IMPACT OF FTAs ON TRADE FLOWS: A STUDY OF THE INDIA– SRI LANKA FREE TRADE AGREEMENT (ISLFTA)

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Abstract

The current global business environment has undergone a significant change in the last few decades driven by changes in the patterns of trade and investment flows. This has been accompanied by a strong wave of regional economic integration in the world economy, visible through the increasing number of RTAs (regional trading agreements) in different parts of the world. Economic integration in the South Asian region has seen characterized by multilateral trade liberalization, alongside regional, sub-regional and bilateral liberalization.

This paper focuses on the impact of the free trade agreement signed between India and Sri Lanka in 2000 on trade flows between the two countries. Results of the estimation of two models using panel data for the period 1990-2014, provide evidence that the FTA has promoted trade between the countries. It was found that the FTA has created large trade creation effects. There is no diversion effect of exports of other South Asian countries to India and Sri Lanka. Larger trade creation effects that exceed the diversion effects indicate the welfare gains from the free trade agreement between India and Sri Lanka.

JEL Classification no: F1, F15

Introduction

The decade of the 1990s has witnessed a strong wave of regional economic integration in the world economy, visible through the increasing number of RTAs (regional trading agreements) in different parts of the world. The number of RTAs reported to the GATT (General Agreement on Tariffs and Trade) since its inception in 1948 was 25 in 1990, which had increased to 91 in 2000, and had reached 612 as on April, 2015 – with 406 being actually in force. 90% of the reported RTAs are FTAs and partial scope agreements, with

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customs unions accounting for merely 10% of the arrangements[3]. This reflects a changing perception in the existing paradigms of development, as regionalism is being considered as a developmental option that would promote competitiveness of trade bloc members and help accelerate members' integration into the international economy. It also reflects changes in trade policy objectives of certain countries, changing perceptions of the multilateral liberalization process, and reintegration of countries in transition from socialism into the global economy (Joshi 2012).

The Free trade agreement (FTA) is a manifestation of regionalism with the basic stated objective of reducing trade barriers between member countries. In their simplest form, these agreements merely remove tariffs on intra-bloc trade in goods, but recent years have seen the emergence of "comprehensive preferential trade and investment agreements" - PTIAs (UNCTAD 2006) or "new generation RTAs" as they are called, which extend their scope not only to cover non-tariff barriers, but also cover liberalization in investment and other policies, with the ultimate goal of economic union and a shared executive.

PTIAs have become the focus of development strategy, especially for developing countries. According to UNCTAD 2006, as of end 2005, developing countries were party to 79 per cent of the PTIA network, while developed countries were involved in 54 per cent of the agreements. South-South PTIAs included 86 RTAs at the end of 2005 (UNCTAD 2006a), with 67 under negotiation on July 1, 2006, at least 67 involving 106 countries (Agarwal 2008) there were more than 300 PTAs in force by 2013, about half of which covered services; taken together these PTAs covered almost half of world trade. (UNCTAD 2014)[4]

South Asia is one of the economically most underdeveloped expanses of the world with five least developed countries viz. Afghanistan, Bangladesh, Bhutan, Maldives and Nepal, two low income countries viz. India and Pakistan and one lower middle income country viz. Sri Lanka. This space is home to more than 20 per cent of the world's population including half the planet's poor. Most of these countries had adopted highly interventionist trade regimes in the initial phases of their growth. However, this started to change in the late 1970s beginning with gradual liberalization in Sri Lanka from 1977. It was followed by others in the 1980s including India which started the process of liberalization in 1991. The economic environment began opening up as a whole from the early 1990s (Jayasuriya and Weerakoon 2001, Sahoo 2006, Dutta 2000) as regional integration of different forms started taking effect. Economic integration in the South Asian region has seen multilateral trade liberalization, alongside regional, sub-regional and bilateral liberalization.

The ISLFTA was a pioneering attempt at economic co operation in South Asia and began with a liberalization of trade in goods (Kelegama 2014). The Sri Lankan objectives were

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increased trade ties with South Asia's dominant economic power, and an attempt to change the Sri Lankan export profile from low value added goods to high value added goods aimed at niche markets and to provide low-income groups with cheap consumer imports from India (Kelegama 1999). Sri Lanka also hoped to attract more export-oriented foreign direct investment (FDI) from third countries by promoting itself as an effective entry point into the Indian market.

This paper seeks to examine the impact of regional integration on trade flows between India and Sri Lanka, which was a pioneering attempt at economic co operation in South Asia and began with a liberalization of trade in goods (Kelegama 2014). The paper is organized as under : following the introduction in section 1, section 2 examines the growth of economic co-operation between India and Sri Lanka, section 3 establishes the theoretical relationship between RTAs and trade flows, section 4 contains the research methodology, section 5 has a discussion of the results and section 6 concludes.

2. Indo- Sri Lanka Free Trade Agreement (ISLFTA) and its impact on Trade

Economic relations between India and Sri Lanka date back to the colonial period and have been recently renewed in the 1980s as a result of a series of political and economic cooperative agreements and liberalisation programs of the two countries. The South Asian Association for Regional Cooperation (SAARC) established in 1985 as a political consultation entity was the earliest attempt at economic co operation in the region, and saw both countries as members of this arrangement. This was followed by the establishment of SAPTA (South Asian Preferential Trade Arrangement) in 1995 and SAFTA (The Agreement on South Asian Free Trade Area) in 2006, directed towards deepening regional economic integration. The two nations are also part of BIMSTEC (The Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation) which is a multilateral FTA aimed at achieving its own free trade area by 2017.

Economic co-operation in the region was simultaneously accompanied by programs of economic liberalisation after decades of inward-looking policies centred on the concepts of "self-reliance" and import substitution based industrialization (Kelegama and Mukherjee 2007). Sri Lanka initiated a program of liberalisation in 1977, which kick started the rather hesitant process in the region, till India launched its own program in 1991 leading to momentum for the entire region.[5]

Partial liberalization of the Indian economy during the 1980s and further liberalization in 1991, saw trade beginning to pick up, particularly in favour of India. Between 1993 and 1996, there was a doubling of two-way trade, and between 1990 and 1996 imports of Indian

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[5] World Bank (2004)

goods to Sri Lanka grew by 556 per cent. In 1995, India replaced Japan as the largest source of imports to Sri Lanka, accounting for 8-9 per cent of total imports. Given the obvious benefits of free trade between the two countries and the failure of SAPTA to give the much needed boost to regional trade, a bi lateral FTA with India – an emerging regional economic power with an expanding middle class population was the obvious route to the SAARC market for Sri Lanka. And the ISLFTA was born. (Kelegama and Mukherji 2007)

The two countries signed the bi lateral Indo-Sri Lanka Free Trade Agreement (ISLFTA) on December 28, 1998, which became operational in March 2000. Unlike most bilateral FTAs which are formulated on a "positive list approach" which states the individual commodities in which preferential treatment would be granted, due to paucity of time the ISLFTA was formulated based on the "negative list" approach; each country extended tariff concessions/preferences to all commodities except those indicated in its negative list. (Kelegama 2014)

The ISLFTA had a trade creation effect for both the partner countries (Mukerjhi, Kelegama, and Jayawardena 2003) as well as the rest of the world (Joshi 2010). Sri Lanka's trade with India changed dramatically in the early years of the FTA, with a number of new products being exported from both countries (Mukerjhi, Kelegama, and Jayawardena 2003).

In the period 1995–2000, immediately preceding the agreement, average annual exports from Sri Lanka to India were US$39 million (close to 1% of Sri Lanka's overall exports) while average imports were US$509 million (close to 10% of Sri Lanka's overall imports). While India was an important source of imports even prior to the FTA, it was not a major export market, and in 2000 it ranked 14th in terms of export destinations. By 2005, Sri Lanka's exports to India reached US$566 million, a tenfold increase compared to 2000, and stood at US$567 million in 2012 (see Table 1). India was the fifth largest destination for Sri Lanka's exports in 2008, and by 2012 India had become the third largest export destination after the European Union (EU) and the United States (US) (Kelegama 2010). The FTA also resulted in a significant change in the nature of products traded as primary products like pepper, waste and scrap steel, areca nuts, dried fruit, cloves, were gradually replaced by higher value products such as insulated wires and cables, pneumatic tires, ceramics, vegetable fats and oils, refined copper products, and furniture.[6]

Table 1 India – Sri Lanka Trade (2000 -2013)

3. Conceptual Framework - RTAs and its Trade Effect

There has been considerable debate in academic circles about the impact of FTA on member countries and on the rest of the world (Bhagwati and Krueger, 1995) through trade creation and trade diversion explained using a partial equilibrium approach (Viner 1950).

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[6] Department of Commerce, Sri Lanka website: http://www.doc.gov.lk.

The trade creation effect of FTAs improves resource allocation within a region and income for member countries by reducing trade barriers. It makes consumers better off by giving them greater choice as they can buy goods from the most efficient supplier at the lowest cost.

The trade diversion effect on the other hand, means that the FTA would replace imports of highly efficient non-member countries by imports from less efficient FTA members. Trade creation results in an improvement in resource allocation and economic welfare, while trade diversion worsens efficiency in resource allocation. Besides, trade diversion has a negative impact on non-members as they lose an exporting opportunity. Thus while consumers in FTA member countries may have increased welfare as the FTA enables them to buy imports at lower prices, an FTA member country in totality may face a loss if the decline in government's tariff revenue exceeds the consumers' gain.

In general, an FTA would lead to some amount of trade creation and trade diversion. If the trade diversion is sufficiently large relative to the trade creation effects, the FTA could conceivably end up being harmful to the member countries.

Successful regional agreements might be expected to increase trade between partners relative to those countries' trade with the rest of the world. This is subject to three important caveats :

- First, successful regional integration is typically accompanied by reductions in tariffs for all partners. Hence, regional trade shares may not rise even though the volume of regional trade is increasing.

- Second, regional trade agreements that provide for the removal or reduction in trade costs other than those associated with formal trade policies (such as improved customs procedures), may stimulate trade from all sources.

- Third, many agreements cover nontrade issues such as investment, services, and labor, and these can have important consequences for growth and incomes. Therefore, it is important to bear in mind here that an agreement may be successful even if the propensity for members to trade among themselves does not increase markedly.

FTAs also aim at strengthening a region's participation in global production networks both through trade and capital flows. Integration has the potential to promote intra and extra regional FDI flows and economic development in individual countries of the region. This will pave the way for the most efficient use of the region's resources through additional economies of scale, value addition, employment and diffusion of technology.

4. Review of Literature

The gravity model, rooted in international trade theory (Anderson 1979) , is among the most commonly used tools to analyse and explain the volume of trade between two countries based on their market size and geographical distance. The gravity model was first used by Timbergen (1962) to examine the effects of FTA on trade, and he found significant positive effects among members of the British Commonwealth but insignificant for the Benelux FTA. In the 1970s and 1980s several studies analyzed the effects of major regional trade agreements and schemes, such as the EEC (European Economic Community), EFTA (European Free Trade Association) and LAFTA (Latin America Free Trade Agreement) (Aitken (1973) and Brada and Mendez (1983), etc.). The use of the model in the mid-1980s within the framework of the international trade theory was based on imperfect substitutes, increasing return to scale and product differentiation at firm-level. Since the 1990s, the gravity model has attracted a lot of attention in the analysis of international trade as a result of renewed interest in economic geography and the rapid increase in the large number of FTAs, which considers geographic and other kinds of 'distance' as an important factor in economic activities.

Frankel, Stein and Wei (1995) and Frankel (1997) examined the effects of major FTAs, such as the EU, the NAFTA, the MECOSUR and the AFTA, and they found significant positive effects in the cases of the MERCOSUR and the AFTA but not in the cases of the EU or the NAFTA. Solaga and Winters (2000) also attempted to capture the trade creation and two-way trade diversion effects of major multilateral FTAs. They found significantly positive effect on trade creation for the FTAs only in Latin American countries, and they also found significant trade diversion effects for the cases of the EU and the EFTA. Endoh (1999) analyzed the trade creation and trade diversion effects of the EEC, LAFTA and CMEA (Council of Mutual Economic Assistance, COMECON), and he found both effects for these FTAs, and he also observed that the effects were diminishing in the 1990s. As the results of these studies indicate, the estimated results on the effects of FTAs on trade flows by using the gravity model are not uniform but mixed.

Various studies have also examined the impact of FTAs on trade at disaggregated sector levels, keeping in mind the difference in impact depending on the products being traded. Gilbert, Scollay and Bora (2004) attempted to find out the effects of major FTAs and natural trading blocs in East Asia by sector, and they obtained the results that natural trading blocs in East Asia exist in merchandise and manufacturing sectors. Endoh (2005) investigated the effects of GSTP (Generalized System of Trade Preferences) among developing countries on trade of capital goods, and he found a significant increase in trade between GSTP countries and Fukao, Okubo and Stern (2003) provide an econometric analysis on trade diversion effects of the NAFTA by using HS 2digit level data using a partial equilibrium framework.

Prominent studies on the ISFTA include Deshal de Mel (2010) which examined the structure of the bilateral agreement, analyzing the negative lists, tariff liberalization programme, tariff

rate quotas in selected items, and rules of origin. The study points out that the two major exports of Sri Lanka to India, viz. copper and vanaspati (refined hydrogenated oil) lost their competitive advantage due to enforcement of rules of origin criteria by India, and also due to a reduction in its own external most favored nation tariff on the principal raw materials, copper ingots and palm oil (crude and refined), but the scope and depth of coverage of benefits far outpaced those available under SAFTA.

Dushni Weerakoon and Jayanthi Thennakoon's (2006) study justifies the bilateral FTA between the two countries on the basis of the fact that although economic co operation in the SAARC region got underway from the late 1990s, with the implementation of SAPTA, the implementation process remained less effective and slow due to lack of commitment. The ISLFTA was an alternative option, facilitated by a significant improvement in the political relations between the two countries from the late 1990s.

The Law and Society Trust, Sri Lanka (2010) is critical of the outcome of ISFTA, accepting the scarcity of information and confusion regarding the available data, but questioning the strength of claims made by protagonists of the ISLFTA stating a foundation of ideology rather than scientific evidence. The study questions the basis of decisions of the agreement being unclear and unsound arguing that trade as an end in itself without looking at dimensions of equity and employment is questionable. The study also highlights the problems relating to the overwhelming importance of copper and vanaspati exports, using Indian investment and labour.

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5. Research Methodology

Research Objective: The basic research objective of this study is to identify the impact of the ISLFTA between India and Sri Lanka on trade flows and welfare.

Model: The study uses a basic gravity model of international trade which postulates that the trade between country$_i$ and country$_j$ is proportional to the product of GDP$_i$ and GDP$_j$ and inversely related to the distance between two countries. Other explanatory variables that are typically included in the model are country size represented by population or per capita GDP and dummy variables reflecting contiguity; geographical and cultural proximity such as common boarders and common language, and also participation in various regional trading arrangements.

We use the following standard gravity equation in identifying the impact of Indo-Sri Lanka free trade agreement on bilateral trade flows of the countries.

$$\ln(Trade_{ijt}) = \alpha + \beta_1 \ln(Y_{it} \times Y_{jt}) + \beta_2 \ln(y_{it} \times y_{jt}) + \beta_3 \ln(IncomeGAP_{ijt}) + \beta_4 \ln(dis\tan ce_{ijt}) + \\ \beta_5 adjacency_{ijt} + \beta_6 language_{ijt} + \phi FTA_{ijt} + \gamma_i time + \varepsilon_{ijt}$$

(1)

Where $Trade_{ijt}$ is the value of total exports between country i and j in year t and measured as the sum of exports of country i to j and exports from country j to i in year t. Y_{it} is the GDP of the ith country in year t, y_{it} is the GDP per capita of the ith country in year t, $IncomeGAP_{ijt}$ is the absolute value of difference of GDP per capita in the ith and jth country in year t. This variable is included to estimate the effect of differences in income between a country pair on trade flows. '*distance*' is the geographical distance between the capital cities of the two countries measured in kilometers. Variables of *adjacency*, *language* and *FTA* are dummy variables. Adjacency takes the value of 1 if countries i and j share the common border and takes 0 otherwise, Language takes value 1 if the two countries share the same official language and takes 0 otherwise, and FTA which is included to identify the effects of the free trade agreement on trade flows between countries takes the value of 1 if the countries i and j belong to the same FTA and takes 0 otherwise. (need to explain why we included Indo-SL free trade agreement only in the study.) Time is the time trend.

Estimated coefficients of GDP and GDP per capita which represent the size and the income level of the economy respectively are expected to have positive signs as large countries and countries with high incomes are supposed to have large trade flows. For the variable *IncomeGap,* the estimated coefficient can be positive or negative depending on how this gap has affected trade flows within countries. The variable *distance* is expected to have a negative sign as long distances are associated with high transport costs. However, as all South Asian countries are located close to each other, the distance between them may not make a significant impact. FTA which is to measure the effects of the free trade agreement on the partner trading countries is expected to have a positive coefficient.

The equation (1) is used to identify the general effect of Indo-SL free trade agreement on the value of total exports between countries i and j which is measured as the sum of the exports of country i to j and the exports of country j to country i. In the next section, we intend to identify the effect of FTA on FTA member's exports to non-FTA member's exports and non-FTA member's exports on FTA member's exports separately. Following Urata and Okambe (2007), we specify the equation as follows.

$$\ln(\exp orts_{ijt}) = \alpha + \beta_1 \ln(Y_{it}) + \beta_2 \ln(Y_{jt}) + \beta_3 \ln(y_{it}) + \beta_4 \ln(y_{jt}) + \beta_5 \ln(IncomeGAP_{ijt})$$
$$+ \beta_6 \ln(dis \tan ce_{ijt}) + \beta_7 adjacency_{ijt} + \beta_8 language_{ijt} + \phi_1 FTA_{ijt} \qquad (2)$$
$$+ \phi_2 FTAtononFTA_{ijt} + \phi_3 nonFTAtoFTA_{ijt} + \gamma_i time + \varepsilon_{ijt}$$

In this model specification, the dependent variable exports denotes the value of exports from country i to j in year t. As in equation (1), Y_{it} and y_{it}, *IncomeGAP, distance, adjacency, language* and *time* are the same. But, this equation has two new dummy variables which are defined as follows. As before, FTA takes value 1 when both countries are partners of the FTA. *FTAtononFTA* takes the value of 1 when country i is belong to the FTA but country j does not. Similarly, nonFTAto *FTA* is given the value of 1 when country I is not a partner of

the FTA but country j is a partner. It is expected to capture the trade creation effect from the dummy variable *FTA* and other two dummies to capture the effect of trade diversion.

The above equation is estimated for total exports and four types of exports which are among the main export goods in the countries in the sample. The types of exports are food and live animals (SITC code 0), apparel (HD code 61), iron and steel (HD code 72) and electronic and electric equipment HS code 85). Need a justification for selecting these four types of exports.

Sample and data: The sample of the study includes all SAARC countries except Afghanistan[7] for the period 1990-2014. Data for GDP, GDP per capita were taken from World Development Indicators of the World Bank[8]. They are in real values and 2005 prices. Trade data were taken from the UN Comtrade database[9]. Since the data in Comtrade are expressed in nominal US dollars, the values were deflated by the Consumer Price Index of USA (2005=100) following Rose (2004) and Urata and Okabe (2007). The variable *language* was not included in the model as none of the South Asian countries share the same official language.

Model Estimation

Since we are using panel data, before the estimation process, we need to consider two possible issues: (i) panel level heteroscedasticity and autocorrelation problem; (ii) correlation between some of the regressors and country pair-level effects included in the error term and endogeneity of the regressors, which gives rise to simultaneous determination. If these problems are detected, then to deal with the issue (i) we will apply Weighted Least Squared (WLS) method with corrected errors to estimate parameters for pooled cross sectional and time series data for the benchmark result and to deal with issue (ii) we will use system generalized method of moment (system GMM).

Results of the Wooldridge's test for autocorrelation indicates the rejection of the null hypothesis of no first order auto correlation at 5% level of significance confirming first order autocorrelation in data (see Appendix xx). Two tests were carried out to test for heteroscedasticity; White's Test and hettest by Breusch-Pagan and Cook-Weisberg. Results of both tests confirm the existence of panel level heteroscedasticity (see Appendix xx). Based on the results of the above tests, we employ the weighted ordinary least square (WLS) with corrected errors to estimate the above equation.

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[7] Afghanistan was not included in the study due to non-availability of data.

[8] http://wdi.worldbank.org/tables

[9] http://comtrade.un.org/

Table 1: Estimation Results of Model 1

	WLS	GMM
FTA	3.9093 (0.7016)*	
GDP	0.2691 (.0876)*	
GDP per capita	-0.4785 (0.2019)*	
Income Gap	1.1658 (.02277)*	
Distance	-0.2636 (0.2602)	
Adjacency	0.7076 (0.4547)	
Sample size	389	

The estimation results of model 1 for all country pairs in the sample for the period 1990-2013 are presented in Table xxx. According to the WLS results, all the estimated coefficients of the standard variables included in the gravity equation, except GDP per capita have expected signs. All the estimated coefficients except *distance* and *adjacency* are significant at 1% level of significance. The variable *language* was excluded from the model as none of the South Asian countries share a common official language. The results indicate that the size of the economy has a positive and significant impact on trade flows among South Asian countries.

The signs of the estimated coefficients of GDP and GDP per capita are expected to be positive as larger economic scale and high income levels promote trade. However, in this case, magnitude of bilateral trade is promoted by the size of the economy while income levels deter the trade flows. The negative impact of per capita GDP on trade flows can be explained by the following table. (Sumati, can you explain this. You can see the countries with higher per capita GDP are small economies while trade flows of the large economies are large).

Table 2: GDP, GDP per capita and Trade in 2013

Country	GDP US$ million (2005)	GDP per capita US$ (2005)	Exports as a % of GDP
Bangladesh	112,096	715.8	46
Bhutan	1,490	1,976.6	104
India	1,489,776	1,189.8	53
Maldives	2,011	5,829.8	219
Nepal	11,370	409.0	48
Pakistan	143,817	789.6	33
Sri Lanka	41,053	2,004.3	54

Source: World Development Indicators, World Bank

The positive estimated coefficient of the difference of income between country pair (*IncomeGAP*) indicates that a large income gap between country pairs may increase the

inter-industry trade. Although geographical distance between the largest cities of country i and j (distance) and adjacency which reflect both tangible and intangible trade cost are not statistically significant but have expected signs. That is to say, as the longer the distance larger the cost and cultural similarities of the countries increase the trade. (think of how to explain in the insignificance off the estimates. Can we say that all SAARC countries are geographically located close to each other and have cultural similarities).

The significance of the estimated coefficient of FTA which is positive implies that the free trade agreement between India and Sri Lanka has promoted bilateral trade between the two countries. (need to relate this to the findings of earlier studies)

Some of the estimated coefficients of the system GMM estimation have expected signs while some others have unexpected signs. Moreover, all of the estimated coefficients are insignificant. The reason for these poor results might be due to the invalidity of over identifying restrictions and the problem of autocorrelation. According to the results of the Arellano-Bond test for AR(1), we cannot reject the null hypothesis of no autocorrelation and results of the Sargan test reject the null hypothesis of over identifying restrictions are valid (Appendix xxx). I will rewrite this section after checking some results.

The results of the estimation of equation (2) are presented in Table 3. It includes results for the estimation of equation for total exports and for the exports of four types of commodities.

Table 3: Estimation results of equation 2

	Total exports	Food and live animals	Apparel and accessories	Iron and steel	Electrical and electronic equipment
Ln (Y_1)	0.84093[*] (0.06568)	0.75827[*] 0.12273	1.42746[*] (0.19952)	1.21239[*] (0.14862)	1.17300[*] (0.12112)
ln (Y_2)	0.47107[*] (0.05359)	0.57406[*] 0.08835	0.84610[*] (0.12520)	0.45267[*] (0.10412)	0.09255 (0.08146)
ln (y_1)	1.24607[*] (0.18609)	0.87008[*] 0.36648	-1.38234[***] (0.82655)	0.19522 (0.46297)	2.99680[*] (0.58292)
ln (y_2)	0.13955 (0.19509)	0.11471 0.25641	-0.29173 (0.26576)	-0.65365[**] (0.33908)	-0.98181[*] (0.25112)
ln(IncomeGAP)	-0.29064[**] (0.13792)	-0.19987 0.18236	0.92601[*] (0.24498)	0.99906[*] (0.20778)	1.05567[*] (0.15652)
ln (distance)	-1.53662[*] (0.19501)	-0.43777 0.41589	-2.89466[*] (0.38471)	-1.35142[*] (0.36009)	-1.29093[*] (0.28572)
adjacency	0.86746[*] (0.27759)	-0.84421[**] 0.39564	-5.01995[*] (0.67215)	0.88354[***] (0.53373)	0.81545[***] (0.44620)
fta	2.998595[*] (0.59177)	1.26354[**] 0.59054	2.63961[*] (0.70148)	2.61252[*] (0.54402)	1.77822[*] (0.51171)

time	-0.04443* (0.01770)	0.01956 0.03159	-.0834141*** (0.04513)	0.00671 (0.03540)	-0.08496* (0.0335)
ftanonfta	0.98728* (0.29622)	0.85488** 0.43505	2.26627* (.5215522)	-0.09010 (0.13569)	-1.82674* (.4626407)
nonftatofta	0.68546* (0.27194)	-0.35358 0.2872679	3.864753* (.665261)	0.34540 (0.58765)	-.4452917 (.4918447)
cons	-11.55328* (3.02059)	-19.18137* 6.31472	-17.08635*** (9.986846)	-21.52147* (7.21744)	-26.633* (6.54994)
R^2		0.4214	0.3792	0.5618	0.5789

Need to introduce the concepts of trade creation and trade diversion in literature review section. The main purpose of estimation of equation 2 is to identify trade creation effect and trade diversion effect of ISLFTA over the study period. The estimation results provide evidence that the estimated coefficients of the variable FTA are positive and highly significant for total exports and other four types of exports. This indicates that there is a significant trade creation effect due to the free trade agreement between India and Sri Lanka.

The estimated coefficients of two dummy variables included in the model to capture the trade diversion effect provide mixed results. Total exports from FTA countries to other countries have not created a diversion effect. For the four types of commodities, except in the cases of iron and steel and electrical and electronic equipment, the estimated coefficients are positive. In the case of iron and steel the coefficient is not significant though it is negative. Electrical and electronic equipment is the only good that has created a significant diversion effect.

In the case of exports from non-FTA countries to FTA countries, the estimated coefficient of the dummy variable nonFTAto FTA is positive in all cases except in the case of electrical and electronic equipment. However, in that case where the coefficient is negative, it is not significant. Therefore, we can conclude that there is no type 2 diversion effect due to India Sri Lanka free trade agreement.

Putting all the above results together, it is clear that ISLFTA has created significant trade creation effects but a small type 1 diversion effect and no type 2 diversion effect. Since trade creations is larger than trade diversion, following Viner (1950) we can conclude that this trade agreement is beneficial to the partner countries and not harmful to the other countries in the region.

Conclusions

In this study, we examined the impact of the free trade agreement signed between India and Sri Lanka in 2000. Results of the estimation of two models using panel data for the period 1990-2014, provide evidence that the FTA has promoted trade between the countries. Further, it was found that the FTA has created large trade creation effects but trade diversion is found only in the case of exports of electrical and electronic equipment by India and Sri Lanka to other South Asian countries. There is no diversion effect of exports of other South Asian countries to India and Sri. Larger trade creation effects that exceed the diversion effects indicate the welfare gains from the free trade agreement between India and Sri Lanka.

References:

Aitken, N.D. (1973), "The Effect of the EEC and EFTA on European Trade: A Temporal cross-section Analysis", *American Economic Review*, 63, 881-892.

Anderson J.A. (1979), "A Theoretical Foundation for the Gravity Model", *The American Economic Review*, 69, 106-116.

Bhagwati, J. and Krueger, A. (1995), "*The Dangerous Drift to Preferential Trade Agreements*", Washington DC: AEI Press.

Blundell, R. and S., Bond, (1997), "Initial conditions and moment restrictions in dynamic panel data models", *Journal of Econometrics*, 87,115-143.

Braga, J.C. and Mendez, J.A. (1983), "Economic Integration among Developed, Developing and Centrally Planned Economies: A Comparative Analysis", *Review of Economics and Statistics,* 67(4), 549-556. (November 1985)

Deshal de Mel. 2010. Bilateral free Trade Agreements in SAARC and Implications for SAFTA, In Sadiq Ahmed et.al, *Promoting Economic Cooperation in South Asia*. Sage Publications: New Delhi.

Dushni Weerakoon and Jayanthi Thennakoon. (2006). India Sri Lanka FTA: Lessons for SAFTA, CUTS International, Jaipur. http://www.thecommonwealth.org/fi les/178424/FileName/India- Sri%2520Lanka%2520FTA--Lessons%2520for%2520SAFTA-- Final.pdf (accessed 15 November 2010).

Dutta, D. (2000) ed., "*Economic Liberalisation and Institutional Reforms in South Asia: Recent Experiences and Future Prospects*", Delhi : Atlantic Publishers and Distributors.

Endoh, M. (1999), "Trade Creation and Trade Diversion in the EEC, the LAFTA and the CMEA: 1960-1994," *Applied Economics,* 31, 207-216.

Endoh, M. (2005), "The Effects of the GSTP on Trade Flow: Mission Accomplished?", *Applied Economics*, 37(5), 487-496.

Frankel, J.A. (1997), "Regional Trading Blocs in the World Economic System", Institute for International Economics. Washington DC

Frankel, J.A., Stein, E. and Wei, S.J (1995), "Trading blocs and the Americas: the natural, the unnatural, and the super-natural", *Journal of Development Economics,* 47(1), 61-95.

Fukao, K. Okubo, T. and Stern, R. M. (2003), "An Econometric Analysis of Trade Diversion under NAFTA,", Research Seminar in International Economics, *The University of Michigan, Discussion Paper* No.491.

Gilbert, J., Scollay, R. and Bora, B. (2004), "New Regional Trading Developments in the Asia-Pacific Region," in *Global Change and East Asian Policy Initiatives* edited by S. Yusuf, M. Altaf and K. Nabeshima, The World Bank : Oxford Univ. Press.

Jayasuriya, S., and Weerakoon, D. (2001), "FDI and Economic Integration in the SAARC Region" in T.N. Srinivasan (ed.), *Trade, Finance and Investment in South Asia*, New Delhi: Social Sciences Press.

Joshi, V. (2012), "Econometric Analysis of the India-Sri Lanka Free Trade Agreement", *Asian Economic Journal,* 26(2), 159-180.

Kelegama, S. (2014), "The India–Sri Lanka Free Trade Agreement and the Proposed Comprehensive Economic Partnership Agreement: A Closer Look", *ADBI Working Paper Series* No. 458.

Kelegama, S. and Mukherji, I.N. (2007), "India-Sri Lanka Bilateral Free Trade Agreement: Six Years Performance and Beyond", *RIS working Paper* no 119.

Kelegama, S. (1999), 'Indo-Sri Lanka Trade and the Bilateral Free Trade Agreement: A Sri Lankan Perspective', *Asia-Pacific Development Journal*, Vol.6, No.2, December 1999.

Law & Society Trust. 2010. An Act of Faith? Ten Years of the India-Sri Lanka Free Trade Agreement (ISLFTA), Law and Society Trust, New Delhi. http://www.lawandsocietytrust org/PDF/An%20Act%20of%20Faith%20India%20Sri%20Lanka%20Free%20Trade%20 Agreement%20Ten%20Years%20On%20March%202010-1.pdf

Rose, A.K. (2004) "Do We Really Know that the WTO Increases Trade?" *American Economic Review,* 94(1), 98-114.

Sahoo, P. (2006), "Foreign Direct Investment in South Asia: Policy, Trends, Impact and Determinants", *ADB Discussion Paper* No: 56.

Solaga, I. and Winters, L.A. (2000), "Regionalism in the Nineties: What Effect on Trade?", *CEPR Discussion paper* No. 2183.

Tinbergen J. (1962), "Shaping the World Economy; Suggestions for an International Economic Policy", New York: The Twentieth Century Fund

Urata, S. & Okabe, M., (2007). "The Impacts of Free Trade Agreements on Trade Flows: An Application of the Gravity Model Approach", *RIETI Discussion Papers* No. 07052.

UNCTAD (2014) Key Statistics and Trends in Trade Policy 2014, http://unctad.org/en/PublicationsLibrary/ditctab2014d3_en.pdf.

Viner, J., (1950), "The Customs Union Issue", New York: Carnegie Endowment for International Peace.

World Bank (2004) "*Trade Policies in South Asia*", World Bank, Washington DC.