

Regionalism: Contraction or Expansion of Globalization? The Case of North American Free Trade Agreement (NAFTA)

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***Abstract:** The main purpose of this study is to determine the impact of RTAs (Regional Trade Agreement) on the trade relation between the member and the non member countries of the agreement and also to determine the winners and losers in this relatively new form of trade. In order to establish this impact the trade statistics such as export – import data, foreign direct investment both inflow and outflow etc for the countries involved in the major Regional Trade Agreements of the world (NAFTA, EU) before and after the formation of the economic integration and the actual change in their trade relationship with the non-member countries have been taken. The research is based on regression analysis and hypothesis testing conducted with the data obtained. Both intra bloc and extra bloc trade data have been used to measure the trade collection and trade diversion of these countries.*

***Keywords:** India, China, Reform, FDI, GDP.*

1.0 Introduction

During the last two decades, the number of Preferential & Regional Trade Arrangements³ has increased at a spectacular rate. Almost all WTO members are now part of at least one agreement. Regional and preferential agreements are likely to be welfare reducing for the non-member countries as well as for the world as a whole because of their discriminatory and preferential nature. “A trading system divided into a number of competing trading blocs is surely inferior to global free trade. It is therefore perfectly legitimate to worry about whether the current wave of regionalism would generate forces that would slow down the efforts to liberalize the multilateral trading system (Hartmut Egger, Peter Egger

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³ While we use the term “Regional Trade Agreement”, a more precise terminology would be “Preferential Trade Agreement” because it is not necessarily an agreement between regionally close countries. In this paper, however, we use the two terms inter-changeably, by taking RTA broadly to cover trade agreements among geographically apart countries.

and David Greenaway 2006)". "Regionalism versus Multilateralism" debate deals with this the type of issue. So far, there is no clear answer to the question as to whether regional integration set out countries to participate actively in global liberalization.

Along with the globalization process, countries have been increasing their regional economic links through regional trade agreements (RTAs). Global versus regional integration has become an important policy dilemma that needs to be addressed by both economists and politicians. Though there are considerable theoretical literatures on trade creation versus trade diversion in RTAs, there are very few empirical growth studies, and no theoretical ones, that address the issue of opening to the world economy versus opening to an RTA. Participation in an RTA does not guarantee growth. But it has been proved that an open economy grows faster than a closed economy regardless of their participation in an RTA (Athanasios Vamvakidis, 1999). The complexity of deep integration offers the potential for welfare-decreasing RTAs. Non-tariff barriers hamper regional integration, and in many cases are used by large producers to segment markets in order to enjoy local monopoly power. Deep integration can improve the welfare by reducing non-tariff barriers to trade and by cutting behind-the-border trade costs. For example, in case of EU major steps has been taken to improve the operation of the internal market through establishing principles of mutual recognition and disallowing minor variations in safety, health or environment standards (see notes 13). A positive building block argument for regional agreements is that they can be testing grounds for international policies in new areas, but turning a policy designed by a few countries into a global institution may arouse fears of it being moulded to the designers' interests. This increase in regionalism and these threats for more RTAs in the near future raise again issues dealing with the relationship of RTAs and the multilateral trading system, a subject that has long been a difficult and controversial one. Although under WTO/GATT rules RTAs are explicitly permitted subject to certain conditions, the application of those rules in specific instances has seldom been possible in a definitive manner (See notes 5). As the formation of RTAs has been growing at a sharply increasing rate, this lack of workable rules has raised ever greater concerns. These concerns are fed by an uncertainty among economists whether the economic effects of RTAs are on balance negative or positive for the multilateral trading system. The progress of liberalizing trade at the multilateral level may be hindered by the extent to which the attention of trade policy diplomats is monopolized by these numerous agreements and ongoing negotiations.

Regionalism vs. Multilateralism is a much discussed topic among trade economists, but one which is surprisingly short on precise measures. We can define "regionalism" loosely as any policy designed to reduce trade barriers between a subset of countries regardless of whether those countries are actually contiguous or even close to each other.

Multilateralism is sometimes referred to as a process whereby countries solve problems in an interactive and cooperative fashion (Yarbrough and Yarbrough, 1992). But such interactions could clearly be affected by regionalism. In its recent report, the WTO Secretariat mentions two reasons why standard economic analysis would justify a country's decision to pursue preferential or regional trade agreements – first, in a world of second best, a case may be made for an individual country to reduce trade barriers on a selective basis; second, some countries may be able, through trade diversion, to secure gains that they could not otherwise achieve. It is to be noted that governments may prefer a multilateral approach, but a regional or preferential approach is more viable. This may arise, for example, because further integration under the multilateral approach is stymied by the opposition of some countries, thus making it very time consuming. A regional approach may also be followed because of a desire to protect market access, to signal a commitment to market liberalization generally and/or to attract foreign direct investment. There are at least two important issues concerning this question. The first issue is whether RTAs raise trade and welfare among the trade bloc members, without damaging the welfare of non-members, i.e. whether 'trade creation' occurs without associated 'trade diversion'. If RTAs incurred damaging effects on non-members, they would not necessarily lead to an increase in global trade and welfare. The second issue concerns the effect of the proliferation of RTAs on global trade over time. If the net trade creation effects of RTAs are positive, excluded countries can be impelled to seek membership of existing RTAs or negotiate new RTAs, thereby influencing global trade over time (Jong-Wha Lee, Innwon Park, and Kwanho Shin-October 2004). The existence of many overlapping RTAs may encounter the problem of discriminatory trade blocs that could be harmful to global free trade.

However, the existing empirical studies have mostly focused on assessing the static and aggregate effects of RTAs on intra- and extra-bloc trade. Supporters of RTAs argue that they help nations to gradually work towards global free trade by allowing countries to increase the level of competition and give domestic industries time to adjust to the global requirements. Again, RTAs can be valuable arenas for tackling volatile trade issues like, agricultural subsidies and trade in services. Political pressures and regional diplomacy can resolve issues that cause deadlock in multilateral negotiations.

Some policy analysts express doubt about the benefit of booming RTAs. They describe regional trade agreements as a complex web of competing trade interests that deter multilateral agreement. As RTAs create preferential systems that go beyond regional boundaries, the political and economic tensions can lead to hostility and increased retaliation. Through the agreement, anti-dumping charges will increase and the dispute settlement process in the WTO will be complicated by unclear and conflicting regional trade laws. On the other hand, RTAs may negatively impact global trade because regional

preferences and rules of origin distort production by making location of production or source of raw materials the driving incentive. Some analysts argue RTAs prevent complete liberalization in the multilateral arena.

According to Krugman (1993), as the number of blocs in the world decreases (that is, as integration occurs) each bloc's share in the other blocs' consumption rises, conferring more market power on each and raising the optimum tariff. Integration creates trade diversion but in this model it is exacerbated by raising the external tariff. Maurice Schiff (1996), in his study commented on the impact on home country welfare of changes on the export side because of RTA as it improved access for home country exports to the partner's market and the benefit is larger if the partner's reduction in trade barriers is high. On the other hand, the welfare impact on the home country of changes in imports associated with the formation of PTAs is still subject to debate. The former raises welfare, while the latter has both a welfare-reducing and a welfare increasing effect (with a presumption that the net effect of trade diversion is negative). Thus, the welfare impact of a PTA or RTA is unclear a priori. Moreover, it is perfectly likely that while PTA and RTA members as a whole may gain, individual members may still lose – (for example because of possible losses in tariff revenues). But a further element in assessing these agreements is to recognize their significance as process rather than simple instrument based agreements that limit the use of trade based interventions (tariffs). The 1957 Treaty of Rome set out a road map for deeper integration in Europe from joint tariffs being removed among partners to a tax union and eventually to economic and monetary union, a common currency, a common budgetary and competition policy structure, and beyond. As such it stands in sharp contrast to the NAFTA (1991) which as a one off agreement, does not set out ongoing processes for deeper North American economic integration.

2.0 Objective of the Study

With an attempt to provide more and robust evidence in the field, especially in the case of NAFTA, this study is to examine whether any trading partner of the NAFTA member countries lost their trade only because of the agreement. Therefore the objective of this study stands to examine the impact of NAFTA agreement on the participating or member countries. A secondary objective is to look at the comparative Pre and Post NAFTA trade situation between the NAFTA member and non-member countries. It has been found in various studies that Mexico is replacing the Asian countries as being the major trading partner of US in industries like the automotive, textile, and apparel industries. It is not easy to draw any conclusion on the subject but there are scopes to find out the exact impact of relaxing of trade barriers under NAFTA on some mature trading partners of USA.

3.0 Literature Review:

As the concept of globalisation and regionalism has seen a rapid expansion in recent years the relationship between the two ideas has been discussed in large number of literatures. In theoretical aspect, there is a general consensus that regionalism is an opposite term to the notion of globalisation. "Globalization interlinks the production and financial structures of countries and also creates an international division of labour (Gordon, 1988) quoted by P. Bairoch & R.K. Wright (1996). Intuitively, Held et al. (1999:16) argued that globalization enhances cross-border trading of goods, services, money, people, information, and also culture. Many commentators cite the large number of RTAs notified to the WTO as evidence of the growth and significance of regionalism. From this perspective, because the number of RTAs notified to the WTO reached an all-time high in the early 2000, regionalism was more prevalent than ever. A key theoretical and practical question is what does new regionalism signify? Is it compatible with globalisation, does it even step towards it, or does it foreshadow a turning away from the cosmopolitan world economy and a return to closed, antagonistic regional blocs and 'stumbling blocks'?

According to a large number of authors all the factors such as economic, political along with the concept 'natural trading partner' are the main driving forces of regionalism. Different authors and studies have portrayed different reasons for the rapid expansion of the preferential trade agreements between regional states. A number of studies argue that if two countries or regions are 'natural' trading partners, they are more likely to gain from a Trade Agreements between them. Lipsey (1960) argued that depending on a country's volume of international trade, welfare of a country will grow with a customs union if the proportion of the trade for the country with its union partner is higher than trade proportion with the rest of the world. Lipsey argues that when a customs union is formed, the relative price between imports from the partner and domestic goods is brought into conformity with the real rates of transformation, while the relative price between imports from the partner and from the outside world is moved away from equality with real rates of transformation. Hence, the larger are purchases of domestic commodities and the smaller are purchases from the outside world, the more likely it is that the union will raise welfare. Lipsey concludes that the size of imports from the partner is unimportant. It may be appropriate to say at this stage that multilateralism is a major feature in to-day's trading nations, as most of them now being a part of WTO, with lower trade barriers and stronger trade dispute settlement procedures than ever before. Regional Trade Agreements (RTAs) has become a major irreversible feature of the multilateral trading system, were the opening sentence of a Working Paper (Crawford and Fiorentino, 2005) quoted by (Richard Pomfret 2006). Though RTA members' reduction of tariff discriminates against the non member countries the total welfare effect of the agreement

is yet to be decided. Answering the question, will proliferation of RTAs be a “building block” or a “stumbling block”, to global free trade? Bhagwati in his paper in 1993 talked about two important issues. The first issue is whether RTAs raise trade and welfare among the trade bloc members, without damaging the welfare of non-members and the second issue is if the net trade creation effects of RTAs are positive, excluded countries can be impelled to seek membership of existing RTAs or negotiate new RTAs, thereby influencing global trade over time (see notes 7).

Krugman (1993) quoted by Isidro Soloaga and L. Alan Winters presented a model in which regional integration creates trade diversion because members raise the external tariff. However, as long as external trade barriers are not very high, trade diversion can be smaller. Clearly trade diversion can occur with discriminatory, but not most favoured nation (MFN), tariff reductions. Thus forming a regional trade agreement doesn't mean diversion of trade. It depends on the level of integration and policy adopted by the member states. On the other countries RTA gives the non-member countries to take the advantage of a bigger integrated market, thereby reducing the problem of trade diversion. The data collected from a variety of sources appear to indicate that, excluding those countries that belong to an effective regional grouping are also the ones that have most radically liberalized their trade regimes in the past decade. At the other end of the spectrum the data show that several countries in all regions of the world (e.g. Chile, Korea, Mexico and Turkey, to mention a few) significantly reduced their trade barriers without necessarily belonging to any trade agreement at the time they undertook their trade liberalization measures. Andean Group and CACM countries in the early years of their formation provide a good example. In the past, their participation in a regional grouping did not lead to any overall trade liberalization. Faezeh Foroutan (1998) commented in his paper on the acceptance of liberal trade policy by all the members for a strong and meaningful regional trade agreement. RTAs can serve a useful economic purpose above and beyond the direct gains from trade liberalization by reducing such uncertainties and by enhancing credibility - whether they be of a stable legal environment in Poland, continued access to US markets for Mexican products or a “local” market of sufficient size for a new plant in Uruguay - and hence RTA makes it easier for the private sector to plan and invest. There are a lot of regional trade agreements, active around the world at the moment. But NAFTA is a unique example as it was the first bilateral trade agreement being considered by the United States today because it was the first trade agreement in a non-multilateral setting between a developing and two developed countries. NAFTA, which took effect on January 1, 1994, provides for the progressive elimination of most barriers to trade and investment between Canada, Mexico, and the United States over the 14-year period that ends on January 1, 2008. The agreement also incorporates the Canada-U.S. Free Trade Agreement (CFTA), whose implementation was completed on January 1, 1998. NAFTA aimed at eliminating all tariffs and substantially

reducing non-tariff barriers between the member countries. In particular, the agreement eliminated the majority of tariffs and other trade barriers in its first ten years and will have phased out most remaining tariffs by 2008 (Lederman, Maloney, and Serven 2003). Since NAFTA, the automotive, textile, and apparel industries have experienced some of the more significant changes in trade flows, which may also have affected U.S. employment in these industries. U.S. trade with Mexico has increased considerably more than U.S. trade with other countries and Mexico has become a more significant trading partner with the United States since NAFTA implementation (M. Angeles Villarreal Report for congress 2003). Consequently, Mexico's share of total U.S. trade has increased while that of other countries has decreased. Some data on U.S. imports suggest that Mexico may be supplying the U.S. market with goods that may have otherwise been supplied by Asian countries. On the other hand, the World Bank Study found no significant evidence of trade diversion in NAFTA, particularly with respect to textile and apparel producers in neighbouring Central America and the Caribbean (J. F. Hornbeck, Hornbeck CRS Report for Congress).

There are some researchers who showed reservation towards idea that the growth in the level of trade between US and Mexico are only attributable to NAFTA. As the U.S. economy expanded, so does the demand for imports. A significant part of the growth in imports from Mexico after NAFTA implementation could have been due to economic growth in the United States (M. Angeles Villarreal 2003). Again the devaluation of money in Mexico made the Mexican products cheaper which also helped in boosting the US import their goods. Higher demand for Mexican products in the US market encouraged the investors to invest in Mexico. Through investing in Mexico their products got tariff advantage in the US market. By abolishing tariffs and quotas, NAFTA made Mexico a more profitable place to invest, particularly in plants for final assembly of products destined for the United States (M. Ayhan Kose, Guy M. Meredith, and Christopher M. Towe 2003). But we can also find some counter arguments, Magnus Blomström & Ari Kokko (1997) found no significant relation between regional integration agreements and foreign direct investment. We can have an impartial idea from the words of David M. Gould who found that NAFTA is not the solution to all the economic problems of North America but it is not the catastrophe that critics claimed it would be.

The conclusions from these studies are very informative but provide the readers with a mixed picture of the relationship between regionalism and globalisation. Some provide evidence of regionalism being the new face of globalisation and some say through regionalism member states try to protect themselves from the seek 'evil' consequences of globalisation. By reviewing the selected studies related to effect of RTA and NAFTA in international trade it is observed that parties who are natural trading partners and

countries that already trade disproportionately, the risk of large amounts of trade diversion are reduced"(see notes 6). And the welfare of these trade agreements largely depends on the members' volume of international trade. However, it not easier to draw some generalized conclusion on the effect on regionalism on the idea of globalisation (as regionalism is a contraction or expansion of globalisation).

4.0 Data and Methodology:

This section describes the data used in the empirical analysis, specifically the measures of trade between the NAFTA countries and the effect of NAFTA on trade creation and diversion. Most of the data relating to USA have been taken from the US International Trade Commission (USITC) (see notes 10). The United States International Trade Commission (Commission) is an independent, Federal agency with broad investigative responsibilities on matters of trade (see notes 11). The agency investigates the effects of dumped and subsidized imports on domestic industries and conducts global safeguard investigations. The Commission also adjudicates cases involving alleged infringement by imports of intellectual property rights. Through such proceedings, the agency facilitates a rules-based international trading system. To analyse the trade between the US and it's two NAFTA partners-Canada and Mexico, we export import trade data between USA-Canada and USA-Mexico from the year 1989 to 2006 for all export commodities (FAS Value) per thousand's dollars (\$1000's). Annual data have been used for the analysis. We haven't analyzed the trade between the Canada and Mexico because studies have shown that NAFTA has bought very little change in the bilateral trade between the two countries. When analysing the trade effect We have considered trade data from 1989-1994 as pre NAFTA and 1995-2006 as post NAFTA era. *Table-4* and *Graph-4* shows the increasing amount of trade between the parties after the NAFTA agreement. In addition to the data from USITC some of the data have also been taken from US Census Bureau and US Department of Commerce. Again to provide a broader view we have taken US export import data with the major trade partners from the year 1979 to 2002 (*Table-6*) to measure the direction of trade after NAFTA. The countries are Canada, Mexico, France, Germany, Japan and United Kingdom. The source of the data is UN Comtrade data and US Government agency that have collected the data for public use. It was monthly data that has been converted into annual data by taking the average of each year to perform the analysis.

To compare US trade with its major partners we have considered the trade from the year 1979-1993 as trade before NAFTA and 1994-2002 as the trade after NAFTA period. Again, European Union (EU) is another major regional trade bloc of the world so we have erected a brief comparison of the trade of the region. We have taken the trade data of EU countries (countries that actually formed EU) from the year 1975 to 2004 (*Graph-*

3). The data sources are WTO trade statistics by region and also EU trade statistics. As we know EU was formed in the year 1993 we have placed trade data from the year 1975 to 1993 as pre RTA trade and 1994 to 2004 as the post RTA trade in the region. The data has three parts the first part is intra-regional trade of the region, during the time frame. Second is part trade with rest of the region. And, the last part consists of trade with the rest of the world. We have used the average of each of the parts data to analyze the data. In addition to the US and EU trade data we have taken to major industries of USA to measure the effect of NAFTA on them. The two industries are textiles and the auto industry. Both Textiles and Auto are important elements if we want to talk about the international trade of USA. US market is one of the largest markets for the world textiles and clothing industry with market of over \$700 Billion (US census bureau). The data have been collected from USITC and US department of commerce (US Census Bureau). In this case only the import data has been collected. Here we've tried to show the impact of tariff reduction after NAFTA on the major textile and clothing exporting countries to the US market. 23 countries have been included in the data. The data shows the total import of textiles and clothing from these countries to the US market since 1989 to the year 2006 (*Table -9*). As carried out earlier in this case also the data has been segregated into two parts. Import data from the year 1989 to 1993 is for pre NAFTA period and data from 1994 to 2006 as post NAFTA period. One of the major feature of this data is that it consists of not only the developed countries (like earlier data) but also some of the less developed countries of the world like Bangladesh and Barbados for whom exporting textiles in the US market plays a major role.

For the study, we've used the average export of each country before and after the formation of NAFTA. Again, we have also analysed the impact of NAFTA on the Auto Industry. But in this case data for only passenger car and light truck vehicle category have been taken. In this case both the export and import data of USA have been taken. But some of the partner countries are different because countries like Saudi Arab features in the Import group who are one of the biggest importers of US vehicles and on the other hand Sweden sells a lot of vehicles in the US market but does not really import much from US (*Table 1 & 2*). While the above interpretations are suggestive, the analysis part is subject to serious limitations. The first limitation is lack of data. In the data set there are some key factors missing which can affect the international trade between the two partner countries. For example, a detail analysis of the level of tariff on each product on different countries could have been measured. Again, we should know that tariff is not the only factor determining the international trade. Factors like GDP, distance between two countries, border sharing (which is a very important in case of NAFTA), language all these are vital in determining the trade. If these issues were considered we could have made a better conclusion about the trade creation and diversion affect.

The same argument is applicable for the textiles and auto industry as well. The phasing out of Multi Fibre Agreement (MFA) had a great impact on the textiles industry. Only NAFTA did not create the trade diversion if there is any in the US textiles market (see notes 4). On the other hand in case of auto industry only the passenger car and light truck vehicles category have been taken for the analysis. Adding more categories may give us a different picture. With the above mentioned data in most of the case we have used paired sample T-Test. In all the cases we have suitable paired data so the test shows the difference between the means of the two sets of scores for significance. Here we have compared the means of two sets of trade data, the pre NAFTA and post NAFTA period. To analyze the significance of the data we have used 95% confidence level which means based on the paired sample T-Test we can conclude that whether there is a change in the different pair of means and whether the changes are significant⁴. In all the case my null hypothesis was that there has been no changes between the means of pre NAFTA period trade data and post NAFTA period trade data. While testing the hypothesis there has been the risk of making type-1 and type-2 error (see notes 12).

The only thing separating the two data interval are the creation of NAFTA and the changes it brought to the trade relation between the NAFTA partners and the non-members countries. Again conducting the paired sample T-Test we have plot them in a scatter plot to check the anomalies in the data. We have also estimated Pearson correlation coefficient(r) for USA export-import data with its NAFTA partner countries. It ranges in value from -1 to +1. If all of the points fall exactly on a line with a positive slope, the correlation coefficient has a value of +1. The absolute value of the correlation coefficient tells us how closely the points cluster around a straight line. To obtain the correlation the two variables used are trade data before and after the NAFTA. A regression coefficient has also been estimated for the data. Correlation is a very important research tool but they tell us nothing about the predictive power of variables. In regression model we fit a predictive model to our data and use that model to predict values of dependent variable from one or more independent variables. Here we have used a simple regression to predict the outcome of a single predictor. Our independent variable is the pre NAFTA trade data and the dependent variable is the post NAFTA data as we have tried to measure that how much the direction of trade in the pre NAFTA period describes the direction of trade in the ore NAFTA period.

⁴ The confidence interval shows the degree of certainty we can have in the estimated effects. If the confidence interval around the estimated effects of trade without NAFTA excludes the actual observed trade under NAFTA, we can say with 90 percent certainty that trade with NAFTA is different from trade without it. If the 90 percent confidence interval includes the observed trade under NAFTA, we can say that there is less than a 90 percent certainty that trade is different with NAFTA than without it.

Again we can also use the gravity model to measure the relationship between countries under free trade area. Soloaga and Winters (2001) evaluated the impact of the new wave of regionalism on bilateral trade. The conclusions were that, after controlling for the usual gravity variables (GDP, distance, common language, etc.), regionalism in the 1990s did not produce a statistically significant increase in bloc members' trade among each other. The econometric approach used bloc fixed effects for exports and imports seeking to control for the unilateral trade liberalization trend that started in the late 1980s, particularly in Latin American countries. Although those dummy variables seemed intuitively reasonable, they entered the equation entirely in an ad-hoc fashion. A recent paper by Anderson and Van Wincoop (2003) developed a method that consistently and efficiently estimates a theoretical gravity equation. Their gravity equation (equation 13 in their paper) is

$$X_{ij} = y_i y_j / y_w (t_{ij} / P_i P_j)^{1-\sigma}$$

where x_{ij} represents exports from region i to region j , y_i and y_j are the gross domestic product in regions i and j , d_{ij} is the distance between regions i and j , t_{ij} are bilateral trade barriers, P_i and P_j are price indexes for regions i and j , and σ is the elasticity of substitution between all goods.

$$\ln Imports_{ijt} = \beta_0 + \beta_1 \ln(GDP_{it} \cdot GDP_{jt}) + \beta_2 \ln Distance_{ijt} + \beta_3 \ln Language_{ijt} + \beta_4 \ln Border_{ijt} + \beta_5 \ln RER_{ijt} + DRTA_{kt} + e_{it}$$

where $\ln Imports_{ijt}$ is the log of non-fuel imports at 1995 prices made by country from country j at time t , GDP_{it} is the gross domestic product of country i at time t at 1995 prices, $\ln Distance_{ijt}$ is the log of the great circle distance between countries i and j , $Lang_{ijt}$ is a dummy variable with a value equals to 1 when countries i and j have a common language, $Border_{ijt}$ is a dummy variable with a value equals to 1 when countries i and j have a common border. RER is the bilateral real exchange rate.

As our main concern is what happened with extra-bloc trade before and after the implementation of NAFTA, here we do not need to address the issue of endogeneity of the RTAs with the volume of trade (i.e., those countries that already have been trading a lot among themselves are the ones that seek RTAs)⁵. Anderson and van Wincoop (2003) approach, we estimated equation 1 with fixed effects for importers (i countries) and for exporters (j countries). The main purpose of introducing country fixed effects is to control for unobservable invariant characteristics of countries. In our main model, we

⁵ This was not the case, for instance, in Soloaga and Winters (2001), where the main issue was the impact of regionalism on intra-bloc trade. See Baier and Bergstrand (2002) for the endogeneity of RTAs. 50 Estudios de Economía, Vol. 33 - N° 1

allow these fixed effects to vary with time aiming at controlling for the (still) country specific effects but that could have varied during our sample.

3.1 Final results:

By applying the paired sample T-Test, Correlation and regression with the data a set of results have been produced. As mentioned above we've estimated paired sample T-Test for all the data. The common hypothesis in case of all the paired sample analysis that the population mean increase is zero that is there is no significant change in trade amount after the formation of NAFTA. Thus, we have tested;

Ho: $\mu = 0$ against,

HA: $\mu \neq 0$.

Now in case of NAFTA export data to the partner countries the corresponding P-value is given as 0.000 to three decimal places which means $p < 0.0005 = .05\%$ (See Appendix-6) . It is therefore very highly significant. The test provides very strong evidence against the null hypothesis and thus there is strong evidence that the variable amount of trade did varied after NAFTA among the member countries. So, we can say that average amount of export did change significantly after the formation of NAFTA. Again, no outliers appear in the scattered plot although there are some positive and negative externalities. The correlation measures the strength of the liner association or relationship between the two variables. The output shows that the correlation between export destination of USA products before and after the NAFTA is 0.964 (Appx-6b). There is a strong positive association but the standard error is on a high side.

Last of all we estimated the regression between the two data set with trade before NAFTA (TBN) as the independent variable and trade after NAFTA (TAN) as the dependent variable to measure what proportion in the change in the independent variable (TAN) is accounted for the independent variable (TBN). Here, we see that the $r^2 = .966$ (Appx-5e) (See notes 1). So, we can say that trade before NAFTA can be accounted for 97% of the variation in the trade after NAFTA which appears to be a good fit. The t value is 16.810 and $p = 0.000$ (Appx-5e) so there is strong evidence that the variables are associated. Again, if we observe the graph 1 we can see that US export to NAFTA partners was increasing at a steady rate before the formation of NAFTA but it increased at an increasing rate after the formation of NAFTA. The amount of US export to these two countries more than doubled in just 12 years of NAFTA era. The striking feature of the data is that US export to Mexico increased more than the increase in US export to Canada. On the other hand, for the US import data from the NAFTA countries we have p value= 0.000 three decimal places which means $p < 0.0005 = .05\%$. Thus we can say that

there is a difference in the mean and US export to NAFTA partners did change after formation of NAFTA. Although the relationship is mostly linear but the scatter plot shows some outliers (one big) in this case which can reduce the value of t to insignificant. The output shows that the correlation between import destination of USA products before and after the NAFTA is 0.615 (Appx-7b). This relationship is not as strong we have seen in case of export data. The result also shows a high standard error. But the regression analysis shows $r^2 = 0.378$ (See Appx-7e) which means only 38% variation in the post NAFTA US trade with the NAFTA partner countries can be measured by the pre NAFTA US import. The t value is 2.702 and $p = 0.019 < 0.05$ (See Appx-7e). So the test provides evidence against the null hypothesis that the intercept coefficient is not zero. And from *Graph-5* we can see that US import from NAFTA countries increased three fold during the 13 years period from 1993 to 2006. And that same period US import from Mexico increased by staggering 400%. The paired sample t -test of the US export import data with the major trading partners also shows p value < 0.05 with a t value of 4.506 (See appx-4c). The scatter plot shows almost perfect positive linear relationship with no outliers.

In a very similar fashion we have also tried to measure the European Union trade data. The figure shows that there is very little change of trade over time in intra regional trade. The paired sample t test shows p value is 0.09 which is > 0.05 and the t value = -2.740 (Appx-3d). Thus we can say that there is not enough evidence to reject the null hypothesis that trade has changed a lot after and before the formation of NAFTA. May be a bigger sample is needed to make a proper prediction. Again if we look at *Graph-3* we can see that the trade destination of EU countries have increased for all the parties. Both rest of the world and intra EU countries have enjoyed sound growth rate over course of 20 years.

NAFTA immediately eliminated trade barriers on more than 20 percent of Mexican– U.S. trade in textiles and apparel. Over six years it eliminates barriers on another 60 percent. In case of US textiles import from various major textiles producing countries the paired sample t test shows that the p value is 0.016 and t value is -2.635 (Appx-8c). So $p = 0.016 < 0.05$ so there are some evidence that the population means are non zero. But the scatter plot shows some positive and negative anomalies which can contribute to make the t value insignificant. The correlation analysis shows the result that there is a positive correlation between the data of US textiles import from its major partner countries before and after the formation of NAFTA. The correlation result is 0.791. The regression analysis shows $r^2 = .518$ (See Appx-8e)⁶.

⁶ The adjusted R^2 measures the proportion of the variation in the left side dependent variable that is explained by the right side dependent variables, adjusting for the number of variables in the equation.

SPSS RESULT TABLE

No	Data	p value Z test	t value Z test	p value Paired test	t value Paired test	Reg	Cor
1	US auto Export to major countries Variables: 1. Average Export after NAFTA(Dep) 2. Average Export before NAFTA(Indep)			.300	-1.092		.980
2	US auto Import from major countries Variables: 1. Average import after NAFTA(Dep) 2. Average import before NAFTA(Indep)			.236	-1.297		.953
3	European Union Variables: 1. Average intra trade after EU(Dep) 2. Average Intra trade before EU(Indep)			.090	-2.470		.997
4	US export Import data with major partners Variables: 1. Average import after NAFTA(Dep) 2. Average import before NAFTA(Indep)			.001	4.506		

5	NAFTA export to partner countries Variables: 1. Average Export after NAFTA(Dep) 2. Average Export before NAFTA(Indep)	0.000	16.810	0.000	-11.320	.966	.983
6	US Export with NAFTA countries Variables: 1. Average Export after NAFTA(Dep) 2. Average Export before NAFTA(Indep)	0.000	19.790	0.000	-19.642	.961	.977
7	US import Variables: 1. Average import after NAFTA(Dep) 2. Average import before NAFTA(Indep)	0.019	2.702	0.000	-5.089	.378	.615
8	USA textiles import Variables: 1. Avg Textiles import after NAFTA(Dep) 2. Avg Textiles import before NAFTA(Ind)	0.000	4.515	0.016	-2.635	.518	.719

That means only 52% of the post NAFTA import of textile to US market can be described by the import before NAFTA. This does not show a very strong relationship as NAFTA was not the only factor contributing to the changes in the US textiles import market. The P value is 0.000 three decimal places which is $p=.000 < .005$ (See Appx-8e) so there is strong evidence against the null hypothesis that the so we can reject it and say that there has been changes in the amount of trade before and after the NAFTA. But we should not get carried. Several FTAs and the phasing out of MFA have also contributed in the total export in the US market by various parties. Again, if we see *Graph 6* we can see that after the formation of NAFTA some the countries like Hong Kong, Singapore, Taiwan and Japan lost their market in USA and Mexico gained huge ground on USA

taking their tally from \$ 6 billion in 1989 to \$63 billion in the year 2006. Canada also tripled their export to US market during the period. After the phasing out of Multi-Fibre Agreement (MFA) countries like Bangladesh neither gained nor lost their ground too much but India and Vietnam gained because of their higher productivity and efficiency. But the country that gained most in China whom we have not included in the graph. Although Mexico with the tariff reduction once replaced china as the major textile supplier in the US market but China has again become the number one textile supplier in the US market.

NAFTA reduced Mexican tariffs on automobiles from 20 to 10 percent in 1994 and is set to drop them to zero by 2004. Tariffs on most auto parts care to be eliminated by 1999. The agreement includes rules of origin specifying that to qualify for preferential tariff treatment; vehicles must have 62.5 percent North American content, which is an increase over the 50 percent provision in the U.S.–Canadian free trade agreement. Analysing the auto industry data we have found that there has been no evidence against the null hypothesis that there US import of passenger car and light trucks have changed significantly after the formation of NAFTA. As the p value in that case is $0.000 < 0.005$. But the p values for the Auto import data is $0.236 > .005$ (Appx-1 & 2). So, we can reject the null hypothesis and say that there have been some changes in the US import of vehicles after the formation of NAFTA. If we look at *Graph-1* we can see that Canada remains the major market with Mexico becoming the new emerging one for US auto industry. This happened because of the reduction in tariff by Mexico on US auto import. On the other hand, *Garph-2* shows us that NAFTA has not had a big impact on the Auto import by USA. All the major exporting countries including Mexico and Canada increased their position during the period.

4.0 Discussion:

4.1 Impact of NAFTA

The main purpose of NAFTA was to eliminate barriers to trade and investment between the partners United States, Mexico and Canada. The most common barriers to trade are tariffs, quotas and subsidies. After the development of NAFTA approximately half of the tariffs on trade between Mexico and the United States were eliminated, and the remaining tariffs and restrictions on service and investment will be phased out over a 14-year period. In 1993, United States goods faced an average tariff barrier of about 10 percent at the Mexican border, five times the 2.07 percent rate that the U.S. imposed on Mexican goods. With NAFTA, Mexico's average tariff has fallen to under 2 percent⁷. Under

⁷ Prior to NAFTA, the average Mexican tariff on US exports was about 10 per cent, while the average US tariff on imports from Mexico was less than 10 per cent. See Hufbauer (1992).

NAFTA, Mexico has reduced its trade barriers on U.S. exports significantly and eliminated a variety of protectionist rules and regulations of foreign trade, while the United States which already had much lower tariffs made only slight reductions. Before NAFTA was signed, Mexican applied tariffs on U.S. goods averaged 10 percent. U.S. tariffs on Mexican imports averaged 2.07 percent, and over half of Mexican imports entered the United States duty-free. Since NAFTA was signed, Mexico has reduced its average tariffs on U.S. imports by 7.1 %, compared with a diminution of 1.4 % in the United States. The United States would have made some of these tariff reductions under the Uruguay Round even in the non-existence of NAFTA (Krugar, 2000).

Other objectives of NAFTA were to endorse fair competition, protect intellectual property rights and boost investment. NAFTA provides full protection of intellectual property rights like patents, copyrights, and trademarks and also contains provisions covering trade rules and dispute settlement. In addition, to administer them the agreement established trilateral commissions. To response to the environmental awareness, NAFTA became the first international trade agreement in United States history to include environmental policies. NAFTA was designed to increase foreign investment opportunities. The treaty's rules concerning the foreign direct investment (FDI) have improved rights of foreign investors investing in region. It provided option of retaining profits and returns from their initial investments to the investors. As a result, U.S. investment in the Mexican food processing industry has more than doubled since 1994. By strengthening the rules and procedures governing trade and investment on the region, the NAFTA has allowed trade and investment flows in North America to achieve huge success. According to figures of the International Monetary Fund (IMF), total trade among the three NAFTA countries has more than doubled, passing from US\$306 billion in 1993 to almost US\$621 billion in 2002. That's US\$1.2 million every minute. In this same period:

- Canada's exports to its NAFTA partners increased by 87 percent in value. Exports to the United States grew from US\$113.6 billion to US\$213.9 billion, while exports to Mexico reached US\$1.6 billion.
- US exports to Canada and Mexico grew from US\$147.7 billion (US\$51.1 billion to Mexico and US\$96.5 billion to Canada) to US\$260.2 billion (US\$107.2 and US\$152.9 billion, respectively).
- Mexican exports to the US grew by an outstanding 234 percent, reaching US\$136.1 billion. Exports to Canada also grew substantially from US\$2.9 to US\$8.8 billion, an increase of almost 203 percent. NAFTA has allowed both Canada and Mexico to increase their exports to the United States, but not at the expense of each other's share in the U.S.

market. That's because substantial new trade has been generated throughout North America. Canada has consistently accounted for approximately 18% of U.S. imports; on the other hand Mexico increased its share of the U.S. market from 6.8 % in 1993 to 11.6 % in 2002.

The NAFTA has also boosted competitiveness at the global level. The Agreement has made North America one of the most active trading regions in the world. NAFTA countries now account for almost 19 percent of global exports and 25 percent of imports. NAFTA fosters an environment of confidence and stability required to make long-term investments and partnering commitments. North America has attracted foreign direct investment (FDI) at record levels with a strong, certain and transparent framework for investment. In the year 2000, FDI by other NAFTA partners in the three countries reached US\$299.2 billion, more than double the figure registered in 1993. NAFTA has also inspired increased investment from countries outside of NAFTA. North America now accounts for 23.9 percent of global inward FDI and 25 percent of global outward FDI. NAFTA has caused both positive and negative impacts to the United States. However, the positive impact seems to outweigh the negative impact. Although NAFTA is responsible for most of the economic changes, there are also several other aspects to consider. These include adverse exchange rate movements (the peso crisis), weather conditions, evolving consumer preferences, macroeconomic performance, population growth and technological changes. Looking at Graph 4 & 5 we can see that US trade with its NAFTA partner's countries showed an increasing tendency before the formation of NAFTA but the trade have increased at an increasing rate after the agreement being signed. Both export and import trade have flourished under the rules and regulation of NAFTA. US export was boosted by reduction of tariff from the part of Mexico (See notes 9). According to the NAFTA analysts on average NAFTA is responsible for US export growth 16.3% in the Mexican market and 8.6% Canadian Market. And US import has grown with Mexico 16.2% and with Canada 3.9% due to the policy measures taken after the formation of NAFTA 3. On the other hand trade between Canada and Mexico had very little changes between them in relation to the total amount of trade among the NAFTA countries. According to David M. Gould (1998), trade share of trade is very small reliantly between Canada and Mexico so it is subject to much more unexplained volatility than is trade with the United States. In these equations, the NAFTA trade effects are estimated to be negative, which raises the possibility that NAFTA may have diverted Canadian–Mexican trade toward the United States or other countries.

4.2 NAFTA and Textiles Industry:

NAFTA created a pattern of integrated manufacturing and trade in the textile and apparel sectors in North America. The textile and apparel industries in North America have been

one of the sectors most benefited by the trade liberalization NAFTA. Trade between Mexico and the U.S. in these sectors has experienced a remarkable 255% growth since 1993. More importantly, this growth has been in both directions: U.S. exports to Mexico have increased from \$2.3 to \$4.7 billion in that period, while Mexico's exports to the U.S. have increased from \$1.3 billion in 1993 to \$7.9 billion in 2003. Within three years of NAFTA, Mexico had become the second-largest supplier of textile and apparel goods in US, with an increase in its share of the US import market from 7% in the year 1995 to 11 % in 2002. Canada, on the other hand, maintained a level share of 4% throughout this period. U.S. exports of textiles and apparel to Mexico more than doubled from 1994 to 1998, from \$2 billion to \$4.4 billion, further increasing to \$6.1 billion in 2000. In 2003, U.S. exports to Mexico were \$4.7 billion. U.S. exports to Canada grew from \$2.2 billion in 1994 to \$3.4 billion in 1998, levelled off through 2000, and fallen slightly to \$3 billion in 2003.

For Canada, trade has also increased: whereas in 1994 it exported to the U.S. textile and apparel goods worth \$2 billion, that figure increased to \$3.6 billion in 2003. Although starting from a low base exports from Canada to Mexico, experienced slight growth of \$28 million in 1994 to \$30 million in 2003. On the import figures, Canada has virtually the same amount of imports from the U.S. in 1994 than in 2003: \$2.4 billion and \$2.6 billion, respectively. Canadian imports from Mexico registered a higher increase, from \$123 million in 1994 to \$328 million in 2003. Textile and apparel exports also have increased their share in intra-NAFTA total exports: in 1993, textile and apparel represented only 4 percent of Mexico's exports to the U.S., but it reached 6 % in 2003; Canada has maintained this figure at around 1.5 % of its total exports to the U.S. for the 1994 – 2003 periods⁸.

The changes in these regulations and the strong rules of origin created potential for significant rationalization of the production process and there is strong evidence of increased integration in the North American auto industry since NAFTA. United States was already a net importer from Mexico in vehicles and parts, prior to NAFTA. Since NAFTA, auto imports from Mexico more than doubled, increasing from \$11.1 billion in 1993 to \$27.7 billion in 1998. One reason for increased Mexican exports is that U.S. producers are using their Mexican plants to supplement U.S. production to meet the high U.S. demand in a strong economy. On the other hand, U.S. auto exports to Mexico rose 14-fold, albeit from a low base, between 1993 and 1998, increasing to \$2.4 billion. U.S. exports of auto parts also rose dramatically, by 30 percent (U.S. Department of

⁸ Source: United States International Trade Commission, Interactive Tariff and Trade Data Web [<http://dataweb.usitc.gov>] and U.S. Department of Commerce, An Introduction to U.S. Trade Remedies, <http://ia.ita.doc.gov/intro/index.html> and USITC.

Commerce, 1999). In 1993, for example, intra-industry trade in autos represented 52 percent of all North American trade in autos; by 1999, it was 79 percent. As the U.S. Trade Representative (1997) notes, “U.S. imports of vehicles assembled in Mexico include a high percentage of auto parts made in the United States. There appear to be efficiency gains from finer specialization within the industry. NAFTA widened the extent of the market and permitted increasing returns to finer specialization. Most fears about the ill effects of NAFTA on the U.S. auto industry, whether in term of employment, wages, or investment, have been proven wrong. The U.S. auto industry did experience rationalization of production and hence job displacements. But overall, NAFTA appears to have helped the U.S. auto sector (U.S. Trade Representative, 1997)”. To judge NAFTA’s effects on the economies of Canada, Mexico, and the United States, it is also important to consider North American trade flows in the context of trade with the rest of the world. We have to ask the following questions, did NAFTA create new trade opportunities within North America, or did it simply divert trade from countries outside NAFTA? If the increased trade caused by NAFTA was simply a diverting of trade from other, more efficient trading partners, then NAFTA’s benefit would minimize. As the figure shows, trade within North America has increased relative to trade with the rest of the world, but the increase is slight. The share of U.S. trade with Canada and Mexico increased from 27.8 to 29.4 percent between 1993 and 1996, with most of that increase attributed to greater U.S. trade with Mexico. Canadian trade with the rest of North America also increased, from a share of 77.3 to 80.4 percent. Mexico’s trade share with North America changed very little, from 71 to 71.6 percent⁹.

The share of total trade between the NAFTA countries increased a lot but to determine the extent of trade diversion in North America, it is important to consider whether North American trade with the rest of the world has also increased or not. The share of total trade between North American countries increased because trade within North America grew faster than did trade with countries outside of North America. Consequently, although trade diversion is a possibility, it is unlikely to be a large problem. Moreover, because trade under NAFTA was liberalized between countries with very different comparative advantages and as they were natural trading partners with already existent growing trade, it is unlikely that it caused a shift from optimal trading patterns.

4.3 Overall trade creation and diversion effects:

To maximize trade creation, FTAs and RTAs should unleash real competition in previously protected markets Daniel T. Griswold (2003). From an economic perspective,

⁹ U.S. Department of Commerce, An Introduction to U.S. Trade Remedies, <http://ia.ita.doc.gov/intro/index.html> and USITC.

the essential purpose and principal payoff of international trade is to enhance competition within the domestic economy and broader markets abroad for domestic producers. Increased import means higher competition, which results in lower prices for consuming households and businesses. It also provides bigger product choices, higher quality and increased innovation. By stimulating more efficient production, import competition raises the productivity of workers, real wages, living standards, and the long-run growth of the economy. The importing country can suffer a welfare loss, if an FTA or RTA does not result in lower prices for the importing country but merely reshuffles imports from the rest of the world to the partners. In that case the government loses tariff revenue, but its consumers do not reap any benefit from lower prices. In effect, the importing country's treasury subsidizes less efficient production of the partner country. If global prices outside the trade agreement fall because of the diverted demand, then the rest of the world loses from lost producer surplus.

To minimize trade diversion, the effective FTAs and RTAs allow large and competitive foreign producers to displace domestic producers in a large and protected domestic market, which delivers lower prices and higher real incomes to workers and families. The worst allows, less competitive foreign producers to replace more competitive foreign producers in a large and protected domestic market, costing the treasury tariff revenue without delivering lower domestic prices or more efficient domestic production. While trade creation and diversion effects are theoretically elegant, in practice, it is extremely difficult to accurately measure their magnitude. While there is no doubt that the elimination of tariffs for member countries leads to trade creation, the finding of increased trade with non-member countries also warrants some explanations. In fact, there are quite a few empirical studies, focusing on the cases of individual RTAs, suggesting that RTAs expand intra-bloc trade, but contract trade with non-member countries. In theory, trade diversion can be positive, if imports from RTA members substitute imports from non-members. In addition to this static effect, there are dynamic effects too. RTAs and FTAs can provide non-members with increased opportunities to exploit the larger market, if increased trade between member countries expands markets, creates more investment, and results in income growth, thereby reducing the problem of diverting trade. This growth effect may lead RTAs to increase trade with non-member countries. It is easy to see that when trade is multilateral, that is, countries import from and export to union members as well as outside countries, trade diversion is inevitable. Moreover, if potential union members are small in relation to the outside world as is likely, little trade creation will be forthcoming.

4.5 Trade agreements and tariff-

There can be several issues to consider about the tariff in case of any special trade agreements. Tariff is an important consideration here as it has been often the major

ground of trade creation and diversion among the FTA and RTA partners and the non-members (see notes 8). Suppose that in the pre-PTA equilibrium, relative to its potential partner, a union member faces higher tariffs on intermediate inputs lower tariffs on final goods and in some sectors. The PTA then places the country's final goods producers at a disadvantage position. If the final goods producers are politically powerful, they will pursue the policy makers to reduce the external tariff on the input to the partner country's level. A similar process will operate in the partner country in sectors with higher tariffs on intermediate inputs and lower tariff on final goods. Thus, the PTA will lead to further liberalization. Again, heavy dependence on the tariff revenue among the lesser developed countries may force them to take some extra measures to protect them from the loss of earnings. If a country is dependent on tariffs for revenue purposes as is true of the countries in African, South Asia and even Central and Eastern Europe, an FTA which requires a removal of tariff on the partner country may force it to raise the external tariff.

5.0 Conclusion:

It is difficult to measure regionalism. The most popular approaches, is to count the number of RTAs notified to the WTO or measuring the proportion of world trade between RTA signatories, are clearly not enough. The desirability of RTAs, is also difficult to assess. Nevertheless, the threat to the multilateral trading system does not appear to be as large as is often reported, because the long-term dynamics of RTAs lead either to state formation, or to ineffectiveness, unfortunately which is the fate of the vast majority of RTAs. The debate about whether RTAs are building blocks or stumbling blocks for global freer trade is no longer a big concern because so far, in practice RTAs have made so little difference either way. As a tool for expanding freedom and prosperity, Regional and Preferential Trade Agreements are useful. But sometimes they create complication in the international trading system by deviating from the most-favoured-nation (MFN) principle of non-discrimination and can blunt the benefits of international trade by diverting it from the most efficient producers to those that are less efficient but favoured. On the other hand, RTAs and FTAs can produce compensating benefits by opening domestic markets to fresh competition, integrating regional economies, encouraging economic liberalization abroad, cementing important foreign policy and security ties, opening markets to foreign exports, and providing sound institutional competition for multilateral negotiations. To maximize the economic benefits of free trade agreements, the government should focus its efforts on negotiations with countries that provide new opportunities for the exporters and whose producers would be most likely to enhance competition in the domestic market. One of the main theoretical arguments suggesting that regional trade agreements are beneficial has come to be known as the natural trading partner hypothesis. This hypothesis simply suggests that countries tend to form preferential trade agreements with partners that are nearby

geographically and with whom they are major trading partners. These trade agreements between countries that are “natural trading partners” are presumed to be more beneficial than agreements such as FTA between countries far apart and that have relatively smaller levels of trade. As we know in case of NAFTA USA shares geographical boarder with both Mexico and Canada and they were natural trading partners before the formation of NAFTA (their trade shows growing tendency in the years before the agreement) so it should bring some extra benefit to the participating countries.

After accounting for the effects of economic variables important to bilateral trade flows—such as income, exchange rates, and prices—NAFTA is found to have a significant positive effect on trade flows between the United States and Mexico. NAFTA is not found to have a significant impact on trade between the United States and Canada or Canada and Mexico. These findings are not surprising, given that the United States negotiated a free trade agreement with Canada five years before the implementation of NAFTA and that most of the trade liberalized under NAFTA is between the United States and Mexico. In our data analysis we have found that the trade between the three parties increased at an increasing rate after the formation of NAFTA. But it is very difficult to judge from the above data whether the high growth in trade occurred at the expense of non-member countries. When US trade with its NAFTA partners were increasing the booming economy also caused the trade to amplify with other major partners. Countries like Japan and Germany still dominate the US auto industry and China, India and Vietnam are very rapidly becoming the top major textiles and apparel supplier in the US and Canadian market. There has been some evidence of trade creation but trade diversion evidence is not clear. There is strong evidence of increased integration in the auto industry of North American since NAFTA, which has made U.S. parts and vehicle manufacturers more efficient. But prior to NAFTA, the United States was already a net importer from Mexico in vehicles and parts. As part of NAFTA, Mexico agreed to phase out the auto decrees, improving U.S. competitiveness in the Mexican market. NAFTA also includes rules of origin which specify that, to qualify for preferential tariff treatment, a vehicle must have 62.5 percent North American content. The changes in these regulations and the strong rules of origin created potential for significant rationalization of the production process among the three NAFTA countries. And thus both USA and Mexico increased their shares in each other’s respective markets. On the other hand, in case of textile and apparel industry NAFTA has had a significant impact. The reduction of tariff and the provision of rules of origin have given the Mexican textiles and apparel industry a significant advantage to capture the highly lucrative US market. Under NAFTA, most tariffs on textiles and apparel were to be phased out over five years, with a small number of tariffs to be eliminated over ten years. NAFTA also included strong rules of origin; specifically, in case of textile and apparel goods, it had to be produced from yarn made in a NAFTA country to receive NAFTA preferences. U.S. import quotas

were lifted straight away for goods meeting this “yarn forward” rule of origin, and gradually for other Mexican exports. According to the U.S. Trade Representative (2005), two-thirds of the value of U.S. textiles and apparel imported from Mexico in 2004 was comprised of U.S. content. On the contrary, Asian textile and apparel products have almost no U.S. content. Analysis of bilateral trade data shows that U.S. imports of textiles and apparel from Mexico have increased, while those from Asia (Hong Kong, Taiwan, South Korea) have declined, since NAFTA 1. But U.S. trade with Mexico represented only a small part of U.S. textiles and apparel production. Some developing countries have lost their share in the US market but NAFTA is not the only perpetrator in this case. External factors like phasing out of Multi Fibre Agreement (MFA), technological development and increased competition from some of the efficient producers like China and India have been instrumental in causing the major changes. Regional agreements may nonetheless provide helpful opportunities to promote trade liberalization, especially when political and other factors impede unilateral or multilateral approaches but trade liberalization on a multilateral basis is preferable to regional/bilateral schemes in avoiding trade diversion and the complications accompanying a large amount of overlapping preferential arrangements. The main target is to ensure that these arrangements have favourable effects to strive toward maintaining relatively low external barriers for international trade in order to minimize trade diversion. Typically, regional agreements are likely to offer the greatest benefits, and to entail less diversion, if they have the following characteristics:

- They are diverse in regional coverage. Diversity is associated with greater complementarities of trade patterns, and greater trade with advanced countries may bring advantages to developing countries through increased investment flows and technology transfers. This suggests that the benefits of North-South arrangements may exceed those of South-South arrangements (World Bank, 2000).
- They are comprehensive in their coverage of products. RTAs and PTAs are likely to bear greater fruit if they are extended beyond manufactured trade, and include agricultural products and services. Even more benefits can potentially derive from comprehensive approaches that liberalize foreign direct investment, strengthen competition policy and improve regulatory frameworks. However, the emphasis should be on assisting countries toward these objectives, rather than using the threat of trade sanctions to spur action.
- RTAs and PTAs may play an important role in helping lock in broader reform agendas among participating countries. For example, RTAs and PTAs appear to have been helpful in encouraging reforms in the area of investment protection and customs administration. At the same time, care is needed to ensure that reforms are consistent and appropriate for countries' stage of development.

At the end, we can say it is for sure that Regional and Preferential Trade Agreements creates greater political and economic relationship among the member countries and by reducing tariff and policies like rules of origin, easy movement of factor resources, and internal trade between the two increases at a faster rate than without such agreement. But the non-member countries can retaliate by creating a RTA or PTA of their own. Again, because of the agreements the non-member countries get a bigger market to supply their products. For example, as European Union get *bigger in size* countries which are most favoured nations to supply textiles and apparel in the EU. Again, RTAs and FTAs can have major impact on the level of investment in a region. To enter in the US market cheaply billions of dollars of investment have gone into Mexico which helped to boost the country's economy a lot.

APPENDICES

TABLE 1

USA Passenger Vehicles and Light Trucks Export to Major Countries

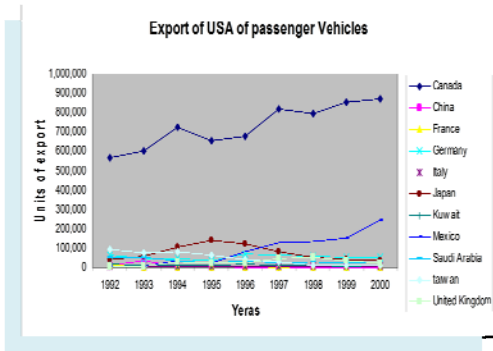
	1992	1993	1994	1995	1996	1997	1998	1999	2000	sum 93-00	AVG
ALL	1,309,244	1,316,093	1,504,215	1,509,145	1,581,266	1,735,579	1,610,943	1,526,924	1,616,164	12,400,329	1550041.1
PVLT ALL	1,034,207	1,048,861	1,271,838	1,242,453	1,294,843	1,443,359	1,331,336	1,317,125	1402091	10,351,906	1293988.3
Canada	569,752	601,857	723,337	655,878	677,255	820,059	793,607	853,293	873509	5,998,795	749849.38
China	9,035	33,208	7,408	3,350	539	668	651	1,693	357	47,874	5984.25
France	10,613	3,106	6,559	2,974	4,331	2,678	4,798	4,165	4,464	33,075	4134.375
Germany	65,534	47,456	45,747	33,917	70,692	63,527	60,632	51,664	53515	427,150	53393.75
Italy	6,535	3,813	3,529	7,074	4,519	3,648	5,734	3,677	4,093	36,087	4510.875
Japan	42,795	58,758	105,155	139,016	123,538	79,621	52,622	41,274	36,626	636,610	79576.25
Kuwait	18,285	10,591	12,826	12,669	17,321	10,384	11,289	8,691	11,393	95,164	11895.5
Mexico	5,534	4,658	37,810	22,571	82,079	130,588	132,486	154,091	243,381	807,664	100958
Saudi Arabia	50,566	52,434	32,233	21,879	35,986	24,237	28,942	21,194	26891	243,796	30474.5
Taiwan	93,918	77,810	79,964	67,061	39,664	30,903	12,527	10,418	13,316	331,663	41457.875

TABLE 2

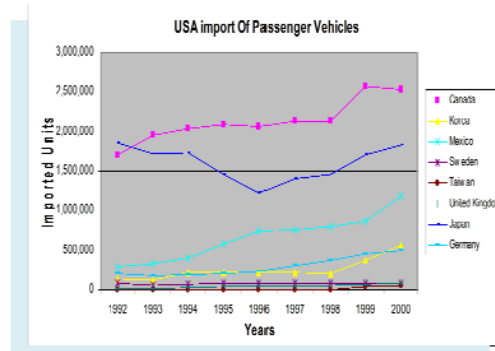
USA Passenger Vehicles and Light Trucks Imports from Major Countries

	1992	1993	1994	1995	1996	1997	1998	1999	2000	Sum of 93-00	AVG
World Total All Products	4,411,339	4,551,490	4,828,671	4,793,200	4,770,830	5,124,004	5,347,765	6,500,387	7,145,146	43,061,493	5382686.6
Canada	1,703,645	1,954,300	2,032,586	2,085,145	2,065,448	2,129,441	2,132,173	2,574,521	2,535,844	17,509,458	2188682.3
Korea	133,244	126,576	217,962	216,618	225,613	222,535	210,300	374,523	568,227	2,162,354	270294.25
Mexico	290,570	331,273	399,842	572,095	749,163	758,714	799,849	869,410	1,182,322	5,662,668	707833.5
Sweden	76,832	58,742	63,867	82,699	86,595	79,725	84,405	82,809	85,715	624,557	78069.625
Taiwan	4,101	4,585	4,001	3,674	4,938	3,648	5,664	34,712	60,552	121,774	15221.75
United Kingdom	11,008	20,507	29,735	42,425	43,618	43,733	49,079	67,780	79,777	376,654	47081.75
Japan	1,855,546	1,720,575	1,735,436	1,454,986	1,227,322	1,407,349	1,460,130	1,707,884	1,834,971	12,548,653	1568581.6
Germany	206,135	184,391	189,321	207,436	234,832	300,104	373,804	456,803	489,597	2,436,288	304536

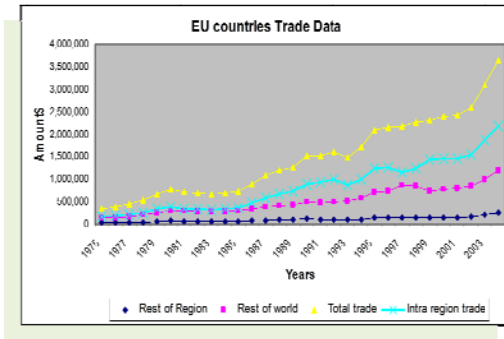
GRAPH 1



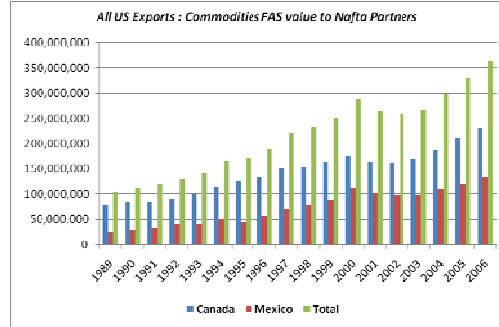
GRAPH 2



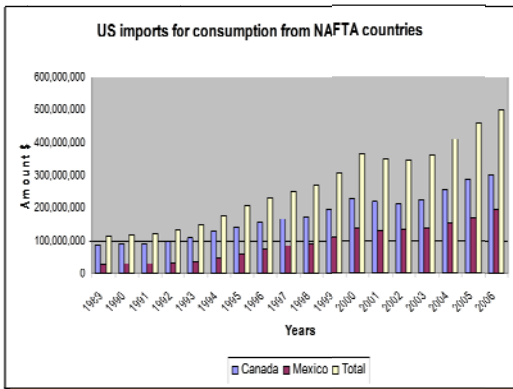
GRAPH 3



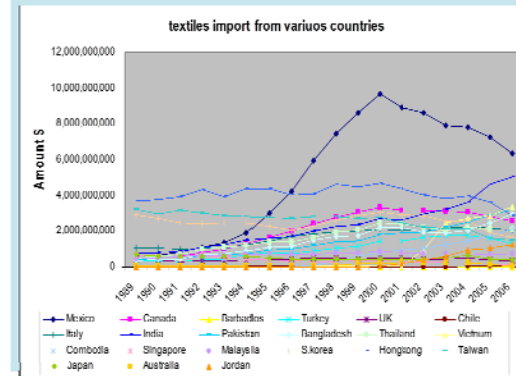
GRAPH 4



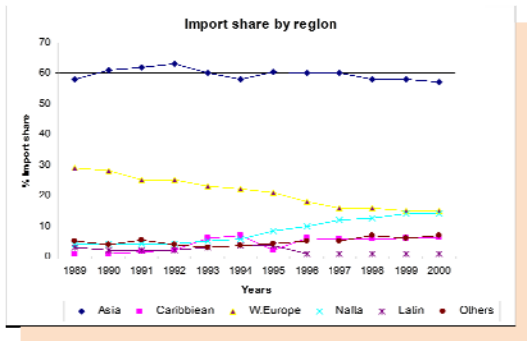
GRAPH 5



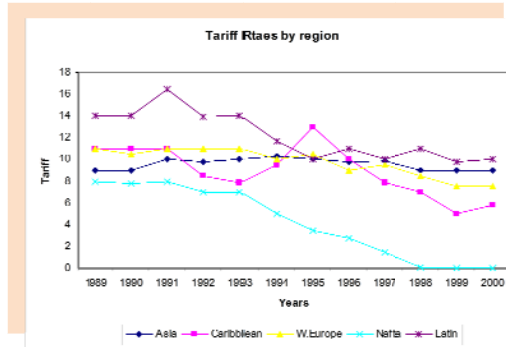
GRAPH 6



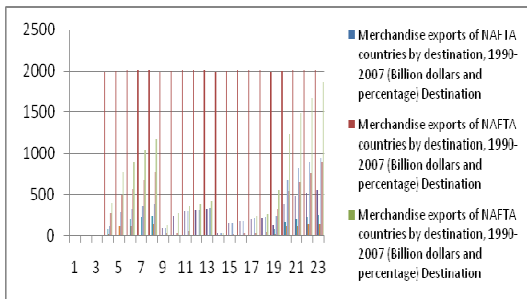
GRAPH 7



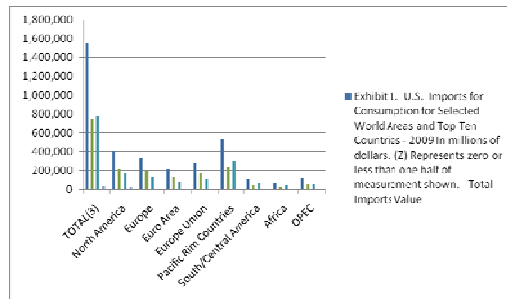
GRAPH 8



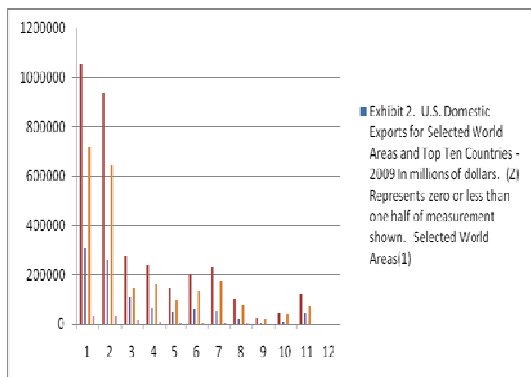
GRAPH 9



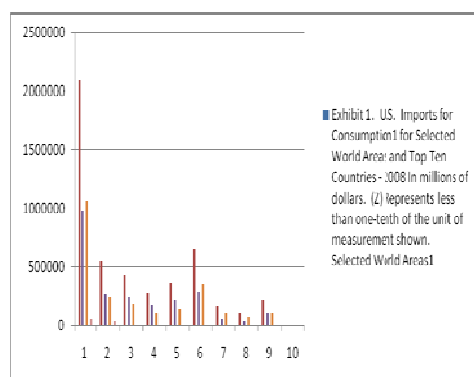
GRAPH 10



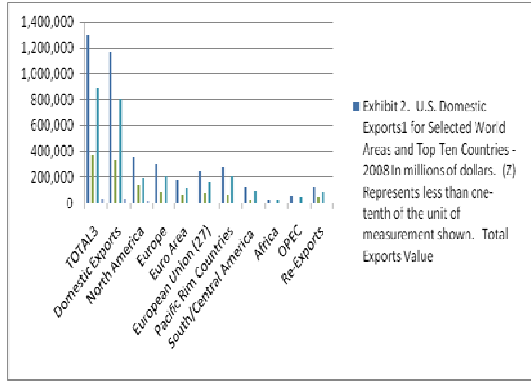
GRAPH 11



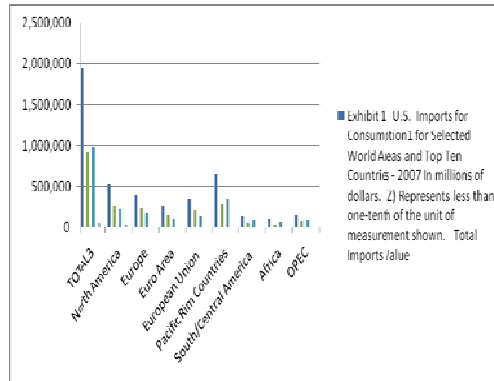
GRAPH 12



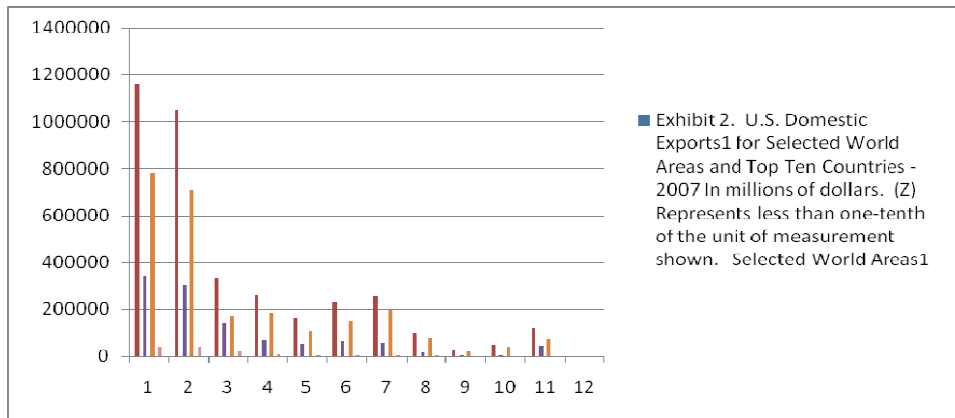
GRAPH 13



GRAPH 14



GRAPH 15



Appendix 1: (SPSS Outputs)

Data analysis of US auto Export

a. Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	1992	79811.45	11	165131.183	49788.925
	Average Export after nafta	101127.3409	11	217469.0641	65569.38993

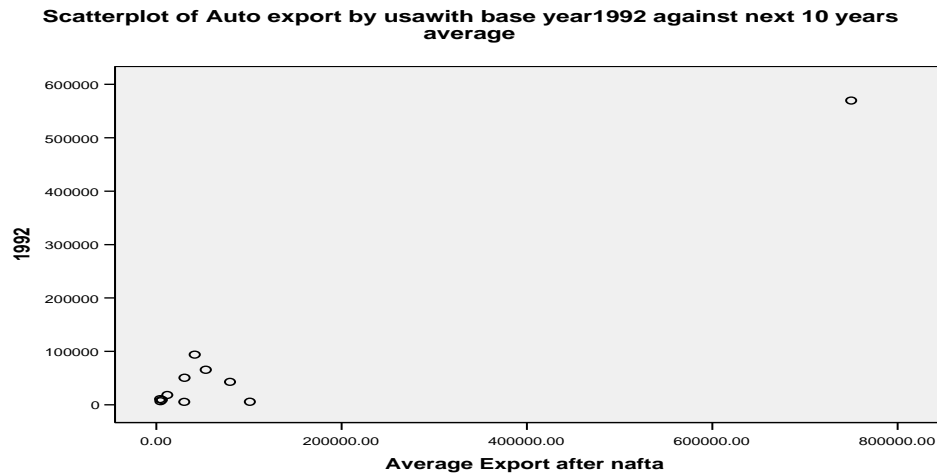
b. Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	1992 & Average Export after nafta	11	0.980	0.000

c. Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 1992 - Average Export after nafta	-21316	64738.1927	19519.2995	-64807.6	22175.82327	-1.092	10	0.3

d. Graph



e. One Sample T-test of US Import of Passenger Vehicles: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Canada	9	1703645	2574521	2134789.222	271667.1611
Korea	9	126576	568227	255066.4444	137147.1664
Mexico	9	290570	1182322	661470.8889	290227.287
Sweden	9	58742	86595	77932.1111	9965.79763
Taiwan	9	3648	60552	13986.1111	20149.70614
United_Kingdom	9	11008	79777	43073.5556	21535.24684
Japan	9	1227322	1855546	1600466.556	218411.694
Germany	9	184391	489597	293602.5556	118771.725
Valid N (listwise)	9				

f. One Sample Statistic

	N	Mean	Std. Deviation	Std. Error Mean
Canada	9	2134789.222	271667.1611	90555.72038
Korea	9	255066.4444	137147.1664	45715.72213
Mexico	9	661470.8889	290227.287	96742.42898
Sweden	9	77932.1111	9965.79763	3321.93254
Taiwan	9	13986.1111	20149.70614	6716.56871
United_Kingdom	9	43073.5556	21535.24684	7178.41561
Japan	9	1600466.556	218411.694	72803.898
Germany	9	293602.5556	118771.725	39590.575

g. One-Sample Test

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Canada	23.57	8	0	2134789.222	1925967.357	2343611.09
Korea	5.579	8	0.001	255066.4444	149645.8002	360487.089
Mexico	6.837	8	0	661470.8889	438382.4476	884559.33
Sweden	23.46	8	0	77932.11111	70271.7209	85592.5013
Taiwan	2.082	8	0.071	13986.11111	-1502.3241	29474.5463
United_Kingdom	6	8	0	43073.55556	26520.0995	59627.0116
Japan	21.98	8	0	1600466.556	1432580.466	1768352.65
Germany	7.416	8	0	293602.5556	202306.5259	384898.585

Appendix 2: (SPSS Outputs)

a. US passenger Vehicles Import Data Analysis: T-Test

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	1992	535135.1	8	775077.702	274031.349
	Average Import from major countries after nafta	647537.6	8	808147.043	285723.127

b. Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	1992 & Average Import from major countries after nafta	8	0.953	0.000

c. Paired Samples Test

		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	1992 - Average Import from major countries after nafta	-112402.5	245105	86657.788	-317315.575	92510.638	-1.297	7	0.236

d. One Sample T-test of US Import of Passenger Vehicles:

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Canada	9	569752	873509	729838.5556	110890.0287
China	9	357	33208	6323.2222	10575.97184
France	9	2678	10613	4854.2222	2457.16991
Germany	9	33917	70692	54742.6667	11518.43166
Italy	9	3529	7074	4735.7778	1358.91453
Japan	9	36626	139016	75489.4444	38396.37644
Kuwait	9	8691	18285	12605.4444	3202.83515
Mexico	9	4658	243381	90355.3333	81267.81922
Saudi Arabia	9	21194	52434	32706.8889	11665.18142
Taiwan	9	10418	93918	47286.7778	32812.07149
United Kingdom	9	5359	52215	27409.6667	15946.138
Valid N (list wise)	9				

e. One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Canada	9	729838.56	110890.03	36963.3429
China	9	6323.2222	10575.972	3525.32395
France	9	4854.2222	2457.1699	819.05664
Germany	9	54742.667	11518.432	3839.47722
Italy	9	4735.7778	1358.9145	452.97151
Japan	9	75489.444	38396.376	12798.79215
Kuwait	9	12605.444	3202.8352	1067.61172
Mexico	9	90355.333	81267.819	27089.27307
Saudi Arabia	9	32706.889	11665.181	3888.39381
Taiwan	9	47286.778	32812.071	10937.35716
United Kingdom	9	27409.667	15946.138	5315.37933

Appendix 3: (SPSS Outputs)

European Union Data analysis

a. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Avg Trade before EU	4	80128	915442	457720.76	350890.027
Avg Trade after EU	4	164687	2449501	1224750.5	970456.559
Difference between trade amount	4	84559	1534059	767029.74	620994.276
Valid N (listwise)	4				

b. Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Avg Trade before EU	457720.76	4	350890.03	175445.014
	Avg Trade after EU	1224750.50	4	970456.56	485228.28

c. Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Avg Trade before EU & Avg Trade after EU	4	0.997	0.003

d. Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Avg Trade before EU - Avg Trade after EU	-767029.74	620994.28	310497.14	-1755170.21	221110.73	-2.5	3	0.090

Appendix 4: (SPSS Outputs)

US export Import data Analysis with major trade partners: *T-Test*

a. Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Before the creation of Nafta	29849.97	12	22946.289	6624.023
	After the Creation of Nafta	2985	12	2294.629	662.402

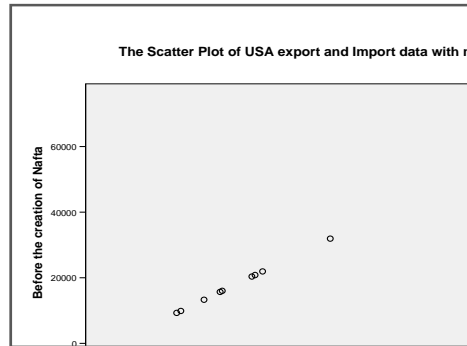
b. Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Before the creation of Nafta & After the Creation of Nafta	12	1	0

c. Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the				
					Lower	Upper			
Pair 1	Before the creation of Nafta - After the Creation of Nafta	26865	20651.66	5961.621	13743.53	39986.408	4.5	11	0.001

d. Graph



Appendix 5: (SPSS Outputs)

NAFTA export Data analysis

a. Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Trade Between1989-1994	64222792.00	12	30876286	8913216.109
	Trade between 1995-2004	112954380.33	12	44121232	12736702.64

b. Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Trade Between1989-1994 & Trade between 1995-2004	12	0.983	0.000

c. Paired Samples Test

		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
Pair 1	Trade Between 1989-1994 - Trade between 1995-2004	-48731588.33	14912943.6	4304996	-58206820.63	-39256356.04	-11	11	0.000

d. Correlations

		Trade Between 1989-1994	Trade between 1995-2004
Trade Between 1989-1994	Pearson Correlation	1	.983(**)
	Sig. (2-tailed)		0
	N	12	12
Trade between 1995-2004	Pearson Correlation	.983(**)	1
	Sig. (2-tailed)	0	
	N	12	24

** Correlation is significant at the 0.01 level (2-tailed).

Regression

e. Variables Entered/Removed (b)

Model	Variables Entered	Variables Removed	Method
1	Trade between 1995-2004(a)	.	Enter

a All requested variables entered. b Dependent Variable: Trade Between 1989-1994

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.983(a)	0.966	0.962	5986915

a Predictors: (Constant), Trade between 1995-2004

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10128364103198100.00	1	10128364103198100.00	282.6	.000(a)
	Residual	358431522124109.00	10	35843152212410.90		
	Total	10486795625322200.00	11			

a Predictors: (Constant), Trade between 1995-2004

b Dependent Variable: Trade Between 1989-1994

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-13460702.71	4933877.79		-2.728	0.021
	Trade between 1995-2004	0.688	0.041	0.983	16.81	0.000

a Dependent Variable: Trade Between 1989-1994

Appendix 6: (SPSS Outputs)

US Export data analysis With the Nafta partner countries: Correlations

a. Correlations

		Nafta Partner country	Nafta Partner country
Nafta Partner country	Pearson Correlation	1	.977(**)
	Sig. (2-tailed)		0
	N	18	18
Nafta Partner country	Pearson Correlation	.977(**)	1
	Sig. (2-tailed)	0	
	N	18	18

** Correlation is significant at the 0.01 level (2-tailed).

b. Variables Entered/Removed(b)

Model	Variables Entered	Variables Removed	Method
1	Years(a)		Enter

a All requested variables entered.

b Dependent Variable: Total Export to Nafta partners

Regression

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.980(a)	0.961	0.958	16191747.67

a Predictors: (Constant), Years

ANOVA(b)

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1.02674E+17	1	102673792941220000.00	391.6	.000(a)
	Residual	4.19476E+15	16	262172692488232.00		
	Total	1.06869E+17	17			

a Predictors: (Constant), Years

b Dependent Variable: Total Export to Nafta partners

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-28861067728	1469383264.981		-19.64	0.000
	Years	14557369.72	735608.665	0.98	19.79	0.000

a Dependent Variable: Total Export to Nafta partners

Time Series Modeller

c. Model Description

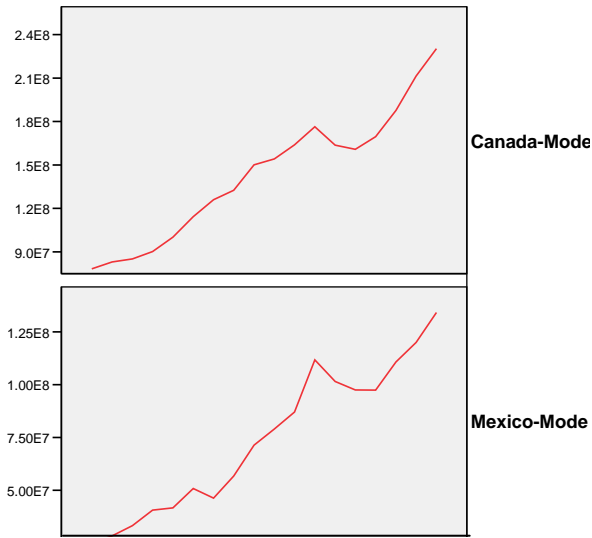
			Model Type
Model ID	Nafta Partner country	Model_1	ARIMA(0,1,0)
	Nafta Partner country	Model_2	ARIMA(0,1,0)

Model Statistics

Model	Number of Predictors	Model Fit statistics	Ljung-Box Q(18)			Number of Outliers
		Stationary R-squared	Statistics	DF	Sig.	
Nafta Partner country-Model_1	0	1.89E-16		0		0
Nafta Partner country-Model_2	0	-5.20E-17		0		0

Model Fit

Fit Statistic	Mean	SE	Minimum	Maximum	Percentile						
					5	10	25	50	75	90	95
Stationary R-squared	6.86E-17	1.71E-16	-5.20E-17	1.89E-16	-5.20E-17	-5.20E-17	-5.20E-17	6.86E-17	1.89E-16	1.89E-16	1.89E-16
R-squared	0.948	0.015	0.937	0.959	0.937	0.937	0.937	0.948	0.959	0.959	0.959
RMSE	8612719.55	287414.71	8409486.659	8815952.441	8409486.659	8409486.659	8409486.659	8612719.55	8815952.441	8815952.441	8815952.441
MAPE	6.508	2.927	4.439	8.578	4.439	4.439	4.439	6.508	8.578	8.578	8.578
MaxAPE	18.435	7.374	13.221	23.649	13.221	13.221	13.221	18.435	23.649	23.649	23.649
MAE	6494560.156	131855.268	6401324.401	6587795.91	6401324.401	6401324.401	6401324.401	6494560.156	6587795.91	6587795.91	6587795.91
MaxAE	19949604.24	2398776.733	18253412.94	21645795.53	18253412.94	18253412.94	18253412.94	19949604.24	21645795.53	21645795.53	21645795.53
Normalized BIC	32.104	0.067	32.056	32.151	32.056	32.056	32.056	32.104	32.151	32.151	32.151



Appendix 7: (SPSS Outputs)

US import data analysis with the NAFTA partner countries : T-Test

a. Paired Samples Statistics

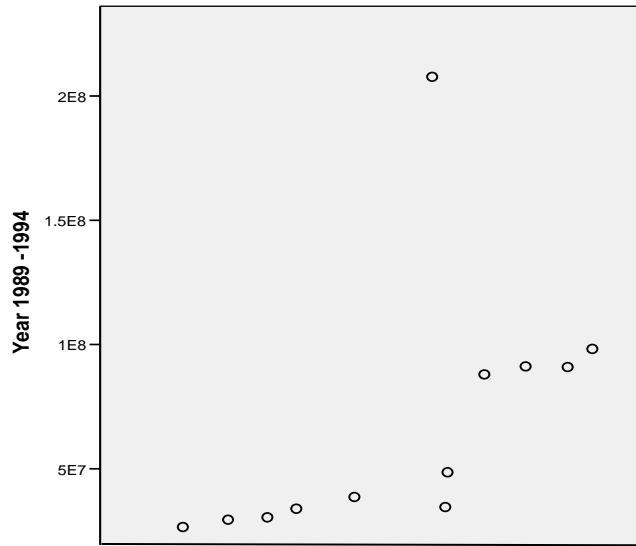
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Year 1989 - 1994	75545432.08	14	51677753.24	13811460.51
	Year 1995- 2004	135239586	14	48102908.52	12856043.07

b. Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Year 1989 - 1994 & Year 1995- 2004	14	0.615	0.019

c. Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Year 1989 -1994 - Year 1995- 2004	-59694153.9	43892816.03	11730848.52	-8.5E+07	-34351196.46	-5.089	13	0



Correlations & Regression

d. Correlations

		Year 1989 - 1994	Year 1995- 2004
Year 1989 -1994	Pearson Correlation	1	.615(*)
	Sig. (2-tailed)		0.019
	N	14	14
Year 1995- 2004	Pearson Correlation	.615(*)	1
	Sig. (2-tailed)	0.019	
	N	14	24

* Correlation is significant at the 0.05 level (2-tailed).

e. Regression: Variables Entered/Removed(b)

Model	Variables Entered	Variables Removed	Method
1	Year 1989 - 1994(a)		Enter

a All requested variables entered.

b Dependent Variable: Year 1995- 2004

Model Summary

ANOVA(b)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.615(a)	0.378	0.326	39476866.34

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1.13795E+16	1	1.13795E+16	7.302	.019(a)
	Residual	1.87011E+16	12	1.55842E+15		
	Total	3.00806E+16	13			

a Predictors: (Constant), Year 1989 -1994

a Predictors: (Constant), Year 1989 -1994

b Dependent Variable: Year 1995- 2004

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	91988766.28	19170274.7		4.799	0.000
	Year 1989 - 1994	0.573	0.212	0.615	2.702	0.019

a Dependent Variable: Year 1995- 2004

Appendix 8: (SPSS Outputs)

USA textiles import data analysis With major partners : *T-Test*

a. Paired Samples Statistics

b. Paired Samples Correlations

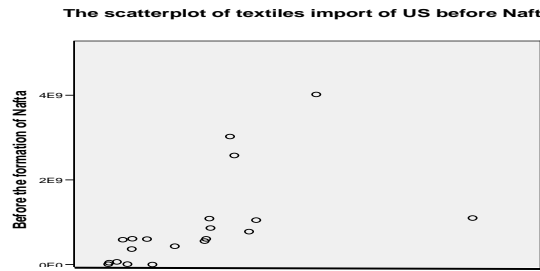
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Before the formation of Nafta	1070772636.05	21	1259346893	274812022.11
	After the formation of Nafat	2132513824.27	21	2532419499	552619240.33

		N	Correlation	Sig.
Pair 1	Before the formation of Nafta & After the formation of Nafat	21	0.719	0.000

c. Paired Samples Test

		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
Pair 1	Before the formation of Nafta - After the formation of Nafat	-1061741188	1846742889	4E+08	-1902368473	-221113903.6	-2.64	20	0.016

d. Correlations



		After the formation of Nafat	Before the formation of Nafta
After the formation of Nafat	Pearson Correlation	1	.719(**)
	Sig. (2-tailed)		0
	N	21	21
Before the formation of Nafta	Pearson Correlation	.719(**)	1
	Sig. (2-tailed)	0	
	N	21	21

** Correlation is significant at the 0.01 level (2-tailed).

Regression

e. Variables Entered/Removed(b)

Model	Variables Entered	Variables Removed	Method
1	Before the formation of Nafta(a)		. Enter

- a All requested variables entered.
- b Dependent Variable: After the formation of Nafata

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.719(a)	0.518	0.492	1.805E+09

a Predictors: (Constant), Before the formation of Nafta

ANOVA(b)

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	6.63816E+19	1	6.63816E+19	20.382	.000(a)
	Residual	6.18813E+19	19	3.25691E+18		
	Total	1.28263E+20	20			

- a Predictors: (Constant), Before the formation of Nafta
- b Dependent Variable: After the formation of Nafat

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients		t	Sig.
		B	Std. Error	Beta			
1	(Constant)	583480123.5	5E+08			1.117	0.278
	Before the formation of Nafta	1.447	0.32	0.719		4.515	0

Appendix: 9

Notes and Data sources:

1. The adjusted R^2 measures the proportion of the variation in the left side dependent variable that is explained by the right side dependent variables, adjusting for the number of variables in the equation.
2. The confidence interval shows the degree of certainty we can have in the estimated effects. If the confidence interval around the estimated effects of trade without NAFTA excludes the actual observed trade under NAFTA, we can say with 90 percent certainty that trade with NAFTA is different from trade without it. If the 90 percent confidence interval includes the observed trade under NAFTA, we can say that there is less than a 90 percent certainty that trade is different with NAFTA than without it.
3. The natural trading partner idea was originally proposed by Wonnacott and Lutz (1989) and was also discussed by Jacquemin and Sapir (1991). Krugman (1991a) endorses the idea in the following excerpt, "To reemphasize why this matters: if a disproportionate share of world trade would take place within trading blocs even in the absence of any preferential trading arrangement, then the gains from trade creation within blocs are likely to outweigh any possible losses from external trade diversion."
4. Richard Eckaus of M.I.T. and Robert Scott of the University of Maryland have found that even in the case of NAFTA, there has been a substantial trade diversion in the textile and clothing industry.
5. In the case of developing countries, applied tariffs are generally below GATT bindings so that barriers can be raised by raising tariffs. In developed countries where actual tariffs are constrained by GATT bindings, this objective can be achieved through safeguard measures including anti-dumping actions.
6. Panagariya (1997) criticizes the 'natural trading partners' hypothesis on theoretical grounds. A recent study by Krishna (2003) empirically tests the validity of the natural trading partner theory using U.S. trade data and finds no supporting evidence.
7. Bhagwati and Panagariya (1996), and Krueger (1999), however, argue that neighbours are not necessarily natural trading partners. They emphasize the importance of pre-RTA bilateral trade volume instead of geographical proximity between trading partners. In addition, Krueger (1999) and Lawrence (1996) argue that natural trading partners may not generate a net trade creation effect when neighbours have similar endowments.
8. Prior to NAFTA, the average Mexican tariff on US exports was about 10 per cent, while the average US tariff on imports from Mexico was less than 10 per cent. See Hufbauer (1992).

9. Agama and McDaniel (2002) estimate aggregate import-demand functions using quarterly data on real exports and imports and U.S. and calculated Mexican tariff rates for 1983-2001. They conclude (p. 3) that: "On average, a one percentage point increase in the tariff preference corresponds to somewhere between an 11.2 and 14. percent increase in U.S. import demand for Mexican goods, and an additional 2.4 to 3.8 percent, respectively, during the NAFTA period. On the export side, a one percentage point increase in the NAFTA tariff preference corresponds to roughly a 5.1 to 6.7 percent increase in Mexico's demand for U.S. goods."

10. Data for this comparison are from the U.S. International Trade Commission's interactive trade data base at <http://www.usitc.gov>.

11. World Trade Organization, International Trade Statistics 2004, Geneva, Switzerland, 2004.

12. a. The Type I error also known as an 'error of the first kind' or a 'false positive': the error of rejecting a null hypothesis when it is actually true. In other words, this is the error of accepting an alternative hypothesis when the result can be attributed to chance.

b. Type II error also known as the 'error of second kind' and a 'false negative': the error of failing to reject a null hypothesis when the alternative hypothesis is the true state of nature. In other words, this is the error of failing to observe a difference when in truth there is one.

13. For example, it appears that the binding constraint on EU membership for several central European countries is currently neither political nor macroeconomic, but the institutional and legal changes needed to bring these countries up to EU standards. Of course, some bureaucracies may give positive weight to using resources in this fashion thus invalidating the use of this mechanism as a signal in those cases.

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