson model is straightforward, and follows exactly the same pattern as under OLS. Although the dependent variable for the Poisson regression is specified as exports in levels rather than in logarithms, the coefficients of any independent variables entered in logarithms can still be interpreted as simple elasticities.

4. EMPIRICAL RESULTS

- In order to examine the robustness of the results, three estimation methods(OLS, fixed effects and Poisson Fixed Effect) and three trade facilitation indicators (number of days, documents and cost per standard container) are used in this research study.
- The virtue of investigating robustness of results is that one cannot rely on just one model specification or sole one econometric technique when drawing inferences based on the assumptions.
- The results pertaining to the study in the two sectors; primary and manufacturing are discussed in the following sections.

4.1 Results by OLS, FE and Poisson FE methods

- Gravity model is estimated, using OLS, FE (Fixed Effect) and Poisson FE methods for checking reliability of estimates.
- Hausman test in our case suggested that Fixed Effect technique is more appropriate method for estimation.
- By reviewing the literature regarding the estimation of the gravity model, it was found that there are always chances of zero export/trade and heteroscedasticity in trade gravity data set, such as in our case, we found that probability was greater than chi^2 (by xtset3 command in STATA 2013) presenting heteroscedasticity.

- Santos Silva and Tenreyro (2006) present a simple way of dealing with this problem.

- They show that under weak assumptions – essentially just that the gravity model contains the correct set of explanatory variables – the Poisson pseudo-maximum likelihood estimator provides consistent estimates of the original nonlinear model. It is exactly equivalent to running a type of nonlinear least squares on the original equation.

4.2.0 Trade Facilitation and Primary Exports

	(1)			(2)		
Independent Variable	OLS	FE	Poisson FE	OLS	FE	Poisson FE
LnY_{it}	2.486*** (.068)	0.358 (.266)	0.085 (.139)	2.505*** (.068)	-0.903 (.692)	0.176 (.222)
LnY_{jt}	0.535*** (.022)	0.596*** (.022)	0.696*** (.012)	0.548*** (.022)	0.595*** (.022)	0.696*** (.012)
$LnPOP_i$	1.083*** (.021)	.621 (1.939)	-1.939 (8.646)	1.076*** (.021)	0.474 (4.261)	-4.070 (9.405)
$LnPOP_j$	0.790*** (.020)	0.832*** (.020)	0.743*** (.013)	0.797*** (.020)	0.832*** (.021)	0.742*** (.013)
LnD_{ijt}	-1.403*** (.059)	-1.505*** (.589)	-1.166*** (.064)	-1.454*** (.060)	-1.506*** (.059)	-1.165*** (.064)
COM_COL_{ij}	0.703*** (.096)	0.610*** (.088)	1.087*** (.173)	0.637*** (.090)	0.607*** (.088)	1.087*** (.173)
$COM\_OFFLANG_{ij}$	0.366*** (.117)	0.510*** (.110)	0.340*** (.125)	0.507*** (.120)	0.514*** (.119)	0.340*** (.125)
ADJ_{ij}	0.535 (.022)	0.372** (.200)	-1.223*** (.257)	0.269 (.205)	0.373* (.120)	-1.22*** (.257)
Lndexp	-	-	-	-1.336*** (.269)	-0.217 (1.249)	-3.257** (1.621)
Lntexp	-	-	-	-	-	-
Lncexp	-	-	-	-	-	-
C	-9.210*** (.757)	16.921 (23.231)	-	-6.40*** (.943)	17.81 (23.80)	-
Time dummy	None	None	None	None	None	None
Crossectonal Dummy	None	None	None	None	None	None
Number of obs	3593	3593	3678	3593	3593	3678
R^2	.58	.48	-	.58	.48	-
F-stat	651.27	223.31	-	657.60	209.30	-
Prob>chi^2	.0000	.0000	.0000	.0000	.0000	.0000

Note: The dependent variable is the logged value of exports in primary sector at SITC 3-digit level for all the regressions except the Poisson. Country and time effect are used. Robust coefficients along with standard error in parenthesis are given. Asterisks indicates the significance level at 1%(***), 5%(**) and 10%(*).

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	(3)			(4)		
Independent Variable	OLS	FE	Poisson FE	OLS	FE	Poisson FE
LnY_{it}	2.195*** (.152)	-0.946 (.670)	0.253*** (.063)	2.25*** (.070)	0.476 (.309)	-0.374 (.144)
LnY_{jt}	0.534*** (.022)	0.595*** (.022)	0.696*** (.012)	0.573*** (.022)	0.596*** (.022)	0.696*** (.012)
$LnPOP_{i}$	1.017*** (.037)	0.617 (4.178)	0.282 (5.142)	1.074*** (.020)	7.108*** (2.075)	-4.255 (6.766)
$LnPOP_{j}$	0.790*** (.020)	0.832*** (.020)	0.743*** (.013)	0.819*** (.020)	0.832*** (.020)	0.743*** (.013)
LnD_{ijt}	-1.402*** (.059)	-1.507*** (.059)	-1.166*** (.063)	-1.440*** (.058)	-1.505*** (059)	-1.167*** (.063)
COM_COL_{ij}	0.702*** (.089)	0.607*** (.088)	1.086*** (.173)	0.659*** (.088)	0.611*** (.088)	1.085*** (.174)
$COM\_OFFLANG_{ij}$	0.357*** (.117)	0.514*** (.119)	0.341*** (.126)	0.383*** (.115)	0.509*** (.119)	0.343* (.127)
ADJ_{ij}	0.251 (.207)	0.373* (.200)	-1.222*** (.257)	0.366* (.202)	0.372** (.200)	-1.224*** (.257)
Lndexp	-	-	-	-	-0.701 (1.147)	-2.533** (1.155)
Lntexp	-0.644** (.300)	0.054 (.439)	1.079*** (.211)	-	-	-
Lncexp	-	-	-	1.268*** (.108)	-0.061 (.287)	0.761*** (.185)
C	-4.789** (2.196)	16.82 (23.25)	-	0.886 (1.135)	21.894** (9.332)	-
Time dummy	None	None	None	None	None	None
Crossectional dummy	None	None	None	None	None	None
Number of obs	3593	3593	2678	3593	3593	3678
R^2	.59	.48	-	.60	.48	-
F- stat	562.20	209.30	-	542.34	209.30	-
Prob>chi^2	.0000	.0000	.0000	.0000	.0000	.0000

Note: The dependent variable is the logged value of exports in primary sector at SITC 3-digit level for all the regressions except the Poisson. Country and time effect are used. Robust coefficients along with standard error in parenthesis are given. Asterisks indicates the significance level at 1%(***), 5%(**) and 10%(*).

4.3.0 Trade Facilitation and Manufacturing Exports of SAARC

	(1)			(2)		
Independent Variable	OLS	FE	Poisson FE	OLS	FE	Poisson FE
LnY_{it}	1.053*** (.054)	0.185 (.537)	0.131 (.217)	1.051*** (.054)	0.406 (.557)	0.217 (.229)
LnY_{jt}	0.849*** (.018)	0.877*** (.018)	0.837*** (.054)	0.848*** (.018)	0.877*** (.018)	0.837*** (.055)
$LnPOP_i$	1.369*** (.016)	-4.825 (3.378)	1.283 (4.984)	1.370*** (.017)	-5.862* (3.449)	-0.576 (5.173)
$LnPOP_j$	0.839*** (.016)	0.856*** (.016)	0.718*** (.022)	0.838*** (.016)	0.856*** (.016)	0.719*** (.022)
LnD_{ijt}	-0.57*** (.047)	-0.533*** (.047)	-0.515** (.178)	-.564*** (.048)	-0.532*** (.047)	-0.515*** (.178)
COM_COL_{ij}	0.467*** (.017)	0.492*** (.071)	1.053*** (.131)	0.474*** (.072)	0.494*** (.071)	1.053*** (.131)
$COM\_OFFLANG_{ij}$	0.246** (.093)	0.120 (.097)	0.221 (.172)	0.229** (.096)	0.117 (.097)	0.220 (.173)
ADJ_{ij}	0.855*** (.165)	0.970*** (.163)	-0.517 (.427)	0.853*** (.165)	0.969*** (.163)	-0.515 (.427)
Lndexp	-	-	-	0.155 (.212)	-1.51 (1.014)	-2.578** (.804)
Lntexp	-	-	-	-	-	-
Lncexp	-	-	-	-	-	-
C	-9.51*** (.600)	25.57 (18.81)		9.838*** (.750)	31.94* (19.29)	-
Time dummy	None	None	None	None	None	None
Crossectonal Dummy	None	None	None	None	None	None
Number of obs	3609	3609	3676	3609	3609	3676
R^2	.75	.58	-	.75	.584	-
Prob>chi^2	.0000	.0000	.0000	.0000	.0000	.0000

Note: The dependent variable is the logged value of exports in primary sector at SITC 3-digit level for all the regressions except the Poisson. Country and time effect are used. Robust coefficients along with standard error in parenthesis are given. Asterisks indicates the significance level at 1%(***), 5%(**) and 10%(*).

Cont…

	(3)			(4)		
Independent Variable	OLS	FE	Poisson FE	OLS	FE	Poisson FE
LnY_{it}	0.863***	0.243	0.238	0.912***	0.046*	-0.223
	(.121)	(.542)	(.176)	(.056)	(.567)	(.212)
LnY_{jt}	0.849***	0.877***	0.838***	0.870***	0.877***	0.837***
	(.018)	(.018)	(.055)	(.018)	(.018)	(.055)
$LnPOP_i$	1.326***	-4.799	1.576	1.362***	-5.225	0.842
	(.030)	(3.379)	(3.676)	(.016)	(3.418)	(3.072)
$LnPOP_j$	0.839***	0.856***	0.718***	0.856***	0.856***	0.718***
	(.016)	(.016)	(.022)	(.016)	(.016)	(.022)
LnD_{ijt}	-0.569***	-0.533***	-0.515**	-0.589***	-0.533***	- 0.516**
	(.046)	(.047)	(.178)	(.047)	(.047)	(.177)
COM_COL_{ij}	0.466***	0.492***	1.052***	0.442***	0.491***	1.051***
	(.071)	(.071)	(.131)	(.071)	(.071)	(.132)
$COM\_OFFLANG_{ij}$	0.240	0.120	0.221	0.254**	0.121	0.224
	(.093)	(.097)	(.172)	(.092)	(.097)	(.170)
ADJ_{ij}	0.859***	0.970***	-0.515	0.924***	0.969***	-0.517
	(.165)	(.163)	(.428)	(.164)	(.163)	(.428)
Lndexp	-	-	-	-	-	-
Lntexp	-0.420*	-0.305	0.574***	-	-	-
	(.240)	(.354)	(.144)			
Lncexp	-	-	-	-0.725	0.214	0.696
				(.087)	(.277)	(.137)
C	-0.42***	26.10	-	-3.70***	27.00	-
	(.240)	(18.83)		(.916)	(18.906)	
Time dummy	None	None	None	None	None	None
Crossectonal Dummy	None	None	None	None	None	None
Number of obs	3609	3609	3676	3609	3609	3676
R^2	.75	.58	-	.75	.58	-
Prob>chi²	.0000	.0000	.0000	.0000	.0000	.0000

Note: The dependent variable is the logged value of exports in primary sector at SITC 3-digit level for all the regressions except the Poisson. Country and time effect are used. Robust coefficients along with standard error in parenthesis are given. Asterisks indicates the significance level at 1%(***), 5%(**) and 10%(*).

5. CONCLUSION

- SAARC is included among those regions, which are highly populated and more than 40 percent of the world's poor live in this region. It is well recognized in theoretical and empirical literature that export is one of most important channel of growth. Therefore, considering the significance of export in growth process, this study has tried to investigate the impact of one of the important factor of export performance particularly for developing countries which emerge in recent decade which is trade facilitation.

- The aim of this paper is that whether inefficiencies in trade facilitation affect the export performance or not. Two particular questions are answered: First, does trade facilitation positively enhancing sectoral export performance in SAARC countries? Second, does primary exports responding more/less to trade facilitation compared to manufacturing sector?
- Empirical results of three indicators for trade facilitation suggest positive enhancement of exports for the region.

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- Two types of results for primary and manufacturing sector are investigated. The PPLM FE results suggest that a 1% decrease in the trade facilitation indicators will increase primary exports by approximately 3.26%, 1.08 % and .06 %. Results for manufacturing sector are also significant except for cost indicator, suggest that improvement in trade facilitation levels by 1% will increase manufacturing exports by approximately 2.58 and .574 %.
- Findings of study reveal that trade facilitation has higher impact on primary sector exports as compared to manufacturing sector exports, especially to time factor. Cost to export and time to exports is also seen significant with negative sign for primary sector. Documents and time to exports in manufacturing sector were also realized significantly, only the cost indicator for the said sector is not shown significantly and having positive sign, which implies that it does not harming the manufacturing exports, thus it will be effective to reduce the production cost rather than the exporting cost.

Policy Implications

- Overall results confirm that trade facilitation is very important policy device for boosting up the sectoral export performance for SAARC region in term of documents, time and cost to export.
- However, according to broader definition of trade facilitation, improving port facilities and custom authorities also fall under the same frame, which is likely having substantial impacts to the volume and diversification of exports.
- The study suggests other areas to be prioritized so that the export performance of the member countries to be improved.
- These suggestions are made to stabilize the SAARC countries' currency which is partly dealing with the execution programmes targeting improved condition of macroeconomic forecasting. But still resilient efforts in this area are required.
- This research study is an attempt to contribute in literature on trade facilitation and sectoral export performance nexus in SAARC countries, but still there is research area or question that needs to be answered.
- One possible research question is that whether this relationship will hold for services sector exports. There is a need to explore the impact of trade facilitation on service sector exports for future research.