Impact of FTAs: Trade Creation and Trade Diversion

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Structure of the Presentation

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Background

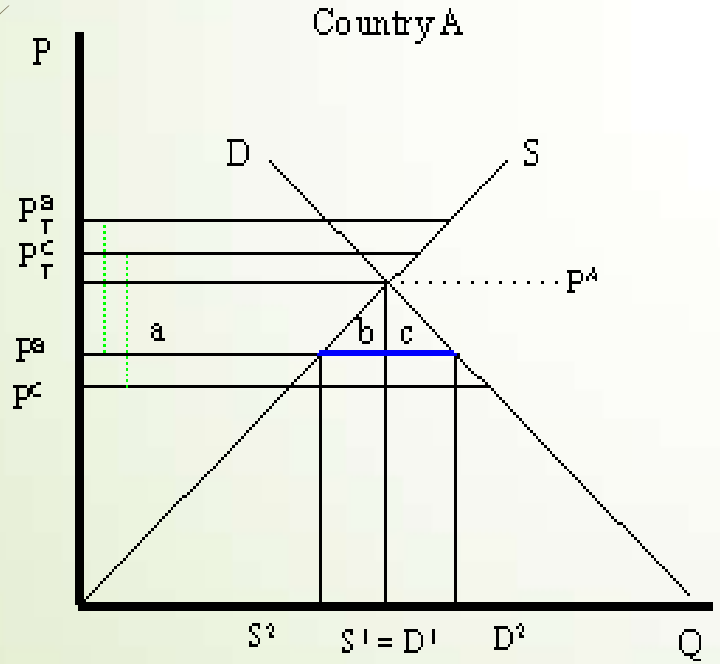
- The welfare effects of a new FTA or customs union, has often been a topic of interest for member countries and non-member countries.
- At first it may appear that the move towards freer trade is a good thing. But at second thought there are many objection that follow:
  - *Net impact of trade creation and trade diversion*
  - *Impact on non-member countries*
  - *Trade warfare*
- The signing of TPP that followed discussions regarding the welfare gains or losses. A study by Peterson Institute (2015) highlighted that member countries of TPP stand to gain $2052 billion and excluded regions, like India, China, Europe, etc, stand to lose $134 billion. Also India could gain $500 billion exports upon participation in TPP.
- Most recently, the Economic Survey of India (2015-16) highlights that FTAs have led to increased imports and exports for India, although the former has been greater. It was found that the average effect of an FTA is to increase overall trade by about 50 percent over roughly four years.

Conceptual Framework

- 3 countries- A, B and C
- 'A' is a small country, and hence takes international prices as given
- Initially, 'A' has a MFN tariff rate, "t", applied to imports from both B and C
- $P_c < P_b$
- Now, A and B form free trade area.
- When the FTA is formed, country A maintains the same tariff against country C, the non-FTA country.

Trade Creation

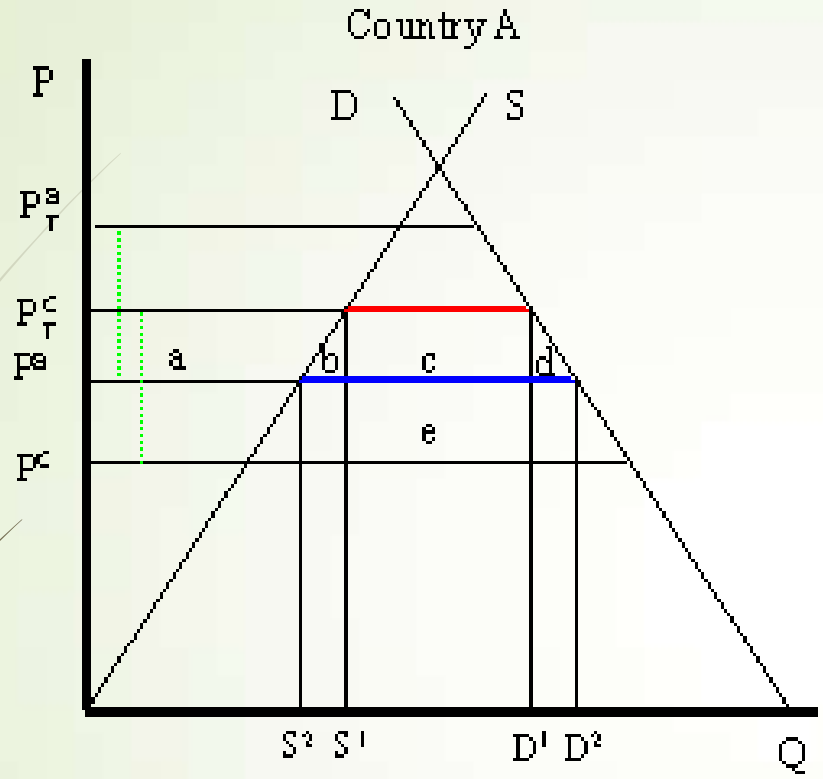
- Trade creation means that a free trade area creates trade that would not have existed otherwise. As a result, supply occurs from a more efficient producer of the product. In all cases trade creation will raise a country's national welfare.

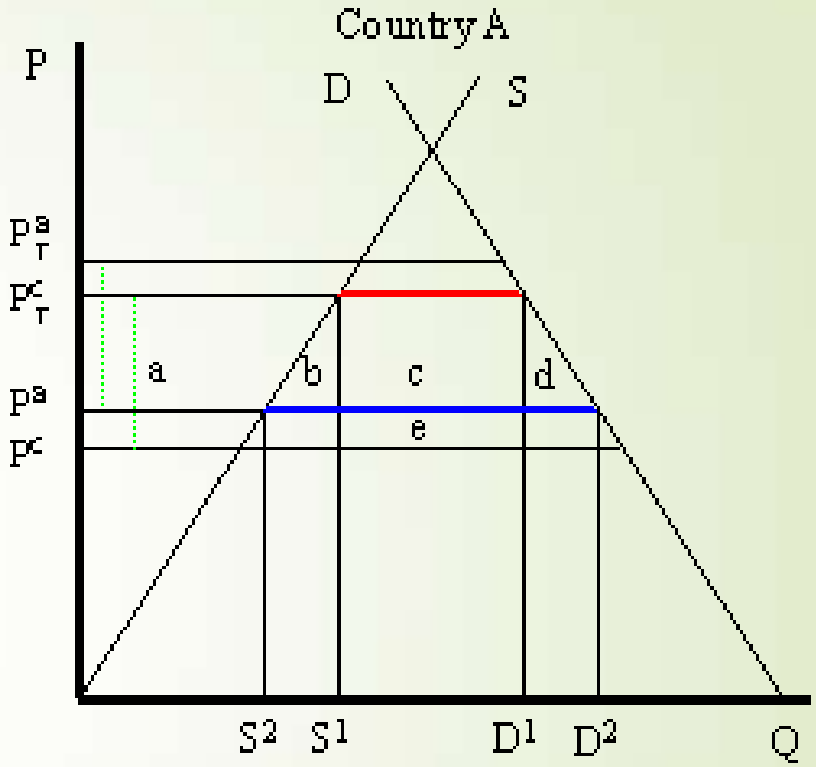


Welfare Effects	
Consumer Surplus	+ (a + b + c)
Producer Surplus	- a
Govt. Revenue	0
National Welfare	+ (b + c)

Trade Diversion

- Generally it is believed that trade diversion means that a FTA diverts trade, away from a more efficient supplier outside the FTA, towards a less efficient supplier within the FTA. Hence it is welfare reducing.
- But there are 2 cases that show that trade diversion may be welfare enhancing and welfare reducing.





Welfare Effects	
Consumer Surplus	+ (a + b + c + d)
Producer Surplus	- a
Govt. Revenue	- (c + e)
National Welfare	+ (b + d) - e

Overall effect on national welfare depends on the magnitude of b,d and e. Larger the difference between the non-distorted prices in the FTA partner country and in the rest of the world, the more likely that trade diversion will reduce national welfare.

Summing up

- The formation of a free trade area can lead to trade creation or trade diversion.
- Trade creation involves new trade that would not exist without the FTA and is always beneficial for the countries in terms of national welfare.
- Trade diversion involves the shifting of trade away from one country toward one's free trade partner and is sometimes detrimental to the countries in terms of national welfare.
- Efficacy of any trade agreement would depend on the net effect of trade creation and trade diversion.

Literature

- Viner (1950), pioneered the economic analysis of Preferential trade Agreements (PTAs). It showed that that PTAs could enhance or reduce national welfare- depending on the net effect of trade creation and trade diversion.
- Summers(1991) and Krugman (1991) discuss that if countries entering RTA are "natural trading partners" (high initial volume of trade), then trade creating effects will outweigh trade diverting effects. While trade diversion is unlikely to involve large efficiency costs, trade creation is much more likely to involve real efficiency gains.
- Krugman (1991)also identifies distributional impact of an FTA. FTAs, while doing little damage to themselves or each other, can easily inflict much more harm on economically smaller players that for one reason or another are not part of any of the big blocs.
- Magee (2003) concludes that large bilateral trade flows among countries significantly increase the likelihood that countries will form a preferential agreement. Thus supporting the natural trading partner theory.

- Bhagwati and Pangariya (1996) argue that given high initial volume of trade, it is not only efficiency losses, but also tariff revenue redistribution that impose losses on member countries of PTAs. Thus, more natural the trading partner, according to Summers definition, the larger the loss from a discriminatory tariff liberalization with it.
- Magee (2007) shows that trade is estimated to increase by 26 percent on average in the four years leading up to the start of a trade deal. Trade continues to rise significantly over the first 11 years a regional agreement is in place, and the long-run impact of the average regional agreement is estimated to be an 89 percent increase in trade flows.
- Kreuger (1999) shows that NAFTA has been trade-creating and not trade diverting. Mexico 's rising share in US markets since 1994 , was not merely due to NAFTA. The gains in shares are most pronounced in the commodities, where the share in rest of the world also rose. Increased Mexican share in trade with the rest of the world was almost as large as the proportionate increase in share in trade with the U.S.
- Clausing (2001) tests the welfare effects of the Canda-US FTA(CUSFTA). The paper finds substantial trade-creation effect of the FTA. Tariff liberalisation was responsible for over half of the increased US imports from Canada between 1989 and 1994. commodities that experienced largest reduction in tariff, had largest increases in trade.

Methodology adopted in Literature

- Studies in the past have adopted mainly 3 methodologies to ascertain the impact of an FTA. These are:
  - Ex-ante Studies have used CGE Modelling Approach
  - Ex-post Studies have mainly used:
    - Share of intra-agreement trade
    - Gravity Model

Impact of ASEAN-India FTA in trade in goods

India and the ASEAN (Association of South East Asian Nations) comprising Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam signed the Trade in Goods Agreement in 2009, which came into force in 2010.

Gravity Model

- Basic Gravity Model, given by Tinbergen (1962)

$$X_{ij} = A\frac{Y_i Y_j}{D_{ij}},$$

where Xij is trade flows or exports from country i to j. Y_i is GDP for country i and Y_j is GDP for country j. D_{ij} denotes geographical distance between the two countries.

Log-Linear form:

$$\text{Log}\,(X_{ij}) = \alpha + \beta_1 \text{Log}\,(Y_i) + \beta_2 \text{Log}\,(Y_j) + \beta_3 \text{Log}\,(D_{ij}) + u_{ij}$$

The **Augmented Gravity Model** is an extension of the Gravity Model, to include different types of barriers and other restrictions on trade flows- language, colonial linkage and common border.

$$\text{Log}(EXP_{ijt}) = \beta_0 + \beta_1 \text{Log}(GDP_{it}) + \beta_2 \text{Log}(GDP_{jt}) + \beta_3 \text{Log}(Pop_{it}) + \beta_4 \text{Log}(Pop_{jt}) + \beta_5 \text{Log}(Dist_{ij}) + \beta_6 (\text{border}) + \beta_7 (\text{language}) + \beta_8 (\text{colony}) + \beta_9 (RTA_1) + \beta_{10} (RTA_0) + U_{ij}$$

where

EXP_{ijt} : exports from country *i* to country *j* for the period *t*.
GDP_{it}: Gross Domestic Product of country I in time t in US dollars (2005).
Pop_{it}: Population of country I in time t.
$Dist_{ij}$: Dist. is the distance between country *i* and country *j*
Border: =1 if countries share a common border and 0 when they do not.
Language: =1 when two countries share a common language.
Colony: =1 when two countries share a colonial past.
RTA_1: =1 when both countries are members of the RTA and 0 if they do not. This measures the degree of trade-creation effects of the RTA
RTA_0: =1 when either of the country is a member of the RTA and 0 otherwise. This measures the degree of trade-diversion effects of the RTA between members and nonmembers, compared to bilateral trade flows.

We run the model using data for the years 2005-2014, for 29 countries- ASEAN (10), India and India's top export destinations

Results

lnexp1	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
lngdpr	291.935	35.31542	8.27	0.000	222.718	361.1519
lngdpp	227.3231	35.35806	6.43	0.000	158.0226	296.6236
lnpopr	-20.58582	41.23179	-0.50	0.618	-101.3986	60.227
lnpopp	-28.49017	41.10397	-0.69	0.488	-109.0525	52.07213
lndist	1162.811	73.71902	15.77	0.000	1018.325	1307.298
border	533.182	121.7454	4.38	0.000	294.5655	771.7986
language	46.9265	78.48233	0.60	0.550	-106.896	200.749
colony	10.70706	90.71339	0.12	0.906	-167.0879	188.502
rta1	788.0524	115.0276	6.85	0.000	562.6024	1013.502
rta0	-38.48527	56.04113	-0.69	0.492	-148.3239	71.35332
_cons	-6477.24	541.3095	-11.97	0.000	-7538.187	-5416.293

- The coefficients of the GDP variables for both countries are positive and are also statistically significant.
- The population coefficients are negative and statistically not significant in the models.
- The distance variable does not have the expected negative sign.
- Border, language and colony variables have the expected positive sign but with varying degree of significance.
- The estimated coefficient of the dummy variable, RTA_I, has the expected positive sign and statistically significant. This variable is expected to measure the degree of trade-creation effects of the regional trade agreement between members. RTA_O, has a negative sign. This variable is expected to capture the degree of trade-diverting effects between members and nonmembers, compared to the "normal" bilateral trade flows

Future Work

- This was only a general analysis, for determining whether the India-ASEAN FTA has been trade creating or trade diverting.
- Also, more variables, such as impact of bilateral FTAs among the countries under consideration may also have significant impact.
- Price and tariff analysis at HS-6 digit commodity level, will provide the quantum of the trade creation and diversion effects. This will be subsequently undertaken.
- Methodological issues: Some methodological issues will have to be addressed, like checking for non-stationarity and correcting for autocorrelation using suitable techniques.

Thank You