

# Foreign Direct Investment and Trade Related Intellectual Property Rights (TRIPS): The Case of Latin American & Caribbean Developing Economies

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## ABSTRACT

The growing share of knowledge-intensive products in international trade and the increasing sensitivity of multinational firms to intellectual property theft make it imperative to analyse the effect of IPR promulgation on their FDI decision. In this perspective the current article gauge the importance of Trade Related Intellectual Property Rights (TRIPS) agreement under World Trade Organisation (WTO) in increasing a Latin American & Caribbean (LAC) developing economy's appeal for investors from abroad. Infrastructure and skilled labour availability, market size, macroeconomic stability, economic development and trade liberalisation are also considered. Time invariant phenomena such as access to the sea, regional affiliations/proximities, income groupings and ability to speak one of the international languages, though desirable were not done because fixed effect panel estimation technique does not permit the use of dummy variables.

Due to the 2008-2009 recession in the developed economies, the available investment funds withered, making the investors' sceptic apropos the safety of their tangible and intangible property, especially in the developing world, causing a decrease in FDI to these nations in general. However, LAC countries were somewhat resilient and received a steadily increasing flow of foreign investment. Thus, it demands for analysing the factors that overcame the overseas investors' scepticism and prompted them to invest in LAC region. By utilising annual data for 28 years that is 1989-2016 from 24 LAC developing nations it is found that infrastructure and human capital availability, macroeconomic stability, economic development, strengthening and worldwide harmonisation of intellectual property right standards through TRIPS positively effects the overseas investor's investment decision. The host population used to measure market size is found to be insignificant when tested with other conventional FDI location pull factors. Similarly, liberalisation, consistent with horizontal FDI theory, exerts a significant negative effect on inward FDI.

**Keywords:** FDI, WTO, TRIPS, Intellectual Property Rights, Patents, Trademarks, Latin American and Caribbean Nations

**JEL Classifications:** C230, F130 and O340

## 1. INTRODUCTION

Recent empirical evidence indicates that improving the business environment and elimination of market interventions positively affect foreign direct investment (FDI)

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inflows (Zhang & Yang, 2016). At the same time, the continuously increasing share of knowledge focused merchandise in multinational trade points to the growing importance of international intellectual property rights (IPRs) standards for overseas investors (Nkomo, 2015). Apart from this multinationals investment choice certainly requires the provision of necessary infrastructure, the existence of a sound macroeconomic environment and the availability of skilled labour force to help the overseas enterprises to optimally augment the imported technology with the local resources (Bessonova & Gonchar, 2015).

The role of World Trade Organisation (WTO) has drawn inadequate attention from researchers exploring overseas investors and multinational investment behaviour. So far, they have not studied the influence of TRIPS agreement in particular on FDI inflows to the Latin American and Caribbean (LAC) developing countries.

According to United Nations Conference on Trade and Development, World Investment Report (UNCTAD, WIR), 2012 FDI to the LAC countries steadily grew from 2005 to 2011 peaking at US\$ 217 billion. The inflows are slowing down since 2014, and for 2016 it was US\$ 142 billion, (UNCTAD WIR, 2017). Among the developing countries, they are second only to Asia. This is also primarily due to the substantial FDI in China and India. Receiving 8.1% of global inward FDI they are performing better than the transition economies at only 3.9%. Despite the regional slowdown, Brazil remains the main FDI destination followed by Mexico, Colombia, Chile and Peru (UNCTAD WIR, 2017). Even 2014 commenced with new opportunities arising in oil and gas sector and brighter prospects in manufacturing. However, the decline in oil prices and deteriorating commodity rates adversely effected investments into extractive industries and automobiles manufacturing for the next two years (UNCTAD WIR, 2016). Despite all this, if we look at the stock of FDI in LAC countries it grew from a meagre \$40 billion to \$1.9 trillion by 2016. It highlights the fact that though, the rate of inward FDI has decreased still multinationals' are retaining their investments in the region<sup>1</sup>.

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<sup>1</sup>According to UNCTAD, WIR (2009, table B.1, page 248) FDI in LAC was \$76 billion in 2005, \$93b in 2006, \$127b in 2007 and \$144b in 2008. The UNCTAD, WIR (2012, tableII.1, page 38) puts it at \$149.4b in 2009, \$187.4b in 2010 and \$217b in 2011. Similarly, UNCTAD, WIR (2015, table II.1, page 30) says that LAC received 12.7% of FDI in 2012, 2013 and 13% in 2014.

TRIPS agreement under WTO regulating worldwide intellectual property standards has become immensely important due to the continuous efforts by national governments to transmute towards a knowledge centred economy (Li & Yu, 2015). Increasing globalisation of business activities and the role of technological development in economic progress has made the attainment of minimum universal intellectual property standards an essentiality (Awokuse & Gu, 2015) that has to be explored by academicians, researchers, policy making bodies as well as multinational and local firms (Lai & Yan, 2013). Therefore, it seems suitably well-timed and appropriate to gauge the possible effects of TRIPS on inward FDI (Dreher, Mikosch & Voigt, 2015).

Similarly, the transformation from “rent-seeking” to “efficiency-seeking” paradigm in foreign direct investment is primarily due to the shift from the “old tariff factory” overseas industrial organisation model to knowledge-intensive global industrial production. This requires the existence of laws protecting IPRs in the host economy and some dispute settlement method. Under the country to country disagreement settlement process WTO renders a binding decision on the violator in case if the two member nations have a dispute. This penalty needs not to be unanimous like the majority of decisions taken by WTO. Consequently, for creating a business friendly, free of IPR theft atmosphere in the economy of the host nation it seems pertinent and well timed to keep exploring the factors influencing overseas investors’ investment choice. The finding of this study will certainly add to the existing FDI literature by empirically examining, for the first time, the importance of TRIPS for inward foreign investment in LAC economies.

The next section of the paper summarises location FDI literature as well as the relationship between TRIPS agreement and FDI inflows. Estimation model and empirical concerns are addressed in section three followed by results and analysis in the fourth one. The paper concludes with section five.

## 2. LITERATURE REVIEW

Multinationals prefer large economies because they provide greater diversification opportunities and helps in sustaining supplementary economic activities (Blonigen & Piger, 2014; Awokuse & Gu, 2015). According to Loungani, Mody, and

Razin, (2002) the form and category of incoming FDI reflects the extent of economic development the host economy has achieved and it becomes gradually more horizontal with domestic economic progress (Maskus, 1998a). Similarly, foreign investors with high tech component prefer relatively advanced nations because of its direct association with human capital (Egger & Winner, 2005). Moreover, economic liberalisation (Greenaway, Sapsford, & Pfaffenzeller, 2007; Shah & Samdani, 2015), availability of skilled labour force (Maskus, 2000, 2002) and the expected quality of domestic infrastructure shall positively affect FDI inflows (Rietveld & Janssen, 1990; Sun, Tong & Yu, 2002; Dunning, 2009).

### **2.1. Trade Related Aspects of Intellectual Property Rights (TRIPS)**

Minimum required benchmarks for intellectual property rights that are patents, trademarks, industrial designs, copyrights etc. are stipulated by the Trade Related Intellectual Property Rights (TRIPS) arrangement in World Trade Organisation's (Yamabhai & Smith, 2012). It thoroughly outlines the required IPR laws and their enforcement (Park, 2008) without reservations, but the agreement doesn't preclude any member from adopting stronger procedures (Awokuse & Gu, 2015). As intellectual property rights (IPRs) are a critical component of national business regulatory regimes it is expected that conforming to the TRIPS agreement shall certainly improve the institutions domestically responsible for IPR. According to Maskus (1998b), the least required by TRIPS agreement is much more than the norm in most developing countries. However, TRIPS gives the WTO signatory nation a lot of choice in terms of choosing the right set of policies to warrant the presence of requisite level of intellectual property rights protection stipulated in WTO as long as they do not unduly frustrate the intentions of TRIPS (Desbordes & Vicard, 2009).

TRIPS obligations include immediate provision of national and most favoured nation (MFN) treatment to all members (Li, 2006) in consonance with Paris Convention which also requires the provision of national treatment for all foreign firms (Khoury &

Peng, 2011)<sup>2</sup>. In case of disputes over IPR issues TRIPS also specifies a dispute settlement mechanism.

It extensively covers the copyright & the other associated rights for example the rights of broadcasting organisations, performers, sound recorders and producers as well as databases and computer programs; terrestrial clues of origin; trademarks related to manufacturing as well as services sector; integrated circuits and their layout designs; industrial designs plus patents that also covers latest varieties of plants registered. Member countries can't exclude any area and in case of infringement, the burden of proof lies on the accused. Firm's unrevealed information such as test data and trade secrets are also included. The minimum protection under TRIPS varies for the different categories for example Copyrights for a minimum of 50 years (Article 10.1 & 12), patents at least 20 years (Article 33), phonogram producers and performers 50 years, broadcasting organizations 20 years (Article 14.5), industrial designs 10 years divisible in two five year terms (Article 26.3) and layout designs for integrated circuits 10 years (Article 38)<sup>3</sup>.

Sensing the growing economic and commercial interdependence in worldwide trade, WTO is not only cutting trade restrictions and reducing tariffs but also constantly prodding the signatory regimes to continue parleys regarding enhancing intellectual property right protected under the TRIPS agreement charter (Yang & Cheng, 2008). Prior to TRIPS, each country's IPR systems were mostly an affair of individual choice, subject only to requirements of any international convention or treaty it felt appropriate to join (Maskus, 1997). TRIPS harmonised and strengthened minimum IPR protection standards worldwide and tilted the balance of economic rewards toward original, innovative and inventive interests and away from copying, imitation, adaptation and reverse engineering (Dreher et al., 2015).

Developed nations were given one year and developing / transition economies five years to bring their IPR regimes at par with TRIPS (Nkomo, 2015). Nevertheless, the least developed countries that on average have low levels of patent protection and needs to bring about the highest level of required modifications are given an extension for

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<sup>2</sup>. Khoury & Peng (2011) thoroughly analyzed the effect of signing the Paris Convention on inbound FDI.

<sup>3</sup>. The details are available at [http://www.wto.org/english/tratop\\_e/trips\\_e/intel2\\_e.htm](http://www.wto.org/english/tratop_e/trips_e/intel2_e.htm).

patents till 2016. They have to bring their other prevalent IPR regulations in tandem with TRIPS by July 2013. These relaxations were granted on 29 November 2005 under article 66.1<sup>4</sup>.

Though through TRIPS agreement the research on and the interest in the subject of worldwide protection of property rights has intensified (Ginarte & Park, 1997), its expected effects on FDI are debatable. On one hand, by discouraging imitation and counterfeiting it shall help multinationals to recapture the consumer market (Helpman, 1993) and increase profit from FDI. On the other hand, stronger trademarks and patents will make arm's length licensing more cost effective causing FDI substitution (Chen, 2013). Although, not the focus of the current paper it points towards enacting sound competition policies in developing countries to check the activities of multinationals post-WTO and TRIPS (Smeets & de Vaal, 2016).

TRIPS-FDI linkage also varies from sector to sector, based on their sensitivity to IPR standards (Ivus, Park, & Saggi, 2016). MNCs in the services sector and those manufacturing products that are hard to imitate or with a high capital requirement such as automobiles will be indifferent. Whereas, MNCs dealing in pharmaceuticals, detergents, cosmetics, software, electrical equipment etc. will be apprehensive of weak IPR regime (Javorcik, 2004). Countries seeking investments in these sectors are expected to offer strong protection to these firms in order to affect their decision of how best to serve international markets between inter-firm or intra-firm choices.

The FDI sensitivity is also somehow dependent on the host country's stage of development. Developing countries with a relatively capital-intensive labour force have greater abilities to imitate and reverse engineer new technologies (Ledyaeva, Karhunen, Kosonen, & Whalley, 2015).

Similarly, a weak IPR regime increases imitation possibilities thus eroding MNC's ownership and a country's location advantages but add to the benefits of internalisation. Hence based on a nation's state of IPR promulgations, MNCs can choose between licensing, FDI, exports, joint ventures etc. to serve an overseas market and the rapport between IPR protection through TRIPS and overseas investment is an empirical

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<sup>4</sup> The details are available at the WTO website  
[http://www.wto.org/english/news\\_e/pres05\\_e/pr424\\_e.htm](http://www.wto.org/english/news_e/pres05_e/pr424_e.htm).

question that has yet to receive adequate attention. Data availability constraint for developing countries may partially be the reason for this oversight.

In accordance with the research findings of Lee and Mansfield (1996), Javorcik (2004), Seyoum (2006), Dreher et al. (2015) and Zhang and Yang (2016) the FDI inflows are expected to be directly responsive to the increasing intellectual property rights in developing economies. In the empirical analysis Ginarte and Park index, the number of total, resident and non-resident patents, industrial designs and trademarks, are used as alternative proxies for TRIPS to gauge the strength of IPRs in a developing country.

## 2.2. Research Hypothesis

The following hypotheses are set to answer objective of this study:

H<sub>0</sub>: Inward FDI to Latin American & Caribbean Countries is not affected by TRIPS.

H<sub>1</sub>: Inward FDI to Latin American & Caribbean Countries is significantly affected by TRIPS.

<b>Explanatory Variable</b>	<b>Possible Influence</b>
Size of the Domestic Market	+
Host Economy's Development	+
Trade Liberalisation	+
Rate of Exchange	+
Availability of Infrastructure	+
Human Capital	+
TRIPS	+

## 3. ESTIMATION MODEL AND EMPIRICAL CONCERNS

According to Wach and Wojciechowski (2016) it's pretty cumbersome to derive an empirical model based on FDI theory because multinationals global production activities combine features of international financial flows, worldwide trade (Ramondo, Rodríguez-Clare, & Tintelnot, 2015) and multinational political economy (Li, Vashchilko, & Vashchilko, 2010), but FDI in itself is a phenomenon more complex than all of them (Cantwell, 2015).” Nevertheless, on the basis of the arguments in introduction and literature review, the reduced form equation given below is assumed to gauge the influence of TRIPS implementation on investment inflows into Latin American and Caribbean developing nations:

$$FDI_{jt} = f \left( \begin{array}{l} \text{MarketSize}_{jt}, \text{EconomicDevelopment}_{jt}, \text{Openness}_{jt}, \\ \text{MacroStability}_{jt}, \text{Infrastructure}_{jt}, \text{LabourSkills}_{jt}, \text{TRIPS}_{jt}, \end{array} \right) \dots (1)$$

Where j is used to represent the 24 nations, among the developing countries, included by the World Bank in Latin American and Caribbean region namely: Argentina, Barbados, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Honduras, Jamaica, Mexico, Panama, Paraguay, Peru, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Trinidad and Tobago, Uruguay and Venezuela. Due to data non-availability Belize, Cuba, Dominica, Grenada, Haiti, Nicaragua and Suriname, though classified in the same geographical region cannot be included in the sample. The time subscript i-e t covering the 28 years from 1989 to 2016 varies from 1 to 28. FDI<sub>jt</sub> denotes the dependent variable. It is acknowledged that TRIPS depending on the extent of enforcement, influences differently the inward FDI. However, due to the unavailability of detailed microdata on different types of FDI (market and asset seeking, resource seeking, efficiency seeking and strategic asset seeking), sectors and sources (whether it is coming from a developing or a developed country) it is currently not possible to make any distinctions on these lines nor make any bilateral comparisons (Dunning, 2009).

Putting proper proxies for the independent variables in equation 1 gives:

$$\ln FDI_{jt} = \alpha_0 + \beta_1 \ln Population_{jt} + \beta_2 \ln GDPPcPPP_{jt} + \beta_3 \ln Trade_{jt} + \beta_4 \ln ExchangeRate_{jt} + \beta_5 \ln TeleDensity_{jt} + \beta_6 GSEPP_{jt} + \beta_7 WTOmembership * \ln Patents_{jt} + \epsilon_{jt} \dots (2)$$

*ln* here denotes the natural logarithm. It is expected to reduce the heteroscedasticity in the explanatory variables. Population represents market size; GDPPcPPP i-e gross domestic product per capita adjusted for purchasing power parity is used for the extent of economic development. The total of exports plus imports taken as a percentage of GDP proxy's the magnitude of economic openness and exchange rate overall economic stability. Whereas, telephone density measures the availability of infrastructure and GSEPP, i-e gross school enrolment in pre-primary covers the presence and extent of labour skills. For TRIPS enforcement the number of resident and non-resident patents times the WTO membership is used. Summary statistics such as standard



deviation, mean, maximum, minimum and the median for all variables are given in table two.

Table 2: Descriptive Statistics						
Explanatory Variables	Proxied By	Mean	Median	Standard Deviation	Minimum	Maximum
<b>Stock FDI</b>	Ln FDISt	21.297	21.194	2.082	13.815	26.459
<b>Market Size</b>	Ln Population	15.248	15.543	2.039	10.599	19.063
<b>Economic Development</b>	Ln GDPPcPPP	8.460	8.481	0.620	6.870	10.169
<b>Trade Openness</b>	Ln Trade	4.186	4.186	0.611	2.529	5.639
<b>Exchange Rate</b>	Ln Xrate	2.362	1.367	2.139	1.920	8.768
<b>Infrastructure</b>	Ln TeleM	13.080	12.938	2.223	8.768	18.893
<b>Human Capital</b>	Ln GSEPP	3.943	4.022	0.495	2.232	4.960
<b>TRIPS</b>	WTO Ln RP	0.630	0.056	1.430	0.000	6.530

\*Values are rounded off to three decimal places

### 3.1. Specification Test

Having a large cross-section of 24 Latin American & Caribbean Countries for 28 years the specification tests are carried out to select the appropriate estimation technique between pooled OLS and panel random and fixed effect methods.

The F-Test favours the use of panel fixed effects over pooled OLS with the following statistics: F test that all  $u_i = 0$ :  $F(22, 344) = 40.37$  Probability  $> F = 0.0000$ . Using the Breusch and Pagan Lagrangian multiplier test for random effects versus pooled OLS,  $\text{Infdist}[id,t] = Xb + u[id] + e[id,t]$ , support the use of panel random effects over pooled OLS with the following statistics:  $\text{Chibar}^2(01) = 1120.70$  Probability  $> \text{Chibar}^2 = 0.0000$ . Since both the test recommends panel data against pooled OLS the Hausman (1978) specification test was carried out to choose among random and fixed effect techniques. The test favours the use of Fixed Effects with the following statistics  $\text{Chi}^2(7) = (b - B)'[(V_b - V_B)^{-1}](b - B) = 23.75$  and Probability  $> \text{Chi}^2 = 0.0013$ . These statistics rejects the absence of possible relationship among the explanatory variables  $X_{jt}$  and discrete factor  $\alpha_j$ .

### 3.2. Multicollinearity

To check for the existence of problematic multicollinearity between the explanatory variables the correlation between them as well as the Variance Inflation

Factor (VIF) was calculated. A mean VIF of 4.29 indicates the nonexistence of problematic multicollinearity. The same is evident from the correlation matrix given as table three.

Serial Number	Variable Name	<i>i</i>	<i>ii</i>	<i>iii</i>	<i>iv</i>	<i>v</i>	<i>vi</i>	<i>vii</i>	<i>viii</i>
<i>i</i>	FDI Stock	100							
<i>ii</i>	Market Size	77	100						
<i>iii</i>	Economic Development	58	09	100					
<i>iv</i>	Trade Openness	-56	-73	-20	100				
<i>v</i>	Exchange Rate	05	11	-06	14	100			
<i>vi</i>	Infrastructure	90	87	43	-62	15	100		
<i>vii</i>	Human Capital	18	-21	35	21	-04	04	100	
<i>viii</i>	TRIPS	63	54	31	-45	02	58	11	100

\*Values rounded off to the nearest percentage

### 3.3. Heteroscedasticity

Utilising Szroeter's test for homoscedasticity confirms the existence of heteroscedasticity in the dependent as well as all the independent variables except for development level and exchange rate as evident from table four. Therefore, the robust option will be used while carrying out all the estimations to control for the prevailing heteroscedasticity.

Variable Name	Abbreviations	Chi Square	Degree of Freedom	Probability Value
<b>FDI Stock</b>	Ln FDISt	21.83	1	0.0000
<b>Market Size</b>	Ln Population	4.15	1	0.0416
<b>Economic Development</b>	Ln GDPPcPPP	0.05	1	0.8272
<b>Trade Openness</b>	Ln Trade	7.14	1	0.0075
<b>Exchange Rate</b>	Ln Xrat	1.36	1	0.2441
<b>Infrastructure</b>	Ln TeleM	5.36	1	0.0206
<b>Human Capital</b>	Ln GSEPP	4.80	1	0.0285
<b>TRIPS</b>	W Ln NRP	14.37	1	0.0002
	W Ln RP	7.67	1	0.0056

H<sub>0</sub>: Constant Variance, H<sub>1</sub>: Monotonic Variance in Variable

## 4. RESULTS AND ANALYSIS

The results given in table five are estimated through fixed effects panel estimation method. The first model shows the significance of large market size for overseas investors. However, it is evident from the remaining estimations that it is

sensitive to the addition of other variables to the model. This is in line with the findings of Palit and Nawani (2007). They found it to be negatively significant or altogether insignificant for inward FDI in a set of fourteen developing economies from Asia. The array of the positively significant coefficient for purchasing power parity-adjusted gross domestic product per capita reveals the importance of development level for multinationals. Trade openness introduced in model iii is insignificant. Using direct exchange rate i-e 1 United States Dollar equal to the number of units of the local currency gives a significant and positive coefficient in model iv, exhibiting the need for macro-stability for foreign direct investors. The slowly changing/depreciating, relatively stable value of the domestic currency conveys the needed signal about the steady state of the economy to the foreign business diaspora thus increasing inward FDI.

Infrastructure and skilled labour availability are tested in model v and vi respectively. Both seem very decisive in terms of affecting the investor's investment choice. Assuming wage level to be highly correlated with gross domestic product per capita at purchasing power parity (GDPPcPPP) we should have witnessed a significantly negative coefficient for it, in line with the hypothesis that availability of cheap labour is of prime importance for establishing production facilities in developing countries. A plausible explanation is that low wages do not necessarily reflect better skills and low production costs because labour productivity being directly associated with development level may be low. Per capita GDP adjusted for PPP besides economic progress is also a raw measure of domestic human capital as well as their ability and speed to harness new technologies. Hence, it can be positively correlated with inward investment. The GDPPcPPP variable, positively significant in all regressions presented in table five, is valuable intuitively as a yardstick of efficient production, economic development and growth in addition to being a measure for income level and market munificence.

**Table 5 Results: Fixed Effect Panel Regression Analysis**

Variable	Proxy	i	ii	iii	iv	v	vi	vii	viii
Market Size	LnPo p	6.264* ** (0.666)	1.337 (1.117)	1.192 (1.156)	0.554 (1.108)	-0.496 (1.055)	0.028 (1.081)	-0.164 (1.042)	-0.043 (1.052)
Eco Dev	Ln GDPPc PPP		2.439*** (0.428)	2.445*** (0.430)	2.350*** (0.429)	1.609** (0.596)	1.261** (0.566)	1.173** (0.565)	1.181* (0.574)

Trade Openness	LnTrade			0.153 (0.292)	-0.012 (0.255)	-0.069 (0.251)	-0.375** (0.137)	-0.347** (0.139)	- 0.375** (0.139)
Exchange Rate	LnXrate				0.201* (0.109)	0.186* (0.104)	0.279** (0.099)	0.262** (0.109)	0.256** (0.108)
Infrastr	LnTeleM					0.363** * (0.129)	0.272* (0.157)	0.289* (0.156)	0.289* (0.158)
Human Capital	LnGSEPP						0.410*** (0.111)	0.415*** (0.110)	0.416** * (0.109)
TRIPS	WTO LnNR P							0.021** (0.010)	
	WTO LnRP								0.036* (0.018)
Probability > F		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
No. of Observations		672	672	672	672	672	672	672	672
<b>Coefficient of Determination / R-Squared</b>								50.29%	63.18%

The coefficients for all the variables are the reported values with their standard errors in parenthesis. There ported values of the standard errors are all heteroscedasticity robust. \*, \*\*, \*\*\* Represents significance level at 10%, 5% and 1% respectively.

These estimations have effectively established a basic model of inward foreign investment as a function of the host country's market size, development level, macroeconomic stability, infrastructure and human capital availability. The individual effects of TRIPS can now be investigated.

The effects of TRIPS on enhancing a developing country's inward FDI potential are tested by using a set of different proxies. In models vii and viii, the coefficients for non-resident and resident patents multiplied by WTO membership are positively significant in showing that an increase in the number of non-resident and resident patents causes an increase in FDI inflows. Whereas, trademarks and industrial designs (total, resident or non-resident) are insignificant having no effect on FDI inflows in LAC. Therefore, their results have not presented over here. Ginarte and Park index was not used because it was not only insignificant but also doesn't cover the following countries: Barbados, Saint Vincent & Grenadine, Saint Lucia and Saint Kitts & Nevis. This would have led to a loss in the number of observations without giving any meaningful insights into the phenomenon.

The positive and statistically significant coefficients for WTO membership multiplied by non-resident and resident patents are in accord with the proposition that the amount of overseas direct investment into a developing country is directly associated to

the strength of IPR protection. However, it is primarily the strength of patents that is of paramount importance for production facilities. Trademarks though insignificant will primarily affect the distribution/sales of relatively low tech goods, such as textiles, garments and other consumer items. The ease of imitating such products in the presence of weak trademarks regime limits foreign firms' incentive to sell them in a particular location. Stronger trademarks are expected to commendably decrease the selling expenses because the multinational faces lesser pressure to discipline imitators locally in the FDI host market.

Implementing the TRIPS agreement, other things equal shall increase a developing countries capacity of attracting more FDI and its strengthening, in general, shall enable MNCs to protect their market share. However, the effect will vary from industry to industry and their sensitivity to IPR protection. Patients safety will be important for pharmaceutical and detergent manufacturers against multinationals with products that are difficult to imitate, for example, machinery. Similarly, trade in goods where trademarks are relatively less significant is not as profoundly sensitive to IPRs variations because the threat of market loss to the domestic infringing firm is inexistent (For details see Maskus, 1998a; Javorcik, 2004). According to Li and Resnick (2003) page 185-186, "Theft of intellectual property is perhaps the most prevalent form of seizure in the contemporary world, with entertainment, software, pharmaceutical, and publishing firms facing significant losses".

The estimation results in model vii and viii, table five, utilising non-resident and resident patents times WTO membership as proxies of TRIPS enforcement emphasise its importance in stimulating foreign investors to make FDI. While the results in model vii and viii indicate the importance of TRIPS, eventually IPRs role in determining FDI location choices may perhaps not be as significant. At the moment the strengthening of current levels of IPR regimes across the LAC developing countries act as a positive FDI inducing factor but the continuous prodding for IPRs harmonization through TRIPS may equipoise these benefits. Meaning that the desirability of the nation's enhancing IPR laws shall increase, whereas for the ones having an existent strong IPR regime shall decline after a certain maximum level. This indicates the importance of exploring the effects of

IPR strengthening and harmonisation in the leading developing countries or the emerging economies.

## 5. CONCLUSION

Making use of fixed effects panel model the effect of TRIPS under WTO membership and a set of essential conventional locational investment determinants on FDI inflows from 1989 to 2016 for a sample of 24 Latin American and Caribbean developing nations is investigated in the current paper. The findings of the study clearly endorse that strengthening and harmonising of intellectual property rights through TRIPS augments the developing LAC economy's likelihood of hosting foreign direct investment and positively influences the investors' decision regarding the overseas host location.

Presence of necessary infrastructure and skilled labour, as well as macro-stability and economic development, is found to wield a strong positive influence. These findings are resilient to the use or application of other variables. Large domestic market and trade liberalisation are sensitive to the addition of other location determinants. Nonetheless, it cannot be implied from these results that market size and liberalisation can be left out of a comprehensive mechanism designed for increasing the desirability of the host economy for multinational investment.

The positive impact of IPR worldwide harmonisation under TRIPS highlights the importance of the rapport between strong IPR protection and investment inflows in the LAC developing countries. However, as most of them are in the process of strengthening their IPR regimes, the strong positive effect calls for analysing their effect in a select group of leading developing countries with relatively better/strong IPR laws, in order to explore whether enhanced harmonisation after a certain level leads to increased inflow or FDI decay.

The current study points to some really interesting forms of overseas investment behaviour. The developing nation's policymakers can refer to these patterns/behaviours in their quest to host additional FDI. Concluding, it can be said that still, FDI to developing nations is predominantly caused by conventional location determinants. However, even there for multinational firms, when they have a choice, the strength of the

institutions governing the host country's IPR laws, tend to play a more decisive role than they once did.

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