Analysing The Impact of Trade Facilitation on FDI :Empirical Analysis For South Asian Countries

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What Is Trade Facilitation

- Trade facilitation is a concept directed towards reducing the complexity and cost of the trade transaction process and ensuring that all these activities take place in an efficient, transparent and predictable manner.
- Trade facilitation is defined as the simplification, standardization and harmonization of procedures and associated information flows required to move goods from seller to buyer and to make payment (The United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT))

Why Trade Facilitation Important

- The main objective to facilitate the trade procedure is to reduce the transaction cost, which expected to have a favorable impact on trade expansion and hence economic development .
- There are several potential gains from trade facilitation for economy of a country. In term of increased trade tax collection, better use of resources and increased trade compliance.
- FDI and international trade provide as the twin engines of world affluence .Foreign direct investment (FDI) has long been known as an important source of financing for development in host (recipient) countries.
- A more efficient and transparent delivery of public services will allow the administration to maintain high security levels and effective government control, while diminishing opportunities for corruption.
- Simplified and improved customs procedures have helped to create new trade and investment opportunities in many developing countries.

Indicators of Trade Facilitation

There are numbers of indicators for the trade facilitation. Trade facilitation may manifest in various effects, such as fewer delays at border crossing ,better targeting of risk shipments, higher productivity of staff, on line filling documents.

The most commonly used indicators tends to focus on the following aspects.

- Required time for key procedures
- Transport cost or freight cost
- Numbers of documents required for clearing goods
- Availability and quality of transport, infrastructure, and services.

Motivation of the Study

- Countries that execute trade facilitation reforms and increase trade efficiency and connectivity are generally expected to create a centre of attention more foreign direct investments.
- A relatively large research literature has been able to show that simplification and harmonization of international trade procedures has the potential to increase both trade volumes and the number of products traded.
- A growing number of studies have emphasized the complementary relationship between trade and investment, suggesting that reductions in inefficient trade procedures may also be an effective policy for attracting foreign direct investment.
- In South Asia the trade facilitation indicators are not very good for the developing countries as compared to the developed countries in the region of South Asia ,as a result poor trade facilitation indicators and weak institutional structure seem to hurdle for attracting the FDI in the developing countries of South Asia.

- In this paper I explored the nexus between trade facilitation and foreign direct investment in the region of south Asia where the situation of trade facilitation indicators are very worse .

- I also investigate in this research how the developing countries of Asia improve their trade facilitation indicators and attract more attention to receive more FDI.

FDI Inflows in South Asian countries

(as percentage of total world)

Economy	1970	198 0	1990	2000	2012
Afghanistan	0.0017	0.0165	0.0005	0.00013	0.06618
Bangladesh	0	-0.0191	0.0015	0.04244	0.0921
Bhutan	0	0	0.0008	0	0.0036
India	0.3429	0.1453	0.1155	0.2632	1.7244
Maldives	0	-0.0028	0.0027	0.0016	0.0163
Nepal	0	0.00055	0.0029	0.0036	0.0066
Pakistan	0.1734	0.1169	0.1358	0.0024	0.0613
Sri-lanka	-0.0022	0.0788	0.02115	0.0127	0.0671

FDI Inflows in Developed countries

(as percentage of total world)

	1970	1980	1990	2000	2012
Finland	**0.136**	**0.045**	**0.315**	**0.648**	**0.296**
Germany	**0**	**0**	**1.446**	**14.545**	**1.448**
Luxembourg	**0**	**0**	**0.763**	**0.099**	**1.338**
Netherlands	**4.772**	**4.630**	**5.399**	**4.684**	**1.258**
Norway	**0.483**	**0.110**	**0.763**	**0.520**	**1.338**
Sweden	**0.817**	**0.268**	**5.270**	**2.903**	**1.831**
United states	**9.504**	**31.099**	**23.632**	**23.034**	**12.093**
UK	**11.224**	**18.608**	**14.867**	**8.942**	**4.232**
Switzerland	**0**	**0**	**2.676**	**1.412**	**1.140**

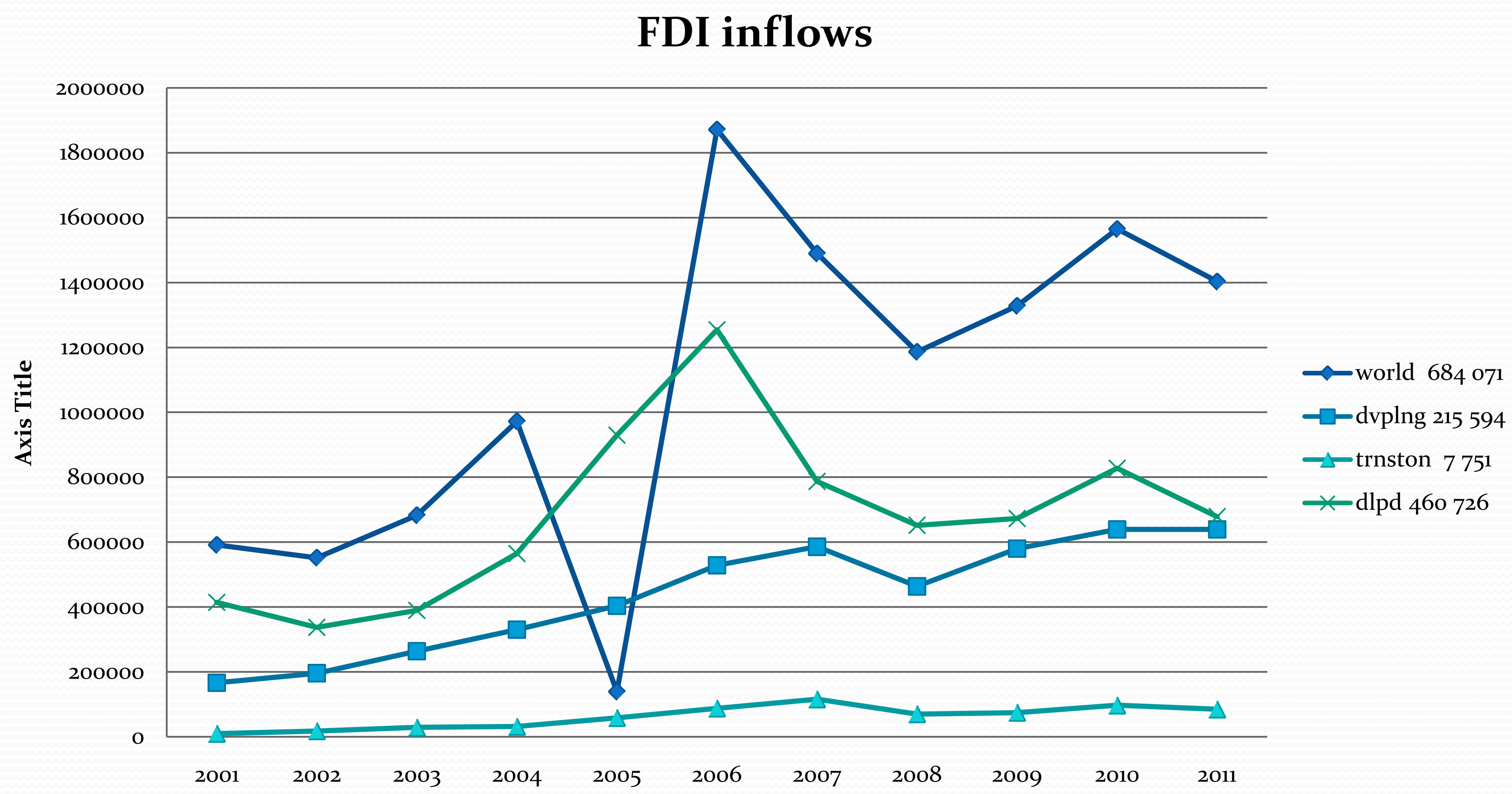
Trade Facilitation Indicators of South Asian Countries

	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	71	2763	10	76	2794
Bangladesh	8	29	906	8	38	1282
Bhutan	8	38	1476	12	38	2304
India	8	20	941	9	26	1059
Maldives	8	21	1342	9	21	1487
Nepal	9	42	1750	9	35	1870
Pakistan	7	23	646	8	21	623
Sri-Lanka	6	22	688	7	21	707
Average	8	33	1314	9	35	1516

Trade Facilitation Indicators of Developed Countries

	Time to export(days)	Documents to export(number)	Cost to import(us $ per container)	Time to import (days)	Document to import(number)	Cost to import(us $ per container)
Denmark	4	5	684	3	5	684
Finland	4	8	482	5	8	528
Germany	4	7	808	5	7	856
Luxembourg	5	6	1363	4	6	1363
Netherlands	4	6	888	5	6	985
Norway	4	7	718	4	7	526
Sweden	3	8	639	3	6	685
Switzerland	4	8	1409	5	9	1446
United Kingdom	4	8	969	4	7	1200
United States	4	6	1003	5	5	1239
Average	4	7	896	4	7	951

Comparison of FDI Flows Inward



Trade facilitation and FDI

SN	author	Country/period	Main findings
1	Karin olofsdotter and maria persson	2013	1. vertical FDI should negatively associated with cumbersome procedures, 2. horizontal FDI should be less negatively affected by inefficient trade procedures . 3. effect of time consuming export procedures is negative for both small and large markets.
2	yann dual and chorthip utoktham	2014	1. positive effect of a common language between partners on FDI inflows. 2. Bilateral trade cost between source and host countries have a significant effect on FDI .tariff are also found to have a negative effect on FDI. RFE, 3. The host country domestic business environment has a strong positive effect on FDI. Bilateral cross border trade connectivity exhibits a very significant and positive relationship with FDI which imply that a strong preference for foreign investors for locations that have good transport and logistics linkages to host country.
3	Yann dual and charthip utoktham	2009	1. import tariff is found to have no significant effect on bilateral trade flow. Tariff rate are significant when non Asian countries are excluded and trade cost in exporting country are found to have more impact on bilateral trade than importing country.
4	Mohsin husnian,qazi masood	2013	1. Trade facilitation reforms play significant role in improvement of export performance . 2. GDP per capita, income of trade partner and infrastructure facilities are significant determinants of export performance

Objective of The Research

- Trade facilitation reforms are positively correlated with the inflow of foreign direct investment.
- Assess the Impact of trade facilitation reforms on foreign direct investment in the region of South Asia.

Model Estimation

- **$FDIit=\beta_0+\beta_1 GDPit+\beta_3 pci + \beta_4 pit+\beta_5 pop +\beta_6 ctrd+\beta_7 trf+\beta_9 tt +\beta_{10} trdopns+\beta_{11} ndoc + it$ ………… (1)**

- **FDIit** is the inflow of the foreign direct investment in the region of SAARC countries in the time period t. Taken as the percentage of gross domestic product.
- **GDP** is the gross domestic product at constant price of the SAARC countries in the time
- period t.
- **Pci** is the per capita income of the SAARC countries, which is obtained as GDP/POP for each country of the SAARC countries.
- **Pit** is the quality of port infrastructure assigning 1 for extremely under developed port affiance to 7 for well developed port infrastructure.

- **Pop** is the population of the each country of the SAARC in the time period t.
- **Trf** is the tariff rate applied NFN which is applied by the SAARC countries to the other countries.
- **Tropness** is the trade openness which is taken as (GDP/TRADE).
- **Tt** is the time to trade taken as number of days for declaration of port.
- **Ndoc** are the total number of documents required in export/import a standard container of goods.
- **Ctrd** are cost of trade measuring in US dollar per container.
- And
- **It** is the error term which measure the impact of other variables, are not taken in the model.

Data Sources

Name of variable	Data source
Foreign direct investment	OECD /UNCTD
GDP	http://databank.worldbank.org/
PCI	http://databank.worldbank.org/
PIT	http://databank.worldbank.org/
Pop	http://databank.worldbank.org/
Tariff rate	UNCTAD's TRAINS database through wits
Top	world integrated trade solutions(http://wits.worldbank.org)
Ndys	Doing business index(http://www.doingbuisness.org)
Ndoc	Doing business index(http://www.doingbuisness.org)
Tt	Doing business index(http://www.doingbuisness.org)

Empirical Strategy And Data Analysis

Model estimated by using the data from the time period 2001 to 2012 by using panal data estimation technique.

- 1- Fix effect model(FEM)
- 2- Random effect model (REM)

Fixed Effect or Random Effect

- A fixed effects model is a statistical model in which the model parameters are fixed or non-random quantities.
- In the fixed effects model, the individual-specific effect is a random variable that is allowed to be correlated with the explanatory variables.
- Random effects model, also called a variance components model, is a statistical model where the model parameters are random variables.
- Random effects models are used in the analysis of panel data when it allows for individual effects.

Econometric Results

Independent variable	Pooled OLS	Fixed Effect	Random effect
Ctrd	**-7.1514** (0.007)**	**-7.385** (0.011)**	**-7.1504** (0.011)**
Ttrd	**-607.178*** (0.000)**	**-606.807*** (0.000)**	**607.1700*** (0.000)**
Dtrd	**-313.638*** (0.000)**	**-3132.996*** (0.000)**	**-3113.638*** (0.000)**
GDP	**0.0190*** (0.000)**	**0.0193*** (0.000)**	**0.0190*** (0.000)**
PCI	**0.0016*** (0.000)**	**0.0016*** (0.000)**	**0.0016*** (0.000)**
PIT	**-0.0151 (0.207)**	**-0.1515 (0.236)**	**-1.514 (0.235)**
POP	**25.7853*** (0.000)**	**25.7984*** (0.000)**	**25.781*** (0.000)**
TRF	**-2.28E-5 (0.952)**	**-0.0007** (0.0037)**	**-0.0006** (0.0482)**
TROP	**4.3E-7** (0.005)**	**4.60E-7** (0.006)**	**3.48E-7** (0.003)**

POOLED OLS (Dependent variable FDI)

Independent variables	1	2	3	4	5	6	7	8	9
c	-0.4537 (0.2691)	0.2883 (0.603)	0.5881 (0.277)	-3.7181* (0.087)	-4.1912** (0.004)	-3.6095*** (0.007)	- 1.325*** (0.568)	10.661*** (0.000)	10.682*** (0.000)
Gdp	2.09E-07 (0.6605)	-	-	-	1.75E-6 (0.335)	-1.289 (0.203)	-	-3.37E-6*** (0.000)	-3.38E-6*** (0.000)
PCI	0.016*** (0.000)	0.0016*** (0.000)	0.0016*** (0.000)	0.0020*** (0.000)	0.220*** (0.000)	0.0018*** (0.000)	0.018*** (0.000)	-	-
PIT	-	-	-0.1576* (0.096)	-	-	-	0.9960 (0.441)	-	-
POP	-	-	-	0.0019* (0.043)	0.0042* (0.076)	0.0045* (0.054)	0.0011* (0.021)	-	-
TRF	-	0.0011*** (0.002)	-	0.0071*** (0.000)	0.0006*** (0.000)	0.0006*** (0.000)	0.0008** (0.004)	-	-1.22E-5 (0.970)
TROP	-	-	3.85E-7** (0.004)	3.8E-7*** (0.000)	3.55E-7** (0.001)	3.52E-7** (0.001)	4.0E-7*** (0.000)	5.69E-7*** (0.000)	-
TTRD	-	-	-	-0.1108* (0.038)	-0.1001* (0.064)	-0.056* (0.010)	-0.0625 (0.241)	-0.312*** (0.000)	-0.315*** (0.000)
CTRD	-	-	-	-0.0006 (0.487)	-1.089 (0.281)	-	-	-0.048*** (0.000)	-0.0048** (0.001)
DTRD	-	-	-	-0.1060 (0.681)	-	-	-	-0.5670 (0.190)	-0.5666 (0.195)
R^2	0.7228	0.7665	0.8175	0.8323	0.8353	0.832	0.8330	0.4514	0.45144

FIXED EFFECT (Dependant variables FDI)

Independent variables	1	2	3	4	5	6	7	8	9
C	0.6440 (0.119)	0.0467 (0.930)	-0.6254 (0.279)	-9.8225 (0.289)	-3.967* (0.0195)	-3289* (0.0216)	-2.5193 (0.823)	-13.023 (0.823)	-9.8255 (0.289)
GDP	3.85E-7 (0.417)								
	--	-	-	1.89E-6 (0.3389)	-2.202E-6 (0.304)	-	-2.54E-6 (0.172)	-	
PCI	0.0017*** (0.000)	0.00166*** (0.000)	0.0016*** (0.000)	0.00181* (0.036)	0.00198*** (0.000)	0.0018*** (0.000)	0.0020*** (0.002)	0.0019*** (0.015)	0.0018*** (0.036)
PIT	-	-	-0.1424 (0.173)	-	-	-	1.3205 (0.268)	-	-
POP	-	-		-0.0172 (0.326)	0.0043 (0.106)	0.0042 (0.110)	-0.0079 (0.683)	-	-0.0175 (0.326)
TRF	-	-0.0085* (0.0219)	0.00085* (0.012)	0.00098** (0.007)	0.00068** (0.003)	0.0006** (0.004)	0.0011** (0.004)	-0.0019** (0.004)	0.00098** (0.007)
TROP	-	-	3.4E-7** (0.002)	3.54E-7** (0.005)	3.94E-7** (0.004)	3.32E-7** (0.005)	3.36E-7** (0.006)	3.34E-7** (0.004)	3.45E-7** (0.005)
TTRD	-	-	-	0.0222 (0.819)	0.0917 (0.176)	0.0481 (0.200)	-0.0420 (0.713)	-	0.02229 (0.819)
CTRD	-	-	-	-0.0034* (0.058)	-0.0069* (0.043)	-	-1.6301* (0.014)	-0.0035* (0.039)	-0.0034* (0.058)
DTRD	-	-	-	-1.9287* (0.079)	-	-	-1.6301 (0.146)	-1.9888* (0.063)	-1.928* (0.079)
R2	0.7680	0.7920	0.8306	0.8791	0.8445	0.8421	0.8834	0.8815	0.8790

RANDOM EFFECT (Dependant variable FDI)

Independent variables	1	2	3	4	5	6	7	8	9
C	0.3223 (0.613)	-0.543* (0.0461)	-2.6792* (0.079)	-3.8326** (0.007)	-5.6654* (0.012)	-4.7575** (0.003)	-5.6654* (0.012)	-4.755** (0.003)	8.619*** (0.000)
GDP	-	-	-	3.1E-6* (0.037)	-	2.86E-6 (0.148)	-	2.86E-6 (0.148)	4.52E-6* (0.043)
PCI	0.00159*** (0.000)	0.0016*** (0.000)	0.00192*** (0.000)	0.00195*** (0.000)	0.0020*** (0.000)	0.0020*** (0.000)	0.00207*** (0.000)	0.00209*** (0.000)	-
PIT	0.2296* (0.042)	-0.1550 (0.174)	-	-	0.1925* (0.036)	-	0.19256* (0.036)	-	-
POP	-	-	0.0015* (0.046)	-	0.0022* (0.026)	0.00609* (0.018)	0.00229* (0.026)	0.0060* (0.018)	0.0021 (0.450)
TRF	0.00096** (0.003)	0.00087** (0.002)	0.000713*** (0.000)	0.00068** (0.001)	-	0.00068** (0.002)	3.77E-7** (0.001)	0.00068** (0.002)	-
TROP	-	4.0E-7*** (0.000)	4.02E-7*** (0.000)	3.99E-7*** (0.000)	3.77E-7** (0.001)	-	-	-	-
TTRD	-	-	-0.0884* (0.033)	-0.1008* (0.061)	-0.1367* (0.037)	-0.1259* (0.034)	-0.1376* (0.037)	-0.1259* (0.034)	-0.323*** (0.000)
CTRD	-	-	-	-0.00093 (0.1835)	-0.0010* (0.016)	-0.0068* (0.038)	-0.0010* (0.037)	-0.00068 (0.381)	-
DTRD	-	-	-0.2307* (0.021)	-	-	-	-	-	-0.2138 (0.478)
R2		0.6794	0.8309	0.82404	0.8039	0.79467	0.80398	0.7946	0.3475

Results and conclusion

- Three indicators of trade facilitation are consistent, significant and shows the negative correlation with FDI which indicating that by decreasing the cost of trade, time to trade and documents to trade can increasing their FDI inflow.
- Other control variables, tariff rat(trf) per capita income (Pci),trade openness(Trop)and population are also significant and according with the general expected signs.
- GDP and port infrastructure (PIT) shows ambiguous results with different estimation techniques.

Policy Implication

- This study will help policy makers regarding the betterment of trade facilitation measures and improvement in the inflow of FDI which are the important source of growth and development in the region south Asian where the condition of trade facilitation indicators are very bad.
- . Improvement in the trade facilitation indicators will also play a vital role in the development in the other sectors of the SAARC countries.
- Improvement in the trade facilitation indicators of the SAARC countries will also boost the trade volume of these countries .
- other areas to be prioritized (port infrastructure, per capita income, pop) so that the FDI inflow and export volume of the member countries to be enhanced.

Thank you