Does the WTO Accession Stimulate Inward FDI in Developing Countries? Accentuate on TRIMS, TRIPS or Trade Liberalization

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Abstract

The propensity of WTO always ensure to strengthening and consolidating the integration approach with country to country. Manifold accession like TRIMS, TRIPS and trade liberalization agenda facilitate to enlarge the attractiveness of foreign direct investment in many more developing countries. This study is concentrates on judgment of the WTO accession like liberalization, TRIMS and TRIPS stimulate the flow of FDI in developing countries and also to observe that the other relevant important variables such as macroeconomic stability, infrastructure, human capital, geographic location, financial development, agglomeration, market size has helped the incessant inflow of FDI for developing country. Some research penetratingly interpreted that TRIMS, TRIPS and trade liberalization accession are controversial subject matter for the developing countries. For accomplishing the research work the paper has used panel data of 58 different developing countries over the years 1990-2014. Through that work the paper has explore that because of the adopting liberalization polices, relinquishing market distortions with the connection of TRIMS and harmonization of IPR standards throughout TRIPS escalate the foreign direct investment in the developing countries, it means that there is a significant relationship of FDI along with TRIPS, TRIMs and trade openness. Other pertinent factors like market size, macroeconomic stability, agglomeration and engagement of WTO membership have also significant impact on FDI inflows. Others common factors like infrastructure, human capital, financial development, geographical location also make significant impact on facilitating foreign direct investment. Developing countries always requires strengthening their superiority and protecting rights and ensuring negotiation process and encouraging market liberalization process for accomplishing economic competitiveness.

1. Introduction

Last few decades expertise have observed that developing countries have attempted to adopt the trade liberalization policy and abolish the different trade related impediments for enforcing incessant flow of FDI along with offering manifold incentives to magnetize foreign investors in the enviable sectors. WTO always stimulates the free and open market economy. The principles of World Trade organizations emphasizes on free trade principles, transparency in trade management, removal of trade barriers, preferential treatment for developing countries regarding technology and financial aspects, rule based trading system with competition and environmental protection for sustainable growth (Cherulinam, 2007).

Trade liberalization framework envisioning the developing country to strengthening the economic advancement and ascertain an affirmative environment to make uninterrupted flow of FDI. Using data for 87 countries, Hakura and Jaumotte (1999) find that "trade indeed serves as an important way for the international technology transfer to developing countries. The authors show that intra-industry trade plays a more important role in technology transfer than inter-industry trade. Intra-industry trade is more pervasive among developed countries, and inter- industry is more prominent in trade between developed and developing countries. Developing countries will enjoy relatively less technology transfer from trade than developed countries."

Due to the exploration of new knowledge and enterprising research and development there is an increasing significance of international intellectual property rights (IPRs). TRIPS is mainly incorporated with the trademarks, copyrights, industrial designs, data secrets, and patents. The adoption of the TRIPS Agreement was a major step towards the harmonization of certain aspects of the protection of IPRs. WTO Members have been left room for maneuver to adopt, in certain cases, different approaches and legal solutions (Correa, 2000a). Strengthened IPR protection increases countries' access to foreign technology through trade (Smith, 1999; Fink and Braga, 1999; Maskus and Penubarti, 1995; Rapp and Rozek, 1990), encourage inflow of FDI (Park and Lippoldt, 2007; Javorcik, 2004; Lee and Manseld, 1996; Seyoum, 1996) and licensing activities (Wakasugi, 2007; Yang and Maskus, 2001).

TRIMs agreement may persuade the develop country to ameliorate the awareness to make considerable assurance to surge the investment. Governments always focus on certain conditions on foreign investors to encourage investment in according to certain national priorities. These Conditions which can affect trade are known as trade-related investment measures or TRIMs (Kennedy, 2003). The TRIMs agreement forbids any laws, policies or administrative regulations that favoring domestic products and producers, includes government incentives to encourage corporations to use domestically made products as a way of creating or protecting local jobs. Industrial policy needs to formulate that are commensurate and relevant may augment the domestic competency as well as creating affirmative atmosphere for easy flow of investment.

WTO always put forward by espousing liberalizing trade policy for accomplishing the integrated and unified market base economy. WTO make intervention in miscellaneous trade dispute related aspects. This study mainly concentrates to make judgment of WTO accession like, liberalization, TRIMS and TRIPS stimulate the flow of FDI and also determining the other relevant important variable such as macroeconomic stability, infrastructure, human capital, geographic location, market size also intensifying the incessant inflow of FDI for developing country.

The following section is incorporated with the literature review, section three covers with the theoretical framework with different variables that influence to flow of FDI, section four covers with the empirical evidence, and section five covers with the conclusion.

2. Literature Review

Rapid Trade liberalization policy under the framework of WTO makes this world integrated and inter-related with one to another. There are many drastically transformation after the inception to the WTO, and necessity for discussion came out in Uruguay Round, like TRIPS and TRIMs.

TRIPs supporters argue that strong protection of IPRs would enhance increased flows of FDI and facilitate technology transfer to developing countries, and consequently stimulate local innovation capacity (Correa 2005). Due to the globalization and market base economy generates diffusion of knowledge and continuous product innovation and adaptation of new wisdom and advancement of modern technology is unavoidable for market access. IPR protection is considered as pre-condition for FDI. Economic analysis also shows that sufficient IPRs protection is an essential component of increased inward FDI and trade flows in IPRs-sensitive goods for countries cherishing to make economic development. A country that enhances its IPR regime may attract additional knowledge intensive products, which will otherwise be unavailable on the local market or it may attract FDI; in either case, international technology transfer is likely to flow (Lippoldt, 2006). Lesser (2002), Lee and Mansfield (1996), and Smarzynska (2004) found a positive effect of IPR on FDI.

TRIMS Agreement encompasses not only the promotion of the expansion and progressive liberalization of world trade, but also the facilitation of investment across international frontiers.

Number of challenges face by the developing countries in the phase of implementation, these include the difficulty of identifying TRIMs covered by the agreement and ensuring their timely notification to the WTO, the inadequacy of the transition period for phasing out prohibited TRIMs and disputes arising from the lack of clarity between the GATT, the TRIMs agreement and the Agreement on Subsidies and Countervailing Measures. The biggest concern of the prohibition of local content requirement judgment that many developing countries view that it hampers their economic interest. Developed countries argued that TRIMs represented nothing but host government interference with a liberal trade regime. WTO has pushed developing countries towards free trade by reducing tariffs considerable way and also reducing the government impediment and abolishing government

regulation regarding foreign direct investment. TRIMS and TRIPS agreement conducts a comprehensive shrinking on FDI related restrictions.

Significant trade liberalization would be one of the driving forces for the rapid increase of FDIs to developing countries. Developing countries are significantly reducing the trade barriers after the engagement of WTO. Trade openness as FDI has become one of the main argument among economist and policy makers in explaining the growth phenomena in developing countries Dawson, (2006). Some studies have found significant positive effects of trade liberalization on FDI (Kandiero and Chitiga, 2006; Addison and Heshmati, 2003; Onyeiwu and Shrestha, 2004; Botric and Skuflic, 2006; Greenaway et al., 2007). Some studies like Razafimahefa and Hamori (2005) argue that liberalization weakly determine FDI.

The effect of trade openness on FDI inflows, proponents for trade openness (Nishimizu and Robinson, 1986; Nishimizu and Page, 1991; Tybout, 1992; Helleiner, 2002) contend that trade openness enhances competition which in turn increases the pressure, increased efficiencies, technical change and product improvement, reduced costs of production, general economic growth via raising profits which encourage growth of foreign capital investment and inflows of expertise, and enhanced equal access to scarce resources which improves the overall resource allocation and eliminates corruption in the system.

It is an inevitable fact that WTO policies always stimulate to consolidate and strengthen the connections with the global market. Some research penetratingly said that the different accession under the WTO always privileged for the developed countries and WTO always using as a term of exploiting resources and generating market seeking ingredient for the MNCs. Here the paper have tried to find out the different accession mainly concentrates on TRIPS, TRIMS and trade liberalization under the WTO facilitated the foreign direct investment for the developing countries.

3. Theoretical Framework

Here the basic purpose is to explore the consequence of the implementation of WTO accession like TRIMS, TRIPS and trade liberalization scheme that may facilitate the unremitting flow of FDI in the various developing countries. For identifying the following equation is being constituted.

$$
FDI_{Jt} = \left\{ \begin{array}{l} \text{Agglomeration }_{jt}, \text{ Market Size}_{jt}, \text{ Economic Development }_{jt}, \text{ Openness }_{jt} \\ \text{Macroeconomic stability }_{jt}, \text{ Human Skills }_{jt}, \text{ Infrastructure }_{jt}, \text{ Financial development }_{jt}, \\ \text{TRIMS }_{jt}, \text{ TRIPS}_{jt}, \text{ WTO}_{jt}, \text{ SeaAccess}_{j}, \text{ Language}_{j}, \text{ Geographical Region}_{j} \end{array} \right\} \quad (1)
$$

Here 'j' represents the developing country and that may vary from 1 to 58 and 't' represent time tenure which covering the years from 1990 to 2014. The paper has selected a total of 58*25= 1,450 observations for each variable included in the sample.

At the initial stage the following equation that may partially reflect the first equation,

$$FDI_{jt}=\beta_0+\beta_1 g_{jt}+\beta_2 Population_{jt}+\beta_3 Trade_{jt}+\beta_4 Exchangerate_{jt}+\beta_5 Skill_{jt}+\beta_6 Education_{jt}$$
$$+\beta_7 FinancialDevelopmeny_{jt}+\beta_8 IPR_{jt} + \beta_9 Sea\ Access + \beta_{10} Language_{jt}+\varepsilon_{jt} \qquad (2)$$

Log linear equation of (2)

$$lnFDI_{jt}=\beta_0+\beta_1 lng_{jt}+\beta_2 lnPopulation+\beta_3 lnTrade_{jt}+\beta_4 lnExchangerate_{jt}+\beta_5 lnSkill_{jt}$$
$$+\beta_6 lnEducation_{jt}+\beta_7 lnFinancialDevelopmeny_{jt}+\beta_8 lnIPR_{jt} + \beta_9 Sea\ Access$$
$$+ \beta_{10} Language_{jt}+\varepsilon_j \qquad (3)$$

But the equation (3) may not serve the purpose that's why the paper requires formulating another equation that may effect of *TRIMS* and *TRIPS*. Here is the following equation.

$$Fdi_{jt}=\alpha_0+\beta_1 Fdi_{jt-1}+\beta_2 Population_{jt}+ \beta_3 Gdppc_{jt}+ \beta_4 Trade_{jt}+ \beta_5 Exchagerate_{jt}+ \beta_6 GSEP_{jt}$$
$$+ \beta_7 TeleDensity_{jt}+ \beta_8 FinancialDevelopmennt_{jt}+ \beta_9 Trade\ Agreement_{jt}+ \beta_{10} Patent_{jt}$$
$$+ \beta_{11} Region_j+ \beta_{12} Language_j+ \beta_{13} Sea\ Access_j+ \varepsilon_j \qquad (4)$$

Log Linear equation 4 that replacing the variable with an appropriate proxy from the Equation

$$lnFdi_{jt}=\alpha_0+\beta_1 lnFdi_{jt-1}+\beta_2 lnPopulation_{jt}+ \beta_3 lnGdppc_{jt}+ \beta_4 lnTrade_{jt}+ \beta_5 lnExchagerate_{jt}$$
$$+ \beta_6 lnGSEP_{jt}+ \beta_7 lnTeleDensity_{jt}+ \beta_8 lnFinancialDevelopmennt$$
$$+ \beta_9 lnTrade\ Agreement_{jt}+ \beta_{10} InPatent_{jt}+ \beta_{11} Region_j+ \beta_{12} Language_j$$
$$+ \beta_{13} Sea\ Access_j+ \varepsilon_j \qquad (5)$$

Here is the dependent variable is Stock Inward FDI and the independent variables are lag FDI Stock, Gross domestic product & Population, Gross domestic product per capita, GDPPC adjusted for purchasing power parity & gross fixed capital formation per capita, Aggregate trade as a percentage of GDP, Exchange Rate, Skill Level, Infrastructure, Financial development and trade liberalization, Trade Agreements ,Patents, Trademarks and Industrial Design, WTO membership, Language, Sea Access, Geographical and Income groups.

Table 1. Expected Sign of the different independent variables

Variables	Description	Expected Sign
Market Size	Jordan (2004) mentioned that FDI will move to countries with larger and expanding markets and greater purchasing power, where firms can potentially receive a higher return on their capital and by implication receive higher profit from their investment.	(+)
Economic Development	Inward flows of FDI not only increase the chances of boosting the available resources, but also enhance the efficiency of the local resources. (El-Fergani, 2003).	(+)
Agglomeration	Strong agglomeration effects are found on FDI inflows (Li et al. 2010).	(+)
Human Capital	Xu (2000), Benhabib and Speigel (1994), and Borensztein, De Gregorio, and Lee (1998) argue that even though FDI promotes technology transfer, the higher productivity in the host country only holds when a minimal level of educational attainment is achieved.	(+)
Infrastructure	Mollick et al. (2006) analyzed the role of telecommunications (telephone lines) and transport infrastructure (roads) for FDI and find a positive impact of both types of infrastructure.	(+)
Macroeconomic Stability	Countries with a high degree of currency risk will lose out on FDI to countries with more stable currencies (Foad 2005).	(+,-)
Financial Development	Claessens, Klingebiel, and Schmukler (2001), argued that since FDI is positively correlated with stock market capitalization and value traded, then FDI is a complement and not a substitute of domestic stock market development	(+)
Geographical Location	Galan et al. (2007) recognize that the FDI motive of MNEs is the prerequisite of location choice, and MNEs make decisions by linking the evaluation of advantages (characteristics) of a destination with specific motives.	(+)
Language	Multinational enterprises (MNEs) have increasingly broadened their use of foreign direct investment (FDI), and as a result they often need to deal with multiple languages and the associated administrative and transactions costs that come with language differences (Luo and Shenkar, 2006).	(+)
TRIMS	Li Hai –Qing (2001) has explained that the purpose of TRIMs is to use FDI measures to attract FDI or direct FDI in a way that is beneficial to host country's domestic industries and trade performance.	(+)
TRIPS	IPRs positively affect the volume of FDI by enabling foreign firms to compete effectively with indigenous firms that possess ownership advantages (Smarzynska Javorcik, 2004).	(+)
Trade Openness	Trade openness helps to ensure the growth phenomena in developing countries (Dawson, 2006).	(+)
WTO Membership	Felbermayr and Kohler (2007) focus on the WTO effect on trade. Using a combination of a Probit model and a Tobit model, they find that when both countries are WTO members, their trade is 31 percent higher than it would otherwise be and that the effects of GATT participation are greater when one economy is a member than when both are members.	(+)

4. Empirical Evidence

The following table explains that whether the variables are stationary or not. For

accomplishing the tasks panel unit root test is being accomplished. According to the table the level of all the series do not include unit root at 1% significance level. It indicates that the time series are stationary.

Table 2. Panel unit root test

	Levin Lin and Chu-t test Values** and prob	Im, Pesaran and Shin W-stat test Values** and Prob	ADF-Fisher Chi-square Test Values** and Prob	PP-Fisher Chi-square Test Values** and Prob	Test For Unit Root in	Include in Test equation
Variables						
FDI	-17.045 p=0.0000	-23.425 p=0.0000	139.673 p=0.0000	284.675 p=0.0000	Level	Individual trend and intercept
Market Size	5.4625 p=0.0000	4.3211 p=0.0000	251.282 p=0.0000	324.08 p=0.0000	Level	Individual trend and intercept
Economic Development	-9.435 p=0.0000	-13.289 p=0.0000	125.663 p=0.0000	283.01 p=0.0000	Level	Individual trend and intercept
Openness	6.893 p=0.0000	5.321 p=0.0000	210.091 p=0.0000	135.19 p=0.0000	Level	Individual trend and intercept
Human Capital	11.672 p=0.0000	15.28 p=0.0000	346.291 p=0.0000	422.64 p=0.0000	Level	Individual trend and intercept
Macroeconomic Stability	- 7.243 p=0.0000	-6.342 p=0.0000	165.209 p=0.0000	210.52 p=0.0000	Level	Individual trend and intercept
Agglomeration	-6.266 p=0.0000	-9.021 p=0.0000	175.231 p=0.0000	288.79 p=0.0000	Level	Individual trend and intercept
Infrastructure	-4.249 p=0.0000	-6.017 p=0.0000	52.453 p=0.0000	192.07 p=0.0000	Level	Individual trend and intercept
Financial Development	-2.563 p=0.0000	-5.064 p=0.0000	127.338 p=0.0000	256.724 p=0.0000	Level	Individual trend and intercept
Geographical Location	-3.043 p=0.0000	-7.833 p=0.0000	103.421 p=0.0000	438.909 p=0.0000	Level	Individual trend and intercept
Language	-2.189 p=0.0000	-9.653 p=0.0000	214.883 p=0.0000	534.762 p=0.0000	Level	Individual trend and intercept
TRIPS	5.204 p=0.0000	8.321 p=0.0000	129.99 p=0.0000	486.003 p=0.0000	Level	Individual trend and intercept
TRIMS	3.289 p=0.0000	5.219 p=0.0000	76.43 p=0.0000	123.876 p=0.0000	Level	Individual trend and intercept

The Result of Panel Unit Root Test

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The following table explained the descriptive statistics. The mean of a data explain the average value of the data set. The median of a data set is the value in the middle when the data are organized in ascending order. On the other hand the standard deviation of a data set is the positive square root of the variance.

Table 3. Summary statistics

Variable Name	No of Observation	Mean Value	Standard Deviation	Minimum Value	Maximum Value
LnFDI Stock	1450	19.45	3.59	5.23	35.29
LnGDP	1450	17.25	2.52	11.43	32.78
Ln Population	1450	9.25	2.81	9.81	29.80
LnGDPPC	1450	4.11	2.05	6.23	12.43
LnGDPPCPPP	1450	5.32	2.11	7.28	12.65

LnGFCFPC	1450	4.51	2.41	1.29	9.28
LnTrade% GDP	1450	3.23	2.03	3.66	7.55
Ln Exchange Rate	1450	4.62	2.55	1.23	16.73
Ln Inflation	1450	5.33	2.01	5.06	15.45
Ln Labour	1380	9.39	2.31	12.93	29.04
LnGDPPW	1380	5.45	2.45	4.28	18.92
LnGFCFPW	1380	4.22	2.01	1.43	9.28
LnGSEPP	850	2.47	1.13	0.92	3.43
LnGSEP	1450	2.69	0.78	3.29	7.51
LnGSES	1450	2.41	0.41	2.61	5.92
LnGSET	850	4.28	1.07	0.75	5.25
Ln Literacy Rate	1050	3.85	0.31	2.09	5.31
Average Years of Schooling	1050	4.22	2.04	0.88	18.39
Ln Tele-Density	1450	5.65	2.41	1.29	30.28
LnGFCF	1450	7.29	1.43	1.48	37.93
DSBS%GDP	1350	11.35	5.54	89.62	128.64
DCPS%GDP	1350	11.12	6.13	0.85	156.38
M3%GDP	900	15.09	3.29	8.29	163.97
LnLDCT	800	11.17	2.41	1.89	12.67
MCLC%GDP	800	14.25	3.14	1.94	115.43
Financial Development	1450	10.23	2.81	9.67	134.62
Ln Trade Agreement	1450	9.05	1.58	1.22	13.85
Ln Enforced Trade Agreements	1450	8.32	1.14	1.15	9.47
Ln Trade Marks	1450	5.57	1.04	1.09	19.73
Ln Total Industry Design	1450	4.23	1.08	1.04	18.45
Ln Resident Industrial Design	1450	3.29	2.03	1.07	29.59
Ln Non-Res Industrial Design	1450	3.48	1.45	1.23	19.26
Ln Total Patents	1450	5.20	1.83	1.31	25.88
Ln Resident Patents	1450	6.31	0.48	1.09	19.53
Ln Non-resident Patents	1450	4.87	1.26	1.25	25.73
Ginarte & Park Index	1000	5.93	1.19	0.63	8.29

Table 4. Correlation Matrix

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
lnFDISt	100																														
lnpop	72	100																													
lngdppc	43	9	100																												
lnTrade	13	14	32	100																											
lnInf	11	19	17	13	100																										
lnXrat	-13	7	-23	-11	18	100																									
lnLab	72	69	10	29	23	8	100																								
lngsepp	69	18	67	15	32	42	23	100																							
lngsep	56	26	58	22	18	-11	17	57	100																						
lngses	61	22	72	35	20	47	17	67	61	100																					
lngset	58	26	79	23	31	32	11	56	54	74	100																				
Lnlit	67	13	63	33	24	18	13	73	83	72	71	100																			
AvgYrsSc	72	14	72	45	20	-12	10	62	67	85	82	83	100																		
lnTele	82	74	67	11	18	23	49	55	59	65	65	66	66	100																	
lngfef	85	82	62	26	23	-24	82	45	54	64	66	62	46	72	100																
Fd	59	28	57	37	17	21	30	54	41	55	45	45	49	48	54	100															
Lnta	63	35	59	11	9	31	17	52	29	51	52	42	40	56	59	29	100														
Lntm	67	63	47	18	28	41	63	51	49	52	52	41	41	59	75	38	45	100													
lnTid	65	68	48	-17	9	15	54	50	34	43	51	35	42	67	79	34	67	72	100												
lnRid	68	67	42	15	11	17	68	42	43	41	45	32	45	63	70	32	55	70	83	100											
lnNrid	67	62	53	-14	10	22	49	49	41	45	48	39	41	67	73	38	59	75	85	82	100										
lnTp	66	61	56	-23	10	31	61	45	40	48	49	38	48	62	72	39	55	74	74	84	73	100									
lnRp	69	66	45	-22	8	-21	66	43	35	45	43	32	39	63	77	43	49	69	76	75	76	83	100								
lnNrp	68	62	51	19	11	73	46	42	41	38	48	49	38	41	65	73	46	52	69	72	77	75	82	100							
G&P	63	23	55	22	11	-13	37	45	29	42	50	43	50	55	59	48	59	25	59	47	46	25	33	22	100						
WTO	35	14	16	26	14	18	18	16	12	14	14	11	23	35	14	19	49	16	32	9	21	-13	3	11	42	100					
SA	15	45	18	29	-7	11	43	19	-10	-12	-19	-19	-23	29	28	15	28	14	31	29	25	23	26	18	21	10	100				
LAC	31	-29	21	11	18	21	29	55	46	55	59	65	55	19	22	-18	32	23	18	11	26	29	11	17	27	9	12	100			
Sea	48	24	32	28	13	-31	23	54	43	51	47	52	35	28	51	24	16	34	38	35	27	29	23	22	11	-10	11	13	100		
English	14	17	19	19	7	-15	17	23	12	14	19	19	14	14	10	39	-19	16	11	-3	-19	11	-6	-3	9	18	35	12	16	100	
French	-32	-29	38	-10	-23	-21	-31	-21	-27	-34	-51	-41	-51	-43	-56	-32	-28	-44	-28	-23	-32	-34	-39	-45	-22	-23	-15	-41	-23	-29	100

From the Table 4, the paper has seen that high correlations between explanatory variables are observed. From the Table 5, the paper has seen that the coefficient for the market size variable is positive and significant as expected. The size of the FDI large extent relies on the market size in host country, so it is expected that there is an association between the market size and FDI. Gross domestic product per capital (GDPPC) is the proxy for economic development which is also positive and statistically significant and that happened because foreign direct investment is responsive to gross domestic product per capital in the host developing country. Openness is observed to be positively and significantly associated to FDI inflows. On the other hand the coefficient macroeconomic stability such as inflation and exchange rate are being treated as a proxy for macroeconomic stability. The coefficient for inflation is statistically negative that indicates an increase in consumer prices causes a decrease in inward FDI. So that from the result it can pronounce that high inflation escort to low FDI and low inflation spawn high FDI. Another proxy variable exchange rate for macroeconomic stability also exhibits statistically significant that point out devaluation stimulates a diminishing local production will augmented the flow of FDI and appreciation will adverse consequences on inflow of FDI in host countries. In the human capital variable the paper has used six different educational measures. From that measure it can see that gross school enrolment in pre-primary level and literacy rate are insignificant but rest of the measure are statistically significant. Human capital investment was a statistically significant determinant of FDI inflows; it is one of the most important determinants of FDI inflow and that over time human capital would assume an even greater impact on FDI. The coefficient

for tele-density used as a proxy for infrastructure is also find out to be positive and statistically significant at 1% significance level because availability of better communication infrastructure that lead investors to choose a particular location. Financial development is a significant element for attracting FDI also. Above mentioned estimation demonstrate that host countries market size, economic development, macroeconomic stability, human capital and infrastructure are the inseparable and distinctive function for conglomeration of substantial amount of FDI for host developing country.

Table 5. Estimation result- controlling for conventional FDI location pull factor

Est. Method/ Variables	Proxy Utilised	1	2	3	4	Fixed Effects 5	6	7	8	9	10	11	12	13	14	15	16
Market size	lnPop	2.1231* (0.1862)	2.1021* (0.1944)	2.1896* (0.1860)	2.1342* (0.1867)	2.1371* (0.1822)	2.1293* (0.1891)	2.1451* (0.1876)	2.1128* (0.1882)	2.1031* (0.1883)	2.1341* (0.1891)	2.1022* (0.1893)	2.1043* (0.1896)	2.1373* (0.1895)	2.1203* (0.1843)	2.1132* (0.1822)	2.1136* (0.1877)
Economic Development	lnGDP PC	1.1866* (0.0495)	1.1791* (0.0516)	1.1823* (0.0484)	1.1793* (0.0496)	1.1845* (0.0484)	1.1877* (0.0506)	1.1743* (0.0601)	1.1825* (0.0575)	1.1704* (0.0637)	1.1871* (0.0769)	1.1847* (0.0588)	1.1790* (0.0457)	1.1844* (0.0478)	1.1794* (0.0511)	1.1766* (0.0572)	1.1842* (0.0591)
Openness	Trade% GDP	1.0721* (0.0623)	1.0744* (0.0612)	1.0749* (0.0624)	1.0743* (0.0630)	1.0782* (0.0628)	1.0728* (0.0629)	1.0729* (0.0627)	1.0746* (0.0622)	1.0744* (0.0625)	1.0729* (0.0626)	1.0737* (0.0621)	1.0722* (0.0619)	1.0741* (0.0622)	1.0730* (0.0627)	1.0711* (0.0626)	1.0748* (0.0627)
Macroeconomic stability	ln Inflation		-0.5234* (0.0121)	0.5122* (0.0122)	-0.5244* (0.0120)	-0.5231* (0.0121)					0.0526φ (0.0125)	0.0519φ (0.0124)			0.5121* (0.0122)	0.0526* (0.0124)	0.5222* (0.0120)
	lnEx. Rate		0.2017* (0.0182)	0.2105* (0.0187)	0.2093* (0.0192)	0.2088* (0.0187)	0.2017* (0.0169)	0.2016* (0.0161)	0.2007* (0.0142)	0.2044* (0.0137)	0.2017* (0.0164)	0.2014* (0.0158)	0.2089* (0.0183)	0.2045* (0.0191)		0.2017* (0.0166)	0.2017* (0.0165)
	%GSEPP		0.0407* (0.0230)	0.0408* (0.0234)	0.0408* (0.0231)						0.0411* (0.0243)						
	%GSEP					0.1703φ (0.1062)	0.1629φ (0.1031)			0.1471* (0.1122)	0.1458* (0.1088)	0.1439 (0.1206)	0.1473* (0.1242)	0.1474* (0.1263)	0.1477* (0.1269)	0.1482* (0.1266)	0.1477* (0.1269)
Human Capital	%GSES				0.1345* (0.0812)	0.1422* (0.0817)	0.1445* (0.0822)										
	%GSET					0.1685* (0.0811)	0.1689* (0.0819)	0.1695* (0.0817)									0.1695* (0.0822)
	Literacy Rate							0.1352 (0.1148)	-0.1302 (0.1100)	-0.1307 (0.1131)							
	Av Years School										0.1127* (0.0341)	0.1133* (0.0378)	0.1142* (0.0385)				
Infrastructure Availability	lnTele Density										0.2201* (0.0116)	0.2145* (0.0109)	0.2212* (0.0122)				
	ln GFCF												0.2131 (0.0183)	0.2121 (0.0108)	0.2231 (0.0128)		
	DCBS% GDP													0.0060 (0.0008)	0.0060 (0.0012)	0.0052 (0.0021)	
	DCPS% GDP														0.0033* (0.0009)	0.0031* (0.0012)	
	M3% GDP															0.0003 (0.0011)	
Financial Development	ln LDCT															0.1121* (0.0102)	
	MCLC % GDP																0.0006* (0.0001)
R-Squared		61.21.%	61.29%	60.45%	60.55%	61.92%	62.81%	61.88%	62.12%	62.02%	61.41%	60.52%	59.81%	59.71%	60.02%	62.51%	60.13%
No. of Observation		1450	1450	1450	850	1450	1450	850	1050	1050	1050	1450	1350	1350	900	800	800

In the Table 6, the paper has elucidated the baseline model again; here it incorporated the number of trade agreement as a proxy for TRIMS. It also find out to be significant at 1% level and positive coefficient demonstrate that an increase in the number of trade agreements signed by the host causes additional inward *FDI*. Also evident from the table it is also explicate that the openness depleted from 0.92 to 0.81 with the introduction of TRIMS as a proxy. *TRIMs* Agreement is to promote the expansion and liberalization of world trade and to facilitate investment across international frontiers so as to increase the economic growth of all trading partners, particularly developing country Members, while ensuring free

competition. Developing country governments have deliberately thought that TRIMs counter the trade-restrictive and trade-distorting strategies of transnational corporations but here it is explore that preferential treatment may allow to engender substantial amount of FDI for developing country.

Here the paper has also test for the effects of *TRIPS* on enhancing a developing country's inward *FDI* potential. The coefficients for total trade marks, total and non-resident patents and Ginarte and Park index are positively significant at 1% level. IPR protection is considered as pre-condition for FDI. Economic analysis also shows that sufficient IPRs protection is an essential component of increased inward FDI and trade flows in IPRs-sensitive goods for countries cherishing to make economic development since the IPRs-initiated FDI brings in investment securities for IPRs-owning countries through effective rent payments. Implementing the *TRIPS* agreement will augment the capabilities for attracting more *FDI* and also enhance the shielding measure that spiraling *MNCs* to defend their market share. So from the table 6,it has explored that there is an affirmative consequence of a larger market, degree of development, market liberalization, macroeconomic stability, TRIMS and TRIPS on FDI for developing country.

Table 6. Estimation result-controlling for the three major wto components i-e trims, trips and liberalization

Estimation Method	Proxy Variables	Fixed Effect										
		1	2	3	4	5	6	7	8	9	10	11
Market Size	Ln Population	1.1311* (0.1011)	1.1615* (0.1002)	1.1211* (0.1013)	1.3121* (0.1011)	1.2111* (0.1031)	1.1131* (0.1004)	1.1432* (0.1031)	1.1921* (0.1011)	1.1231* (0.1019)	1.1321* (0.1009)	1.1341* (0.1119)
Economic Development	Ln GDPPC	1.1121* (0.0531)	1.1231* (0.0511)	1.1544* (0.0523)	1.1210* (0.0529)	1.1101* (0.0564)	1.1552* (0.0501)	1.1518* (0.0503)	1.2211* (0.0521)	1.2263* (0.0535)	1.1511* (0.0521)	1.1211* (0.0531)
Openness	Trade % GDP	0.8142* (0.0785)	0.8022* (0.0795)	0.84032* (0.0799)	0.7812* (0.0794)	0.7834* (0.0808)	0.8013* (0.0812)	0.7904* (0.0812)	0.7913* (0.0795)	0.7751* (0.0796)	0.7932* (0.0795)	0.7948* (0.0853)
Macroeconomic Stability	Exchange Rate	0.1942* (0.0142)	0.1918* (0.0139)	0.2001* (0.0149)	0.1961* (0.0144)	0.1904* (0.0148)	0.1944* (0.0147)	0.1932* (0.0142)	0.1928* (0.0142)	0.1917* (0.0141)	0.1923* (0.0142)	0.1922* (0.0143)
Human Capital	Education	0.2745φ (0.1375)	0.2658φ (0.1368)	0.2784φ (0.1368)	0.2673φ (0.1371)	0.2681φ (0.1369)	0.2691α (0.1368)	0.2788α (0.1368)	0.2741α (0.1367)	0.2894α (0.1369)	0.2762φ (0.1367)	0.2706φ (0.1418)
TRIMS	Tas		0.3105* (0.0532)	0.3022* (0.0521)	0.3041* (0.0541)	0.3036* (0.0544)	0.3039* (0.0545)	0.3025* (0.0547)	0.3038* (0.0545)	0.3044* (0.0546)	0.3029* (0.0547)	0.3041* (0.0546)
TRIPS	Trade Marks				0.0231* (0.0109)							
	Industrial Design					-9.83E-05	0.0121 (0.0008)	0.0110 (0.0014)				
	Patents								0.0213* (0.0086)	0.0211* (0.0063)	0.0203* (0.0071)	0.0213* (0.0088)
	G&P Index										0.2788* (0.0219)	0.2876* (0.0206)
R-Squared	R-Squared	61.22%	64.73%	63.11%	63.26%	63.45%	64.22%	64.45%	64.52%	64.53%	64.77%	64.86%
No of Observation	Number of observation	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450

From the Table 7, the paper has introduced the WTO as dummy, it is significant at 1% level and the positive coefficient shows that it directs swell in inward FDI. It condenses the individual coefficients of trade openness from 0.89 to 0.84 and that of TRIMS from 0.50 to 0.24, showing that they were partly representing the WTO effect. TRIPS coefficient which is doubles from 0.02 to 0.04 and its significance level increases from 5% to 1%. This make obvious that WTO association escort to escalation of IPRs in the developing countries and accelerates their FDI. World Trade Organization *(WTO)* agreement caused overall global trade liberalization and the inclusion of *TRIMS* and *TRIPS* agreements facilitate to decelerated the trade related impediments for proliferation of FDI along with an apropos and commensurate improved their intellectual property rights standards resulting increase the inflow of FDI. Geographic location coefficient also find out statistically significant and positive. Because location is an important ingredient when a company gains from its presence in a given market by benefiting from conditions such as: special tax regimes; lower production and transport costs; market size; access to protected markets, and lower risk. Access to sea has a significant effect and the positive coefficient exhibits that a host country is expected to receive more inward *FDI* if it is not landlocked. Sea ports that alleviate the ocean transportation cost and increase the importance for conducting the transaction and transferring the goods.

Here the paper has also included the language as dummy is significantly negative. The non-resident (foreign) patents as a control variable for *TRIPS*, however, the same results can be observed like total trademarks, total patents and Ginarte and Park index.

Table 7. Estimation result-controlling for WTO membership and time invariant phenomenon

Estimation Method	Proxy Utilized	Random Effects											
		1	2	3	4	5	6	7	8	9	10	11	12
Market Size	Ln Population	0.7531*	0.7422*	0.7456*	0.7481*	0.7489*	0.7477*	0.7436*	0.7408*	0.7429*	0.7419*	0.7462*	0.7418*
		(0.0421)	(0.0423)	(0.0428)	(0.0422)	(0.0425)	(0.0424)	(0.0422)	(0.0425)	(0.0424)	(0.0423)	(0.0422)	(0.0421)
Economic Development	Ln GDPPC	1.0125*	1.0129*	1.0228*	1.0234*	1.0256*	1.0271*	1.0288*	1.0341*	1.0371*	1.0311*	1.0378*	1.0362*
		(0.0167)	(0.0173)	(0.0174)	(0.0177)	(0.0179)	(0.0176)	(0.0179)	(0.0181)	(0.0180)	(0.0179)	(0.0182)	(0.0184)
Openness	Trade% GDP	0.7321*	0.7426*	0.7488*	0.7492*	0.7495*	0.7456*	0.7561*	0.7527*	0.7437*	0.7369*	0.7425*	0.7404*
		(0.0438)	(0.0433)	(0.0439)	(0.0437)	(0.0441)	(0.0443)	(0.0445)	(0.0442)	(0.0440)	(0.0446)	(0.0442)	(0.0447)
Macroeconomic Stability	Exchange Rate	0.1261*	0.1342*	0.1367*	0.1368*	0.1345*	0.1324*	0.1355*	0.1420*	0.1424*	0.1415*	0.1409*	0.1419*
		(0.0105)	(0.0116)	(0.0118)	(0.0119)	(0.0116)	(0.0115)	(0.0121)	(0.0125)	(0.0122)	(0.0124)	(0.0125)	(0.0126)
TRIMS	Tas	0.1872*	0.1744*	0.1765*	0.1732*	0.1831*	0.1837*	0.1874*	0.1873*	0.1864*	0.1844*	0.1877*	0.1839*
		(0.0344)	(0.0371)	(0.0382)	(0.0373)	(0.0385)	(0.0386)	(0.0392)	(0.0390)	(0.0388)	(0.0381)	(0.0395)	(0.0384)
TRIPS	Non Res. Patents	0.0202*	0.0210*	0.0213*	0.0217*	0.0219*	0.0225*	0.0232*	0.0235*	0.0221*	0.0227*	0.0234*	0.0228*
		(0.0015)	(0.0021)	(0.0025)	(0.0028)	(0.0029)	(0.0031)	(0.0034)	(0.0035)	(0.0037)	(0.0041)	(0.0044)	(0.0042)
WTO	Membership	0.2321*	0.2355*	0.2341*	0.2356*	0.2361*	0.2366α	0.2373α	0.2378*	0.2379α	0.2381α	0.2384α	0.2341α
		(0.0431)	(0.0429)	(0.0438)	(0.0439)	(0.0432)	(0.0435)	(0.0436)	(0.0438)	(0.0439)	(0.0441)	(0.0442)	(0.0438)
	South Asia	2.0826α	2.0829α	2.0968α		2.0898α	2.0962α	2.0944α	2.0988*	2.0993α	1.0781α	2.0978 α	2.0954α
		(0.4985)	(0.4985)	(0.4985)		(0.4870)	(0.4855)	(0.4925)	(0.5002)	(0.4925)	(0.4925)	(0.4877)	(0.4867)
7Geographic Regions	Latin Am & Caribben			0.2322*	0.2344*	0.2361*	0.2450α	0.2783	0.2747*	0.2788*	0.2659	0.2634	0.2540*
				(0.1243)	(0.1262)	(0.1321)	(0.1392)	(0.1329)	(0.1344)	(0.1393)	(0.1380)	(0.1388)	(0.1395)
Sea Access	Dummy				0.2321*	0.2246*	0.2349	0.2433*	0.2541	0.2388	0.2459*	0.2471*	0.2540*
					(0.2390)	(0.2461)	(0.2431)	(0.2461)	(0.2444)	(0.2360)	(0.2554)	(0.2555)	(0.2529)
	English					0.5233*			0.5341φ	0.5344φ	0.5347φ	0.5325	0.5410*
						(0.2128)			(0.3063)	(0.3058)	(0.3067)	(0.3154)	(0.3146)
Language	French							0.4309*	0.4201*	0.4341*		0.4437	0.4573*
								(0.1234)	(0.1342)	(0.1348)		(0.1244)	(0.1322)
	Low Income									0.2314	0.2241	0.2278*	0.2351
										(0.2908)	(0.2877)	(0.2945)	(0.2908)
Income Groups	Low Middle Income									0.3128	0.3134*	0.3103	0.3002
										(0.1203)	(0.1194)	(0.1182)	(0.1180)
Time Trend													0.2210*
													(0.0210)
R-Squared		68.22%	65.42%	62.11%	63.30%	62.45%	65.28%	65.79%	65.29%	67.43%	65.34%	65.99%	66.23%
No of Observation		1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450

Table 8 interpreted that the lagged value of FDI accumulated stock as a proxy. The coefficient for agglomeration is strongly positive in all the specifications. Strong agglomeration effects are found on FDI inflow. Increasing the number of firms in a specific location stimulating to reduce the cost of production and accumulating manifold skills for the indigenous local producers and MNC having a conducive environment for economic scale and avenue for differentiating their products. Market size, economic development, liberalization, *TRIMS*, *TRIPS* (patents) still exerts a significant effect; whereas, labor skills and macroeconomic stability are sensitive to specifications because of this significant and positive effect on FDI, agglomeration may be diverted as a significant effect.

Table 8. Estimation result-dynamic mode

Estimation Method/Variables	Proxy Utilized	Arellano-Bover/Blundell-Bond										
		1	2	3	4	5	6	7	8	9	10	11
Agglomeration	LFDI Stock	0.8123* (0.0071)	0.8145* (0.0072)	0.8122* (0.0071)	0.8171* (0.0068)	0.8323* (0.0074)	0.8321* (0.0073)	0.8341* (0.0072)	0.8211* (0.0071)	0.8355* (0.0075)	0.8331* (0.0073)	0.8362* (0.0074)
Market Size	Ln Population	0.4531* (0.0312)	0.4451* (0.0304)	0.4649* (0.0301)	0.4572* (0.0311)	0.4491* (0.0301)	0.4532* (0.0322)	0.4438* (0.0319)	0.4450* (0.0313)	0.4521* (0.0301)	0.4412* (0.0303)	0.4581* (0.0326)
Economic Development	Ln GDPPC	0.2121* (0.0211)	0.2142* (0.0217)	0.2043* (0.0221)	0.2055* (0.0223)	0.2182* (0.0218)	0.2144* (0.0209)	0.2113* (0.0214)	0.2032* (0.0218)	0.2091* (0.0201)	0.2052* (0.0204)	0.2088* (0.0206)
Openness	Trde% GDP	0.2213* (0.0231)	0.2134* (0.0221)	0.2139* (0.0251)	0.2122* (0.0224)	0.2071* (0.0219)	0.2031* (0.0213)	0.2221* (0.0242)	0.2051* (0.0291)	0.2009* (0.0233)	0.2004* (0.0249)	0.2311* (0.0218)
Macroeconomic Stability	Exchange Rate		0.0203* (0.0025)			0.0209* (0.0041)	0.0211* (0.0033)		0.0204* (0.0012)	0.0201* (0.0045)	0.0213α (0.0024)	0.0191 (0.0013)
	Inflation			-1.24E-06	0.0001 (0.0021)			0.0001 (0.0021)				
Human Capital	Education				0.1021φ (0.0412)	0.0651 (0.0481)	0.0712 (0.0423)	0.0641 (0.0411)	0.0610 (0.0464)	0.0521 (0.0418)	0.0509 (0.0411)	0.0510 (0.0416)
TRIMS	TAs						0.0429α (0.0135)	0.0521* (0.0137)	0.0511α (0.0121)	0.0418φ (0.0127)	0.0411α (0.0122)	0.0405φ (0.0109)
	Trade Marks								-1.5E-05			
	Industrial Design									0.0021 (0.0001)		
	Patents										0.0123* (0.0042)	
TRIPS	G & P Index											0.0003 (0.0102)
Wald Test Probability>Chi²		0	0	0	0	0	0	0	0	0	0	0
Sargan Test Probability>Chi²		1	1	1	1	1	1	1	1	1	1	1

From the TSLS regression shows that large market size is always attract FDI. On average one percent increase in GDP per capita will increase foreign direct investment net inflows as percent of GDP 2.31percent. Similarly on average one percent increase in trade openness by minimizing tariffs and non-tariffs barriers will increase foreign direct investment net inflows as percent of GDP by 1.37percent. On the other hand on average of one percent increase in human capital will increase the foreign direct investment net inflow as percent of GDP by 1.24 percent. Macroeconomic stability also leads to flourishing FDI. In the TSLS regression shows that on average one percent increase in macroeconomic stability will increase foreign direct investment net inflows as percent of GDP 2.72 percent. On average one percent increase in

agglomeration will increase foreign direct investment net inflows as percent of GDP 2.31percent. Strengthening infrastructure will increase the FDI. Here in the TSLS regression we see that on average one percent increase in infrastructure will increase the foreign direct investment net inflow as percent of GDP by 2.31 percent. On average one percent increase in financial development will increase the foreign direct investment net inflow as percent of GDP by 1.87 percent. Geographical location and language is also stimulating foreign direct investment. Protection of IPR in accordance with TRIPS and provisions of TRIMS is also increasing FDI for developing country.

Table 9. Determinate of foreign direct investment

	Dependent variables (FDI)			
	OLS		TSLS	
	I	II	I	II
Market Size	0.4241(0.2331)	0.4241(0.2457)	2.8451(1.4344)	2.8451(1.4344)
Economic Development	0.3241(0.0041)	0.3241(0.0041)	0.4238(0.0231)	0.4238(0.0231)
Openness	0.2119(0.0321)	0.2119(0.0321)	0.3244(0.0137)	0.3244(0.0137)
Human Capital	0.1120(0.0152)	0.1120(0.0152)	0.1347(0.0124)	0.1347(0.0124)
Macroeconomic Stability	0.1891(0.0215)	0.1891(0.0215)	0.2170(0.0272)	0.2170(0.0272)
Agglomeration	0.1567(0.0237)	0.1567(0.0237)	0.2688(0.01829)	0.2688(0.01829)
Infrastructure	0.1577(0.0105)	0.1577(0.0105)	0.1956(0.0231)	0.1956(0.0231)
Financial Development	0.1942(0.0155)	0.1942(0.0155)	0.2541(0.0187)	0.2541(0.0187)
Geographical Location	0.0111(0.0129)	0.0111(0.0129)	0.0165(0.0154)	0.0165(0.0154)
Language	0.0089(0.0014)	0.0089(0.0014)	0.0096(0.0029)	0.0096(0.0029)
TRIPS	0.0281(0.0031)	0.0281(0.0031)	0.0292(0.0047)	0.0292(0.0047)
TRIMS	0.0106(0.0039)	0.0106(0.0039)	0.0178(0.0042)	0.0178(0.0042)
Time Fixed Effect	YES	YES	YES	YES
Robust Standard Error	YES	YES	YES	YES
Clustered Standard Error	NO	YES	NO	YES
Observation	1450	1450	1450	1450
R^2	0.8123	0.8123	0.8562	0.8562

5. Conclusion

The fundamental objectives of this paper is to determine the effects of TRIMS, TRIPS, WTO membership and trade liberalization on flowing of FDI in developing countries. The result demonstrate that by decelerating TRIMS related market distortion, consolidate and consistent framework of protection mechanism of the IPR with the light of TRIPS and unremitting trade liberalization procedure undoubtedly accelerate the flow of FDI in the developing country. Market size, economic advancement and agglomeration positively significant for flowing of

FDI in developing country as well as human capital, infrastructure, macroeconomic stability also influence to flow of FDI in developing country. Strong financial development in the developing country can attract FDI inflow also. Finally geographical distance also makes a prime role for making investment decision in developing country.

Due to the transition of the business and economics multinational firms consider to make an investment by considering the multitudinous factors specifically the IPR protection and host countries institutional strength and macroeconomic stability. For ensuring the advancing economic phenomenon in the developing countries the host countries government inducing the MNC to construct investment with manifolds incentives. Robust transition of the behavior of host countries government and engaging the WTO membership helps the Developing country to recognize the affirmative avenue to reinforce and consolidate economic resilience with the substantial and rational policies and procedures.

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