Regional Trading Arrangements and Third Country: A case Study

by

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1: Introduction

Regional trading arrangements (RTAs), as is well known, are liberalisation initiatives among select countries. As such, though to a limited extent, it creates a movement towards liberalised trade regime. Being a phenomenon of the twentieth century, the literature dealing with RTAs is also relatively new. The doctoral work of Jacob Viner initiated impact analysis of RTAs. His work has been followed by other theoretical and empirical work trying to understand the impact of RTAs on member countries.

The impact analysis primarily rotates around the trade diversion, trade creation aspects of RTAs, as identified by Viner. However, at this point it needs mentioning that certain other aspects of RTAs have also been highlighted by other studies, notable among them is the adjustment process that gets initiated by the formation of RTAs.

Paul Krugman (1991a) opined that this trade diversionary effect of an RTA would be much stronger than the beneficiary effects to members and thus affect the global trade liberalisation. The adverse impact on multilateral trade liberalisation implies the same for non-members that in turn would affect the members also.

According to Bond and Syropoulos (1996a), the extent of the adverse impact depends on the comparative advantage enjoyed by non-members over members.

Formation of regional trading arrangements goes towards liberalisation of trade regime of the member countries. Trade liberalisation brings in certain benefits for the liberalising country. Being a liberalisation initiative, thus formation of regional trading arrangements is expected to usher in certain benefits of a liberalised trade regime. But, there exists a difference between going towards a

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liberalised trading regime for all the partner countries and regional trade liberalisation. The latter being liberalisation initiative among select countries, a discriminatory environment is created. The member countries enjoy increased market access in the region’s market over non-members.

This discriminatory environment is expected to result in adverse implications for the non-members entering the region’s market. This in fact is one of the main concerns of the multilateral forum regarding regional trading arrangements. Looking from another side, even the member country economies are also expected to get adversely affected, accepting that even unilateral trade liberalisation leads to increased benefits for liberalising country.

That is, a country participating in the multilateral initiative for trade liberalisation experiences increase in the economic benefits. The country joining a regional trading arrangement creates discrimination among the members and non-members. This in-turn leads to increased barrier for the non-members, which in turn is expected to erode away certain benefits of trade liberalisation for the member countries.

This paper attempts to analyse the specific issue of third country entering a region’s market. The next section of the paper (section 2) discusses the main theme of the paper; Section 3 discusses the model used for analysing the issue; Section 4 discusses the results and the last section is the concluding one.

2: The Paper
The paper considers the impact of discrimination created by the formation of the regional trading arrangements. It directly deals with third country entering the region’s market. If a third country exports get affected in the region’s market as a result of the formation of the RTA, then it can be claimed that the same has led to increased market barrier for the country under consideration. The member countries are enjoying increased market access in the region driving out the third country. This displacement of the third country by the member country producers arises because increased preference received by the latter. The increased market access enjoyed by members erodes away the competitiveness of the third country products in the region’s market while making the member country products artificially more competitive there.

The regional trading arrangement considered in the paper is the North American Free Trade Area (NAFTA). The third country entering the region’s market considered here is India. USA happens to be the top export market for India. EU, USA and Japan account for more than 50 per cent of India’s
global exports. Under such a situation, if NAFTA erodes away the market access negotiated at the multilateral level in NAFTA market, then that would get reflected in the export performance of the country. Moreover, there happens to be some commonality between the export sectors of India on one hand and Mexico on the other. Striking example is textiles. With the formation of NAFTA, Mexican items get duty free entry into the USA market. So, there is a probability of certain important export item for India getting affected because of the formation of NAFTA.

A result revealing adverse implications of NAFTA on India’s exports would allow us to claim that the formation of the same has resulted in increased trade barriers for the third country, which in turn is expected to drive away certain benefits of trade liberalisation for the member countries. Apart from the third country getting affected in the region’s market, the member countries are also expected to get affected in terms of going for a less competitive item from region’s producers, displacing the more efficient third country producers.

It cannot be denied that the export performance of a country depends on multiple factors. Hence, the formation of RTA cannot be singled out as the cause of the poor performance of a country on its export front. While RTAs might turn out to create trade barriers in the region’s market, the multilateral negotiation under the gamut of the World Trade Organisation is expected to result in a positive impact on a country’s export performance. Whatever the extent of market access negotiated at the multilateral level, unless the demand exists, the country cannot improve its export performance. Coupled with these are factors like the competitiveness of the country in the international market and its supply capability.

Taking note of all the above factors, a model has been defined to analyse a country’s export performance in relation to its exports to RTAs.

3: The Model

Keeping in mind the above discussion, the model attempted is defined as under:

\[ IX = f(WM, IGDP, UVI_{Exp}^1, D) \]

Where

- \( WM \) = World Imports
- \( IGDP \) is India’s GDP
- \( UVI_{Exp}^1 \) = Unit Value Index for Exports of India
D = Dummy Variable for NAFTA

Thus

For NAFTA

\[ D = 0 \text{ for } t < 1994 \]
\[ D = 1 \text{ for } t \geq 1994 \]

The explanatory variables defined above are highly collinear, thus leading to inability to identify parameter estimates. Since obtaining additional data was not feasible, we redefined the model above to minimise the problem. The models finally estimated are given below.

**Model 1**

The first variation to the above model is considering India’s share in World imports as the dependent variable. The model is as under.

\[ \text{IShare} = f(D\text{GDP}, T\text{OT}, D) \]

Where IShare = India’s Exports As A Share Of World Imports

DGDP = India’s GDP Deflated by World Imports

TOT = Ratio of Unit Value of Exports to Unit Value of Imports

for India

D = Dummy Variables for NAFTA.

**THE DEPENDENT VARIABLE**

India’s exports as a share of world imports would reveal the position of the country in the global trading arena. An increase in the share would imply an improvement of India’s position in the international market; a decrease in the share would indicate the opposite.

**EXPLANATORY VARIABLES**

1. India’s GDP reveals India’s supply capability. The world imports can be considered to be an indicator of global demand capability. The ideal global demand indicator would have been the global GDP. But there is no consistent time series data for world GDP available. Hence, world imports have been taken as a proxy to world demand capability. Dividing India’s GDP by world imports would thus give India’s supply capability proportionate to world demand. The increase in this proportion is expected to get reflected in increase in India’s share in world market. This in turn is expected to lead to increase in India’s exports as a share of world imports.
A positive relationship is thus expected between DGDP and IShare, if exports are supply constrained.

2. TOT is the ratio of Unit Value Index of India’s Exports to Unit value Index of India’s Imports. That is, it can be considered as the relative price of India’s exports. An increase in TOT thus implies the increase in the relative price of India’s exports. This in turn implies a decrease in India’s competitiveness in the international market. A decrease in competitiveness in the international market is expected to have an adverse implication on India’s exports and thus bring down the latter. So, a negative relationship is expected between the two.

3. The dummy variable has been included to analyse the main theme of the paper – the impact of RTA formation on the third country exports. Through the dummy, attempt has been made to see the impact of NAFTA on India’s exports.

The adverse impact on the third country is expected because of the trade diversion aspect of and RTA. This trade diversion is the result of the difference in market barrier levels faced by members and non-members.

Now the imposition of a market barrier, for example tariff, usually affects exports or imports of the next year. That is, there usually exists one-year lag. The members of an RTA enjoy preferential tariff from the day the RTA becomes operational. However, it might be quite reasonable to expect that the impact on imports would start getting felt from the next year. Considering this, the RTAs have been defined accordingly.

For NAFTA
\[ D = 0 \text{ for } t < 1995 \]
\[ D = 1 \text{ for } t \geq 1995 \]

The operationalisation of an RTA is expected to erode away the market access of the third country in the region’s market. Hence, a fall in the exports of the third country is expected as a result of the formation of an RTA. This in turn is expected to get reflected in India’s share of exports in world imports.

Thus, the dummy is expected to have a negative relationship with IShare.
Thus the model becomes

\[ \text{IShare} = C + \frac{\gamma_1}{\text{DGDP}} + \frac{\gamma_2}{\text{TOT}} + \frac{\gamma_3}{\text{D}} \]

**Model 2**

The second variation to the above model considers India’s integration with the world as the dependent variable. The model is defined as under.

\[ \text{Integration} = f(\text{TOT}, \text{WM}, \text{D}) \]

Where Integration = India’s Trade as a Share of India’s GDP

- TOT = Ratio of Unit Value of Exports to Unit Value of Imports for India
- WM = World Imports
- D = Dummy Variable for NAFTA.

**DEPENDENT VARIABLE**

Integration has been defined as India’s trade as a ratio of India’s GDP. This is basically a measure of the country’s openness. With a country gradually moving towards higher degree of liberalisation, it’s trade is expected to increase, thus increasing the share of trade in GDP. Similarly, with the country getting more market access in the international market, the integration is expected to increase. On the contrary, if the market access in the international market gets eroded, then integration is expected to decrease.

**EXPLANATORY VARIABLES**

1. TOT is defined as in the previous model. An increase in the TOT implies an increase in the relative price of India’s exports; this would lead to a decrease in India’s competitiveness and adversely affect exports of the country. This in turn is expected to get reflected in terms of lowering of the integration.

   Thus, TOT is expected to have a negative relationship with Integration.

2. Exports of a country are dependent on international demand. However, it is more likely that the supply of this year is based on the experience of the last year. Considering this, it is expected that the world imports of one particular year would have implications for India’s exports for the next year.
An increase in the international demand is expected to increase the supply in terms of exports. This in turn is expected to lead to an increase in the integration level.

So, a positive relationship is expected between world imports and Integration.

3. The behaviour of the dependent variable depends on past experience. Hence it is expected that the previous year’s integration level would have a direct impact on the integration level of the current year. This is typical of time series analysis.

Going by this, a positive relationship is expected between the dependent variable and the explanatory variable.

4. The Dummy is defined in the same way as in the previous model. The formation of an RTA is expected to result in some adverse implications for the third country exports. This in turn is expected to bring down the integration level.

Hence a negative relationship is expected between the Dummy and Integration.

Thus the model becomes

\[ \text{Integration} = C + \gamma_1 \text{WM}(-1) + \gamma_2 \text{TOT} + \gamma_3 \text{D} \]

4: Empirical Results

4.1: Data Set

The basic data used in the two models specified above are India’s exports, India’s Imports, India’s GDP, India’s Unit Value Index for Exports and Imports and World Imports. The period considered is 1980 to 2000.

For India’s data, the source is “Economic Survey”, Ministry of Finance, Government of India, Various Issues. For World Imports, data from “Direction of Trade Statistics Yearbook”, IMF have been used.

The above data have been used to calculate the values for the dependent variable IShare. IShare has been defined as India’s Exports as a share of World Imports.
Based on the above data, DGDP has been calculated by taking the ratio of India’s GDP to World Imports. Both India’s GDP and World Imports are in USD Terms. To get India’s GDP in USD terms, the exchange rate data have been used. The data have been taken from “Economic Survey”.

The TOT has been calculated, taking the ratio of Unit value Index for Exports to Imports.

Integration has been defined as India’s Trade as a share of India’s GDP. The series has been calculated, based on the above-mentioned data.

4.2: Estimation
As mentioned earlier, the main objective of the model is to test the impact of RTAs on third country exports. We now discuss the results of the two model separately.

Model 1
The Results of model 1 are given in Table 1

One usual problem in time series model is serial autocorrelation. The problem has been taken care of by introducing lagged residual to the order as necessary in each of the cases.

The significant explanatory variables turn out to be NAFTA and DGDP.

Model 2
The results of Model 2 are given in Table 2. No autocorrelation has been detected in the model. The significant explanatory variables in this case are World imports and integration level for the previous year.

4.3: Explanation of the Results
Model 1
The Dummy for NAFTA is seen to indicate a negative relationship with India’s exports as a share of world imports (∀j-C). Thus, The results do support the incidence of third country exports getting affected out of the formation of an RTA.

India’s GDP proportionate to World Imports is seen to have a negative impact on the IShare. This can be interpreted as follows. An increase in GDP of a country also indicates an increase in the purchasing power of the country. Under that situation, it is expected that the domestic demand
would go up. This might adversely affect the exportable surplus. This in turn might have adversely affected share of India’s exports in world imports.

The TOT is not a significant variable in this case.

Model 2
In this model, the formation of NAFTA does not indicate any adverse implication on third country trade.

World imports have a positive impact on Integration. That is, an increase in world imports lead to increase in demand for exports. Hence, trade is expected to go up, resulting in increase in the integration level of the country.

As explained in the text, the level of integration in the previous year is expected to have direct impact on the integration level of the present year. As such, integration of the previous year is seen to have a positive relationship with integration of the current year.

5: Conclusion
The above results bring out multiple dimensions. In the first place, India’s share of exports in world imports is seen to have a negative relationship with the NAFTA dummy. Thus, the formation of NAFTA appears to have adversely affected India’s exports to the region and thus the share in world imports. However, the NAFTA dummy does not seem to have much implication on India’s integration to the rest of the world. That might be interpreted as follows. The formation of NAFTA led to displacement of non-members by members; hence, India as a non-member got affected in the NAFTA market; this brought down India’s share in the world market. Integration considers both exports and imports of a country. Due to the formation of RTAs, India gets adversely affected in the export sector. At the same time, being a part of the multilateral trading system, the country has gone for opening up its domestic market to foreign players. Hence, the impact is not revealed while considering Integration as the dependent variable.

That India’s exports react to world demand has been seen. Thus, the formation of the RTA, creating a discriminatory environment is expected to make third country products relatively more expensive in the NAFTA market. This in turn is expected to decrease the demand and thus the exports from India to the region.
Under such a situation then, the other side of the picture is that the formation of NAFTA resulted in creation of artificial competitiveness of the member countries. This led to the increased market access of the member countries in the region market. But this goes against the optimal allocation of global resources, leading to decrease in global welfare.

The third aspect is that of the impact on member countries. There is no doubt that the member countries enjoy increased market access due to the formation of NAFTA. But the domestic producers of a country practising restricted trade regime enjoy market access of a similar type. Here, under an RTA, the member countries, continue enjoying a certain level of protection from the non-member countries in their own country market. Apart from that, in entering member country markets, they enjoy the protection level resulting from the discrimination. Opting for a gradual global trade liberalisation is thus expected to result in higher benefits for countries than through regional trade liberalisation.

**Table 1: Model 1 Estimates**

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<thead>
<tr>
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<tbody>
<tr>
<td></td>
<td>D = NAFTA</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>0.005</td>
<td>(5.5)</td>
</tr>
<tr>
<td>DGDP</td>
<td>-0.009 ***</td>
<td>(-1.8)</td>
</tr>
<tr>
<td>TOT</td>
<td>0.0006</td>
<td>(1.2)</td>
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<tr>
<td>D</td>
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<td>(5.6)</td>
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<td>AR (3)</td>
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<td>(-2.7)</td>
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<tr>
<td>R-Square</td>
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<td>Adjusted R-Square</td>
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<tr>
<td>DW Statistic</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td>F Statistic</td>
<td>14.4</td>
<td></td>
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Note: * Less than 5 per cent significance level (two-tail test)  
** 5 to 10 per cent level  
*** 10 per cent level  
The AR(1), AR(2) and AR(3) represents the solution to the autocorrelation problem  
Source: Data Source as reported.
Table 2: Model 2 Estimates

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<table>
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<tr>
<td>Integration = f(C, WM(-1), TOT, D)</td>
<td>D = NAFTA</td>
</tr>
<tr>
<td>C</td>
<td>0.52 (1.4)</td>
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<tr>
<td>TOT</td>
<td>-0.02 (-0.6)</td>
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<tr>
<td>WM (-1)</td>
<td>0.0003 ** (2.5)</td>
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<tr>
<td>Integration (-1)</td>
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<tr>
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<td>31.2</td>
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Note: * Less than 5 per cent significance level (two-tail test)
** 5 to 10 per cent level
*** 10 per cent level

Source: Data Source as reported.

Bibliography


