TRADE CREATION AND TRADE DIVERSION: INDIA's EXPERIENCE IN APTA AND ISCECA

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Abstract

A defining feature of the current global business environment has been a strong wave of regional economic integration, visible through the increasing number of RTAs (regional trading agreements) in different parts of the world. Economic integration in the South Asian region has been characterized by multilateral trade liberalization, alongside regional, sub-regional and bilateral liberalization.

This paper examines the trade creation and trade diversion effects of two regional agreements - 'Asia-Pacific Trade Agreement'(APTA) and 'India-Singapore Comprehensive Economic Cooperation Agreement' (ISCECA) from the viewpoint of India as a participating country.

The study uses the gravity model in a panel data estimation using the Weighted Least Squares Method for the period 2005-2015. The results reveal that the agreements have not led to any trade creation, possibly due to the presence of a cluster of smaller, economically less influential countries,high cost of intra-regional trade, and prominence of South-South integration. Also, APTA's structure is characterized by limited scope of agreements, overlapping memberships leading to confusion in objectives and rules of origin which are anyhow stringent, acting as some of the reasons why the Agreement has not been able to create substantial trade among the members.

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1. INTRODUCTION

Regional Economic Integration is an economic setting among different countries characterised by a reduction in trade barriers and an alteration in overall policies. There has been a strong wave of regional economic integration visible in the decade of the 1990s, in the form of an increasing number of RTAs (regional trading agreements) in different parts of the world. According to the GATT (General Agreement on Tariffs and Trade) there were 25 reported RTAs 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 customs unions accounting for merely 10% of the arrangements[5].

This reflects the importance ofregionalism as a developmental option that would promote competitiveness of trade bloc members to 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, 79 per cent of the PTIA network was on account of developing countries, with only 54 per cent of the agreements showing developed country involvement. 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)[6].

South Asia is one of the economically most underdeveloped expanses of the world and this study examines two important regional agreements -'Asia-Pacific Trade Agreement'(APTA) and 'India-Singapore Comprehensive Economic Cooperation Agreement' (ISCECA) from the Indian perspective.
This paper seeks to examine the impact of regional integration on trade flows as a consequence of India's participation in the APTA and ISCECA. In doing so it follows studies such as Reed, (2010)which covers multiple FTAs across the world andCraig R. MacPhee(2014) where the

[5]https://www.wto.org/english/tratop_e/region_e/region_e.htm

[6]http://unctad.org/en/PublicationsLibrary/ditctab2014d3_en.pdf

focus is on 12 developing-country RTAs. The study also attempts to contribute as a pioneering attempt in the analysis of these two FTAs in the Indian context.

The paper is organized as under : following the introduction in section 1, section 2 contains the conceptual framework and review of literature; sections 3 and 4 examine the evolution of the two agreements and trade flows in this context, section 5 contains the research methodology, section 6 has a discussion of the results and section 7 concludes.

2. Conceptual Framework and Review of Literature

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).
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.

The gravity model, which has its roots 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.Estimating a gravity model at product level, (Urata, 2013) studies trade creation effects of RTAs for a period of 30 years and found varied trade creation effects depending upon the type of commodities. A study by of the trade effects of the ASEAN-China FTA revealed a significant amount of trade creation in agricultural and manufactured goods (Shanping Yang, 2014). (Taguchi, 2015)analyses the trade effects of ASEAN-plus-one FTA with a sample of 14 countries over a period of 20 years and the results revealed that differences in general tariff rate and preferential tariff rates is the reason for

the variation in the degree of trade creation in different agreements; some agreements are recorded with significant trade creation, while others with relatively less significant effect. (Okabe M. , 2015), studied trade effects on similar lines for ASEAN-plus-one FTAs, the first one using fixed effects gravity model and panel data for two decades for 13 countries. The study finds the effects of trade creation to be significantly positive, while those of trade diversion are significantly negative. Abhyaratne and Varma (2016) examined the India Sri Lanka Free Trade Agreement (ISFLTA) and found evidence of trade creation but no trade diversion.

3. India-Singapore Comprehensive Economic Co-operation Agreement (ISCECA) – an Overview

The ISCECA is the outcome of India's "Look East" policy announced in 1991, in an attempt to increase its engagement with the East Asian countries. Formal economic relations between the two countries can be traced to the Agreement for avoidance of double taxation and prevention of fiscal invasion signed in 1994.

Following its membership of the ASEAN Regional Forum (ARF), India and ASEAN signed a Framework Agreement – the Comprehensive Economic Cooperation Agreement (CECA) in 2003 as an institutional framework for economic cooperation with different countries. This resulted in the formation of the ISCECA as a FTA covering trade in goods in 2010.

The Agreement has strategic implications for both parties - Singapore is India's a gateway to the ASEAN, and into entire East Asia; and Singapore considers a liberalized Indian economy as a strategic ally for reaching out to significant partners who are beyond its immediate neighbourhood.

Table 1 shows the trend of trade between India and Singapore prior to the commencement of the ISCECA.

Table 1
An overview of trade between India and Singapore before the commencement of CECA

Year	India's Total Exports	Exports to Singapore	Exports Share	Exports Growth	India's Total Imports	Imports from Singapore	Imports Share	Imports Growth
1996-97	33,469.95	977.47	2.92%		39,132.41	841.10	2.15%	
1997-98	34,784.98	774.53	2.23%	-20.76%	41,484.49	1,002.00	2.42%	19.13%
1998-99	33,218.72	517.53	1.56%	-33.18%	42,388.71	1,384.16	3.27%	38.14%
1999-00	36,822.49	672.71	1.83%	29.98%	49,738.06	1,160.31	2.33%	-16.17%
2000-01	44,560.29	877.11	1.97%	30.38%	50,536.45	1,463.91	2.90%	26.17%
2001-02	43,826.72	972.31	2.22%	10.85%	51,413.28	1,304.09	2.54%	-10.92%
2002-03	52,719.43	1,421.58	2.70%	46.21%	61,412.14	1,434.81	2.34%	10.02%
2003-04	63,842.55	2,124.83	3.33%	49.47%	78,149.11	2,085.37	2.67%	45.34%
2004-05	83,535.94	4,000.61	4.79%	88.28%	1,11,517.43	2,651.40	2.38%	27.14%
Average	**47420.119**	**1370.96444**	**2.89%**		**58,419.12**	**1,480.79**	**2.53%**	

Source: (Ministry of Commerce and Industry, 2016)

Provisions: CECA is primarily an FTA and its provisions have five basic components: FTA on merchandise and services trade, bilateral investment agreement on promotion, protection and co-operation in foreign investment flows among the two countries, refining existing Double Taxation Avoidance Agreement, an agreement to liberalize Air Services, including an Open Skies Agreement for Charter Flights and a work program for economic cooperation in all areas of trade and investment cooperation. It also includes cooperation in Tourism, setting up of an India–Singapore investment fund, and establishing a second India Centre in Singapore to harness Singapore's strengths as a business hub for Indian companies. These changes are described in *Table 2* below. And the significant increase in the trade flow after the commencement of CECA between India and Singapore has been shown in *Table 3*. The increase can easily be identified if the growth is observed by comparing the Tables 1 and 3.

Table 2: Changes done since implementation of India-Singapore CECA

S.no.	**Changes done under CECA**	**Number of items covered**	**Period of implementation**	**Degree of Change**
1	Early Harvest Scheme- Duty Free Access	506	August 1st, 2005 onwards	
2	Phased elimination in duty	2202	From August 1st, 2005, and then each year on April 1st	5 cuts of 10%, 25%, 50 %, 75% & 100 %
3	Phased reduction in duty	2413	August 1st, 2005 onwards, and then each year on April 1st.	5 cuts of 5%, 10%, 20%, 35% & 50%
4	Negative List	6551	Dec-07	Such goods shall enter India on applied MFN rates. 539 additional items from this list selected for further concessions
5	Further reduction done: Zero tariffs	307	Between January 15, 2008 and December 1st,	5 equal cuts

			2011	
6	Further reduction done: Zero tariffs	97	Between January 15, 2008 and December 1st, 2015	9 equal cuts
7	Further reduction done: Reduce to only 5% duty	135	Between January 15, 2008 and December 1st, 2015	9 equal cuts

Source:(Garg, 2009)

Table 3
An overview of trade between India and Singapore after the Commencement of CECA

Year	India's Total Exports	Exports to Singapore	Exports Share	Exports Growth	India's Total Imports	Imports from Singapore	Imports Share	Imports Growth
2004 - 05	83535.94	4000.61	4.79%		1,11,517.43	2,651.40	2.37%	
2005 - 06	103090.53	5425.29	5.26%	35.61%	1,49,165.73	3,353.77	2.25%	26.49%
2006 - 07	126414.05	6053.84	4.79%	11.59%	1,85,735.24	5,484.32	2.95%	63.53%
2007 - 08	163132.18	7379.2	4.52%	21.89%	2,51,654.01	8,122.63	3.23%	48.11%
2008 - 09	185295.36	8444.93	4.56%	14.44%	3,03,696.31	7,654.86	2.52%	-5.76%
2009 - 10	178751.43	7592.17	4.25%	-10.10%	2,88,372.88	6,454.57	2.24%	-15.68%
2010 - 11	249815.55	9825.44	3.93%	29.42%	3,69,769.13	7,139.31	1.93%	10.61%
2011 - 12	305963.92	16857.71	5.51%	71.57%	4,89,319.49	8,388.49	1.71%	17.50%
2012 - 13	300400.58	13619.24	4.53%	-19.21%	4,90,736.65	7,486.38	1.53%	-10.75%
2013 - 14	314405.3	12510.54	3.98%	-8.14%	4,50,199.79	6,762.49	1.50%	-9.67%
2014 - 15	310338.48	9809.36	3.16%	-21.59%	4,48,033.41	7,124.47	1.59%	5.35%
Average	**211013.03**	**9228.93909**	**4.37%**		**3,21,654.55**	**6,420.24**	**2.00%**	

Source: (Ministry of Commerce and Industry, 2016)

The main goods traded under CECA between India and Singapore include Mineral oils, fuels, waxes, ships, boats and floating structures, mechanical appliances, nuclear reactors, natural or cultured pearls, precious and semi-precious stones, iron and steel, aircraft, spacecraft, printed material, organic chemicals, among others (Export Import Data Bank of Ministry of Commerce, Government of India).[7]

[7]http://commerce.nic.in/eidb/icomq.asp

The general trend of exports from Singapore to India had been fluctuating since the early nineties, with Singapore's share in India's total imports ranging from 1.5 to 3 percent. The trend became more stable by 1997-98 when Singapore's share in India's trade increased, mostly in the form of re-exports. In early 2000s, Singapore's exports to India grew at a decent pace. It was only after the commencement of CECA in 2005, and the resultant tariff reductions made under the agreement, that the trade shares increased consistently for 3 years. However, post the financial crisis of 2008, Singapore's exports to India slowed down.

4. ASIA-PACIFIC TRADE AGREEMENT (APTA)

The Asia-Pacific Trade Agreement (APTA), signed in 1975 as the Bangkok Agreement, is the oldest preferential trade agreement among developing countries in the Asia-Pacific region. It aims to promote economic development through the adoption of mutually beneficial trade liberalization measures to facilitate intra-regional trade expansion and its economic integration umbrella covers merchandise goods, services, trade and investment.

The APTA is a region-centred trade agreement including states from East and South Asia. It is also the only operational arrangement that connects India and China, with another major economic player, South Korea **(**ESCAP**)**[8]**.** In 2001, with China joining the initiative it became the APTA. Apart from India, China, and Korea, other member states include Bangladesh, Lao People's Democratic Republic, and Democratic Socialist Republic of Sri Lanka. Mongolia concluded its negotiations with other member states and became a member in 2013.

The primary area of the agreement is trade in goods, but trade facilitation and investment promotion were added in 2009, and liberalization of trade in services in 2011.

Trade details of the members

In the last 14 years, from 2000-2014, the intra-regional exports in Asia-Pacific grew at an average of 6.9 percent, while the total exports from the economies in Asia-Pacific rose at 6.1 percent. The intra-regional imports, on the other hand, grew at an average rate of 0.5 percent, as compared to a deflation of -1 percent in total imports. The recent share in merchandise exports of China and Korea had been 29.4 percent and 11.3 percent respectively. Major traded commodities within the region include agricultural products, mechanical and electronic parts, and fuel. There was a slowdown in the overall intra-regional trade pertaining to insufficient demand in the biggest country of the region, China, and other concerns of individual economies. This study excludes Mongolia's participation due to its late membership.

Table 4 shows each member country's merchandise exports and imports to and from the Asia-Pacific region. Most data for the countries is available till 2014-2015. The data for Bangladesh is available only till 2011 in UNESCAP, however, as per the Asia-Pacific Trade and Investment Report 2016, the country's merchandise growth is recently reported to have outperformed other members in the region. Particularly in the year 2015, when the region was facing a recession in

[8] http://www.unescap.org/apta

exports by 9.7 percent, exports from Bangladesh increased at 6.5 percent. The main shipments were from the textile and garment sector, in which the country has competitiveness owing to its vast labour intensive textile industries and availability of low-wage workforce. The Generalized System of Preferences Facility provided by larger trading partners is an additional factor.

Table 4
Participating countries' trade summary sheet & consolidated Concessions to members after the 1st, 2nd, and 3rd rounds of negotiation

Country	Time period	Merchandise Trade to Asia-Pacific region (% of total merchandise exports)	Merchandise Trade from Asia-Pacific region (% of total merchandise imports)	Number of trade concessions provided under the agreement
Bangladesh	**2000-2011***	**14.5**	**72.7**	**209**
China	**2000-2015**	**48**	**49**	**1717**
India	**2000-2015**	**33**	**40.3**	**570**
Lao PDR	**2000-2015**	**NIL**	**NIL**	**0**
Republic of Korea	**2000-2014**	**46**	**48**	**1367**
Sri Lanka	**2000-2015**	**26.6**	**73.2**	**427**

Source: 1. Merchandise Trade data obtained from United Nations Economic and Social Commission for Asia and the Pacific. 2. List of concessions obtained from Ministry of Commerce People's Republic of China website (http://fta.mofcom.gov.cn/topic/enpacific.shtml)
**Data for Bangladesh only available till 2011; details of Bangladesh's trade performance till 2015 discussed in UNESCAP report 2016.*

5. RESEARCH METHODOLOGY

Research Objective: The basic research objective of this study is to identify the impact of trade agreements APTA and ISCECA between India and other partner countries.

Data
The sample of the study includes the partner countries of APTA except Mongolia and partners of CECA; Bangladesh, China, India, Lao PDR, South Korea, Singapore and Sri Lanka. Mongolia was not a part of the study since it became a member in 2013. Panel data for the period from

2005-2015 used in the study were taken from the World Development Indicators of the World Bank[9] and the UN Comtrade database[10].

Model Specification

Augmented Gravity Model

This study uses the following gravity model in identifying the effects of the RTAs on mutual trade flows of partner countries. In addition to the basic model which uses traditional GDP and distance, an extended version includes population, common border, and regional dummies to identify trade creation and trade diversion. *Equation 1* shows the basic model with regional dummies, and *Equation 2* puts all the additional independent variables together. The expected signs of these independent variables are shown in *Table 5*.

Equation 1

$$\ln(mtrade_{ijt}) = \beta_1 + \beta_2 \ln(Y_{1t}) + \beta_3 \ln(Y_{2t}) + \beta_4 \ln(distance_{ij}) + \sum_{h=1}^{k} \gamma_h RTAc_{hijt} + \sum_{h=1}^{k} \delta_h RTAd_{hijt} + \beta_5 \ln(Z_{ijt}) + \epsilon_{ijt}$$

Where $mtrade_{ijt}$ is the value of mutual 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 i[th] country in year t and '*distance*' is the geographical distance between the capital cities of the two countries measured in kilometers. $RTAc_{ijt}$ is a trade creating dummy that takes the value of 1 if country i and country j belong to the same RTA and 0 otherwise. $RTAd_{ijt}$ is a trade diversion dummy that takes value of 1 if only one of country i or j is a member of a RTA and 0 otherwise. Z_{ijt} represents other variables that affect mutual trade flows. Previous studies have included various other variables that can explain mutual trade flows between countries. They include geographic, economic, social, and historic trade policy variables among others. In this study, we estimate the following empirical model.

Equation 2

$$\ln(mtrade_{ijt}) = \beta_1 + \beta_2 \ln(Y_{it}) + \beta_3 \ln(Y_{jt}) + \beta_4 \ln(N_{it}) + \ln(N_{jt}) + \beta_6 distance_{ij} + \beta_7 border + \beta_8 APTAc_{ijt} + \beta_9 CECAc_{ijt} + \beta_{10} APTAd_{ijt} + \beta_{11} CECAd_{ijt} + \varepsilon_{ijt}$$

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

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

Where N_{it} is the population of the i^{th} country in year t,. Variables of *border*, *APTA* and CECA are dummy variables. The variable *border* takes the value of 1 if countries *i* and *j* share the common border and takes 0 otherwise, APTAc and CECAc are included to identify the trade creation effects of the two free trade agreements APTA and CECA on trade flows between countries and take the value of 1 if the countries *i* and *j* belong to the same FTA and takes 0 otherwise. APTAd and CECAd are included to capture the trade diversion effect of the two trade agreements which are defined as follows. APTAd takes the value of 1 if either country *i* or country j belong to APTA (but not both) and it takes the value of zero otherwise. Similarly, CECAd is given the value of 1 when either country i or country j is a partner of CECA (but not both) and it takes the value of 0 otherwise.

Estimated coefficients of GDP and population, which represent the income and the size of the economy are expected to have positive signs as large countries and countries with large population are supposed to have large trade flows. The variable *distance* is expected to have a negative sign as long distances are associated with high transport costs. The dummy variables which measure the effects of trade creation and diversion of free trade agreements on the partner trading countries are expected to have positive coefficients.

Table 5
Variables and their expected signs

Variables		***Explanation***	
Dependent			
mtradeijt	Value of mutual exports between country *i* and *j* in the year *t*		
Independent		***Explanation***	***Expected signs***
Yi	Gross Domestic Product of the exporting county i	Captures the economic size of the country	+
Yj	Gross Domestic Product of the importing county j	Captures the economic size of the country	+
Ni	Population of country i	Captures the market size	+
Nj	Population of country j	Captures the market size	+
Distanceij	Distance between country I and j	Larger Distance is expected to yield higher transportation costs	-

Border	Border takes value of 1 countries I and j share common border, o otherwise	Sharing a common border facilitates smoother economic activities	+
APTAc	Regional dummy variable for trade creation	It captures creation of trade in APTA, if any	+
APTAd	Regional dummy variable for trade diversion	It measures diversion of trade in APTA, if any	+
CECAc	Regional dummy variable for trade creation	It captures creation of trade in CECA, if any	+
CECAd	Regional dummy variable for trade diversion	It measures diversion of trade in CECA, if any	+

Model Estimation

As a preliminary step, the model is estimated using the OLS method. The dummy variable APTAd was excluded from the estimation in order to avoid dummy variable trap. The results of OLS estimation is presented in Table 1.

Table 6: Results of OLS Estimation

Variable	Coefficients	Standard errors (t-value)
Constant	-13.0558***	1.174752 (-11.11)
ln (Y_1)	.8926853***	.0447037 (19.97)
ln (Y_2)	.9097841***	.0420643 (21.63)
ln (N_1)	.2727415***	.0628722 (4.34)
ln (N_2)	.3608125***	.0787739 (4.58)
ln (distance)	-1.710902***	.1643793 (-10.41)
Border	-.1216284	.1220914 (-1.00)
APTAc	-1.103549***	.2440343 (-4.52)
CECAc	-.4245186	.2905503 (-1.46)
CECAd	.0627084	.1232198 (0.51)
Number of observations = 181 F(8,172 = 243.03 Prob > F = 0.0000 R-squared = 0.9278 Adj R-squared = 0.9240		

The OLS results presented in Table 1, show a robust association between variables (R-squared = 0.9278). All the estimated coefficients of the variables included in the gravity equation, except border, CECAc and CECAd are significant. The signs of the estimated coefficients of GDP and population are positive as expected and indicate that larger economic scale and high income levels promote mutual trade. Results confirm that both GDP and population have a positive impact on mutual trade flows.Estimated coefficients of geographical distance between the largest cities of country pairs are expected to have negative signs. In this case the estimated coefficient has the expected sign and is significant, indicating that as the distance between two countries increases, transport cost of imports become larger and it deters the trade flows between countries. This is in line with findings of similar studies *(Sampath Jayasinghe, 2004), (Kwentua, 2006), (Shujiro, 2007),(Özgül BĐLĐCI, 2008), (Kien, 2009), (Naseem Akhtar, 2010), (Lin Sun, 2010), (Espersen, 2011).*
Both of the estimated coefficients of the dummy variables that are included to capture the trade creation impact of trade agreements are negative and only APTAc is significant. This indicates that both theRTAs have not promoted bilateral trade between the partner countries. The dummy included to capture the trade diversion effect is found to be positive but insignificant indicating the absence of trade diversion as a consequence of the agreements.

The possible reasons why the agreements under consideration are not able to create trade creation and diversion effects may be because of the disproportionate trade among the member countries as many of them are of small size leading to inconsistent nature of trade among trading partners and causing trade being concentrated to only few larger and strongest member countries leaving small countries not with enough trade within the bloc*(Kwentua, 2006), (Hilbun, Kennedy, & Dufour, 2006), (Gauto, 2012).* The overall causes for lack of trade are discussed in detail below.

However, since we are using panel data, we cannot rely on OLS results alone as we have to deal with two possible issues. First is the heteroskedasticity and autocorrelation in the error term problem. Second is the correlation between some of the regressors and country pair-level effects included in the error term and endogeneity of the regressors, which can give rise to simultaneous determination. If these issues are detected, to deal with 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).

Two tests were carried out to test for heteroscedasticity. The test statistics of White's Test (chi2(46)= 129.58, p = 0.0000) and Hettest by Breusch-Pagan and Cook-Weisberg (chi2(1)= 31.55, p = 0.0000) confirm the existence of panel level heteroscedasticity. Wooldridge test for autocorrelation in panel data detected first order autocorrelation as we reject null hypothesis at 1% level of significance (F(1, 17)=14.750, p = 0.0013).

Based on the above test results, to deal with the issues of heteroskedasticity and autocorrelation, we estimated the model using the weighted ordinary least square (WLS) with corrected errors. Results of the WLS estimation is given in Table 2.

Table 7: Results of WLS Estimation

Variable	Coefficients	Standard errors (t-value)
Constant	-13.31236***	1.159226 (-11.48)
ln (Y_1)	.8943512***	.043508 (20.56)
ln (Y_2)	.8999188***	.0408818 (22.01)
ln (N_1)	.2746913***	.0612949 (4.48)
ln (N_2)	.3792009***	.0765787 (4.95**)**
ln (distance)	-1.695977***	.1703648 (-9.95)
Border	-.1309819	.1242687 (-1.05)
APTAc	-1.060053***	.232358 (-4.56)
CECAc	-.38687	.2917637 (-1.33)
CECAd	.1117463	.1186664 (0.94)
Number of obs = 181 **F(8, 172) = 234.40** **Prob > F=0.0000** **R-squared= 0.9250** **Adj R-squared = 0.9211**		

Note: *** indicates 1% significance.

WLS estimation results presented in the above table indicates that WLS estimation produces almost the same estimation results as the OLS. As in the case of the OLS, except border, CECAc and CECAd all other estimated coefficients are significant and have the expected sign. From the two dummy variables included in the equation to capture trade creation effect of RTA, only APTAc is significant. But the coefficient is not positive as expected indicating that APTA has not promoted trade among the partner countries.

6. ANALYSIS AND DISCUSSION OF RESULTS

Since no single study so far, has worked on finding the trade effects of the two agreements (CECA and APTA) together using aggregate data to find its overall value for the members, it becomes imperative to present clear facts on the grounds on which an RTA can cause inconsistent or no trade. Below are the findings about the concerns faced by the members of both agreements, which may contribute as deciding factors for the lack of trade.

If each country pair is taken as included during the estimation, then many countries appear to be inconsistent trading partners with each other. For instance, according to the Observatory of Economic Complexity (OEC), there are details on the top importers and exporters of each country, thereby helping in listing the strongest trade partners. *Table 8* shows the top exporting and importing trading partners for each country within the APTA region, as well as the resultant countries with which the partners do not have sufficient trade.

Table 8
Summary sheet of strong trading and non-trading partners within APTA

Country	**Top Exporter among members**	**Top Importer among members**	**Countries not having enough trade within the bloc**

India	China	China	Bangladesh, Lao PDR, South Korea, Singapore, Sri Lanka
Bangladesh	None	India, China, Singapore	Lao PDR, South Korea, Sri Lanka
China	South Korea	South Korea	India, Bangladesh, Lao PDR, Singapore, Sri Lanka
Lao PDR	China	China, South Korea	India, Bangladesh, Singapore, Sri Lanka
South Korea	China, Singapore	China	India, Bangladesh, Lao PDR, Sri Lanka
Singapore	China	South Korea	India, Bangladesh, Lao PDR, Sri Lanka
Sri Lanka	India	India, China, Singapore	Bangladesh, Lao PDR, South Korea, Sri Lanka

Source: http://atlas.media.mit.edu (Compiled by the Authors)

(APTIAD, 2013), gives a detailed import figures of the APTA participating states as shown in Tables 9, 10, 11, and 12. The Asia-Pacific Trade and Investment database concludes that even though the number of items for concession has risen among the members, the value of trade as a group has stagnated. India and Sri Lanka have witnessed an increase in their import shares because of an increase in the import shares of China and Korea. Lao PDR's performance remains negligible.

Table 9
India's total imports on APTA Concession items

Years	**2005**	**2011**

Concession offering country	No. of Products	Intra-APTA Share (%)	No. of Products	Intra-APTA Share (%)
Bangladesh	50	0.748	79	1.297
China	436	78.309	445	84.198
South Korea	319	17.268	387	12.63
Lao PDR	0	0	2	0.004
Sri Lanka	149	3.675	225	1.872
Total APTA Concessions	570(48)	100	570(48)	100

Source: World Integrated Trade Solution-http://wits.worldbank.org/. The figures in parenthesis indicate concessions to LDCs.

Table 10

China's total imports on APTA Concession items

Years	2005		2011	
Concession offering country	No. of Products	Intra-APTA Share (%)	No. of Products	Intra-APTA Share (%)
Bangladesh	172	0.03	322	0.106
South Korea	1502	97.286	1423	96.102
India	1034	2.638	1158	3.717
Lao PDR	62	0.009	116	0.022
Sri Lanka	262	0.037	360	0.053
Total APTA Concessions	1697(161)	100	1697(161)	100

Source: World Integrated Trade Solution-http://wits.worldbank.org/. The figures in parenthesis indicate concessions to LDCs.

Table 11

Korea's total imports on APTA Concession items

Years	2005		2011	
Concession offering country	No. of Products	Intra-APTA Share (%)	No. of Products	Intra-APTA Share (%)
Bangladesh	164	0.059	264	0.243
China	1329	98.243	1306	97.764
India	880	1.672	983	1.949

Lao PDR	18	0	58	0.003
Sri Lanka	31	0.026	40	0.041
Total APTA Concessions	1367(306)	100	1367(306)	100

Source: World Integrated Trade Solution-http://wits.worldbank.org/. The figures in parenthesis indicate concessions to LDCs.

Table 12

Sri Lanka's total imports on APTA Concession items

Years	**2005**		**2011**	
Concession offering country	**No. of Products**	**Intra-APTA Share (%)**	**No. of Products**	**Intra-APTA Share (%)**
Bangladesh	18	0.248	26	0.44
China	319	29.108	331	47.99
South Korea	213	12.353	203	40.54
India	338	58.291	336	11.02
Lao PDR	0	0	0	0
Total APTA Concessions	427(72)	100	427(72)	100

Source: World Integrated Trade Solution-http://wits.worldbank.org/. The figures in parenthesis indicate concessions to LDCs.

The data implies that if the share of overall trade in APTA appears to be positive somewhere, it is solely because of the contributions of China, South Korea and to an extent, India.

1. The Brief note on APTID also highlights the major areas where the member countries need to work upon to improve the overall trade performance of the bloc. Firstly, the region is in urgent need to review and enhance its political dialogue. Being the oldest trade agreement in Asia, it has only had four conference rounds so far. Secondly, the membership needs to be expanded to larger and active countries to even out the trade performance for all. Despite the fact that it comprises of the largest market in the region, with 2 countries having the largest population, yet it has not been able to generate sufficient ardor in other developing countries. It is lagging behind in terms of deeper and uniform concessions, addressing disputes and working on other areas of cooperation among many. It is also suggested to renew the agreement to Asia-Pacific Free Trade Area, to deal with the present delays in concessions due to lesser Margins of Preference. The biggest players, China, Korea, and India are anyhow have either concluded or negotiating bilateral CECAs, APTA on the whole, can work towards making less developed countries like Bangladesh, Sri Lanka and Lao PDR more inclusive. Another major concern with APTA is its inaccessible database. It becomes difficult to examine the success or failure of an RTA when the availability of preferential trade data is limited.

2. (Rahul Sen, 2013), is one study which shows the positive impact of the Asia-Pacific Trade Agreement on India and China's exports, excluding the rest of the members. The focus of that study is only on these two largest countries of the region which already trade enough with each other, also proved by the data of OEC. It does not however, includes or acknowledges the share of other member countries. Since other Asian trade agreements are also included, it briefly compares the impact of CECA and APTA on India's trade, implying that CECA's impact on India's trade is still not as positive as it should be, stating that it is still a new agreement as compared to APTA. In fact it states that APTA is observed to be the only Asian trade agreement India is a part of, which has led to increased exports in India.

7. CONCLUSION

This study examines the trade creation and trade diversion effects in the context of India and the ISCECA and APTA. The underlying motive of countries coming together to form an RTA is to reap the trade, investment, and economic cooperation benefits offered under the provisions. The study uses a gravity model in a multiple regression framework for the period 2005 – 15, and finds that the two agreements have failed in both trade creation and trade diversion, even though variables such as GDP, population, and distance show expected and significant signs.

The results may be explained by the fact that the agreements include a cluster of smaller, economically less influential countries, the high cost of intra-regional trade, and prominence of South-South integration.

APTA's structure is characterized by limited scope of agreements, overlapping memberships leading to confusion in objectives and rules of origin which are anyhow stringent, acting as some of the reasons why the Agreement has not been able to create substantial trade among the members.
Lack of trade complementarity, wide scope of lower concessions by relatively large economies like India and China, and complete non-performance of Lao PDR too have significantly affected the trade flows in APTA, preventing sufficient trade from being facilitated.

The lack of trade creation and diversion indicates that the design and provisions of the agreement are not efficient enough to stimulate trade among the member countries. Government can play its part in this regard by creating an enabling business environment, narrowing the margin of preference, and neutralizing the adverse effects endured by the members by some financial compensation.
The results are in keeping with trends in the India-Singapore trade flows under ISCECA which showed that even though India's exports to Singapore rose by 1.48 percent post the commencement of ISCECA, the imports share dropped by 0.53 from 2008-09. This trend was observed alongside an overall decline in India's import share with other countries following the global recession of 2008. Though India's financial sector was not directly linked to the global markets, its trade and capital flows had been well integrated with the world trade, raising apprehensions among foreign investors during the time. This had an adverse impact on the

overall trade between India and Singapore. The major players of APTA i.e. China, Korea, and India showed more resilience in trade during the time.

8. SUGGESTIONS AND POLICY OPTIONS

The possibility of better trade is created when there are both agricultural and non-agricultural products involved, and not mainly agricultural products. This is another area of concern and possible future line of action for Asia and the Pacific region, since most members are in the process of development with high population, involved in the trade of agricultural products; trade facilitation is more inclined towards agro-based products.

There is also lack of trade complementarity among the countries; India's total imports have less than 45 percent complementarity with exports in Asia-Pacific, and that too from lower income group countries, which can be improved through better interactions and concessions with the members.

Lower concessions on behalf of economically larger countries like India and China, and a complete non-performance on behalf of Lao PDR owing to multiple unresolved country-specific concerns, absence of a consistent, stable and more developed country with a cluster of smaller countries has supposedly stagnated the trade potential of Asia-Pacific. Thus, raising of concessions and encouraging participation from weaker countries can boost trade.

The cost of engaging in intra-regional trade in the Asia-Pacific, too, is notably high, nearly five times higher than the costs in the countries of the European Union. The 2011 Asia-Pacific Trade and Investment Report also shares that major economic players of the agreement like India and China, are among the biggest offenders. The countries can thus, improve their status in terms of posing discriminatory measures, applying tariff lines in product categories, and taking care of the sectors being adversely affected due to the discriminatory measures.

Another obvious concern raised by the Asia-Pacific report of 2009, is that South-South integration has never been much successful in terms of facilitating trade and investment as compared to larger, more advanced regions, or regions having North-South RTAs. The persistent causes and resultant areas of improvement for this comprise of a relatively limited scope of agreements, hollow commitments, stringent rules of origin, and a detached private sector due to untimely and improper implementation.

Overall, the concept of 'noodle bowl'*(ESCAP, 2015),*is adopted mostly for Asian integration agreements, which are characterized by overlapping, duplicate, and at times, conflicting memberships, making it difficult for the RTA to be implemented well enough as to reap the benefits of integrated region. This can be prevented by clearly defining the scope and role of each member of the RTA.

The role of State governments is of paramount importance in tackling with the dry trade and economic conduct among the regions. Guidelines can be laid for economic and industrial

restructuring to help national economies adapt to the dynamic competitive advantages and circumstances in the global environment.

Creation of an enabling business environment is another crucial step towards improving trade among the members. This can be made possible when a set of rules and regulations are rightly formulated and enforced, bringing predictability, stability, and transparency to the trading environment. This should be done in sync with the deregulation of unwanted obstacles to trade. Also, continuous negotiations should be held to ensure there in no conflict in commitments and priorities of the members.

Sectors that hold the greatest value and interest for the region's economies should be identified, and a deeper Most Favoured Nation liberalization approach should be adopted in those sectors. This would sufficiently narrow the margin of preference, bringing down the possible adversities of an RTA's market access objective.

Some degree of the negative effects of an RTA endured by the members can also be neutralized by offering financial compensation.

A suggestion for further study is to follow (Rahul Sen, 2013), and examine the impact of APTA on two prominent members such as India and China only.

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