The effect of Mercosur on trade:

How have Mercosur effected trade between member countries?

By: Besrat Habtu & Intisar Ahmed

Supervisor: Johanna Palmberg
Södertörn University | Institution of social science
Bachelor's essay 15 credits
Economics | Spring semester 2019

SÖDERTÖRN UNIVERSITY | STOCKHOLM
sh.se

Acknowledgements

It has been a long and fruitful journey to get here. This journey would not have been possible without the unconditional love, support and patience of our families and loved ones. We would also like to thank Johanna Palmberg, our supervisor. Her insights and guidance were invaluable for the completion of this thesis.

Regards,

Besrat and Intisar.

Abstract

This thesis examines whether there is an effect of the Mercosur free trade agreement on export and import between member countries. The study uses an extended gravity model framework on a panel data between the years 1975 to 2017 for 34 countries, including the member countries. Two different regressions were run using OLS and country fixed effect. A Linder effect was also added to the regressions to further understand the impact on trade. The results show a significantly positive effect of the FTA on imports. The FTA yielded insignificant and significantly negative result for OLS and FEM respectively on exports.

Key words: International trade theory, Mercosur, free trade agreement, Gravity model, Linder effect, export and import, trade flows,

Table of contents

1 Introduction

On the 4th of August 1941 prime minister Winston Churchill along with his chiefs of staff embarked on a mission across the Atlantic to meet president Franklin D. Roosevelt under the greatest secrecy. The leaders met at the height of World War II to sign an agreement called The Atlantic Charter. The agreement had eight clauses which promoted peace and security in the hope for a better future for the world. Clauses four and five were economic and highlighted the importance of full collaborations between all countries economically on equal terms which was essential for their economic prosperity. The two leaders understood that global economic collaboration is intertwined with peace and security. This paved the way for the unprecedented era of peace and security and was also the genesis of General Agreement on Tariff and Trade (GATT), (Nottage, H 2018).

GATT was established in 1947 to promote free trade. The main objective was to promote trade by reducing trade barriers and to aid cooperation, integration and mutual gains between trading countries. GATT soon became a global organisation and started operating under the new name World Trade Organization from the 1st of January 1995. (Feenstra and Taylor, 2008) Today out of the 195 countries in the world 164 are members of the WTO (WTO n.d.). Today every aspect of a nation's economy is linked to various other nations through trade. From trading goods and services, countries are also investing in each other's economies. In this age of globalization free trade agreements become even more necessary to aid the trading process (Krugman and Obstfeld, 2006).

Mercosur, which is an acronym for Mercado Comun del Sur which translates to The Southern Common Market is a free trade agreement that was established in 1991 by Argentina, Brazil, Paraguay and Uruguay and later joined by Venezuela and Bolivia. The latter is in process of being accredited into the agreement while Venezuela is no longer a member. This thesis will investigate the free trade agreement (FTA) and see its impact on imports and exports between the original four member countries.

1.2 Problem Question

How have the free trade agreement "Mercosur" effected trade between member countries?

1.3 Motivation, Purpose and Contribution

Today we are living in a world littered with conflicts and wars. Countries are questioning global economic rules and we are witnessing an increase in trade barriers. It is important for us not to forget and more importantly communicate the underlying peace and security origins behind the economic collaboration (Nottage, H 2018). The purpose of the paper is to analyse whether there is an effect of the Mercosur agreement on the member countries trade with each other. However, it is important to clarify that this paper will only see the effect on trade and not any other aspects of the Mercosur agreement.

The thesis has a gravity model approach, but we also include the Linder model for an additional perspective. According to Kepaptsoglou and Tsamboulas (2010), most of the reviewed empirical studies have been on exports. In addition to exports our contribution would be to analyse imports. We are hoping to find result through both gravity model and Linder Theory. Three out of four Mercosur members are developing countries and since Linder theory assumes that countries with similar gross domestic product (GDP) per capita will trade with each other, it makes Mercosur member countries a fitting choice for the analysis. This thesis hopes to contribute further through our analysis as to why researches argue for free trade and think it is important.

1.4 Method and Problem Limitations

The thesis will apply an econometric framework of an extended gravity model and also analyse the Linder effect, on a panel data over the period of 1975-2017 (before and during Mercosur) for 34 countries using Ordinary Least Square (OLS) regression and a fixed effect model (FEM) regression. Data is collected from UN-Comtrade, World bank, Great Circle Distances Between Capital Cities and The United nations. Exports and imports are chosen as the independent variables while the dependent variables are GDP, GDP per capita, difference in GDP per capita, and distance. Dummy variables will be made for Mercosur FTA, transition period one and two, after transition period, border, common language and colonial history. This study will not take into account the political instability effect on trade and the exclusion or sanction of the member country Venezuela. Focus is only on the trade part of the agreement.

1.5 Thesis Structure

The second chapter of the thesis gives a background of the Mercosur free trade agreement. The third chapter introduces theories and models of international trade. In the fourth chapter, previous researches are presented. In the fifth chapter the methodology is presented along with empirical results and analysis. The sixth and the last chapter concludes the thesis.

2. Mercosur, The South American Free Trade Agreement

The integration of Latin America has a long history but with poor records, since the domination of their colonisers, the Spaniards. The Spanish crown ruled the region from the 15th to the 18th century and slowly divided region it into two, then four, then six and then successfully into a dozen autonomous regions. It is for this reason we see Spanish as the official language of 18 of the 35 countries in Latin America. The leaders who helped lead the wars of independence had visions of uniting Latin America. The most notable of these leaders, Simon Bolivar tried twice by calling the congress in the year 1819 and 1826 but failed to unite Latin America.

Two centuries later attempts were made again for regional integration in 1960, which was called the Latin American Free Trade Association (LAFTA). Due to its poor performance the association was then scrapped and American Integration Association (LAIA) was established. The results were still not remarkable. Sub regional integration were also tried but failed and in 1991, the Common Market of the South (Mercosur) was created.

Mercosur was established in 1991, when the original member countries Argentina, Brazil, Paraguay and Uruguay signed the Treaty of Asuncion in Paraguay's capital city Asuncion. They had to constitute a common market by the December 31st, 1994. According to the agreement there were four main goals which were signed upon. The first was to allow free circulation of commodities, factors of production and services. Secondly, having a common trade policy and tariff. Third was to co-ordinate sectoral and economic policies and lastly to create a harmonised legislation domestically. The democratisation of the four countries made the regional integration possible but the treaty did not refer to no political institutions and its sole focus was on trade and economic issues (Malamud, 2005).

The purpose of Mercosur was to grow the economies of the member countries. The aim was to achieve greater economic growth along which they also wanted to bring about social

justice. They wanted to protect the environment and believed the co-operation between the member countries will help them to achieve this goal. The member countries decided to have their macroeconomic policies coordinated in all sectors of the economy including in fiscal and monetary matters. Scientific and technological development were also part of the treaty. They wanted to modernize the economy by expanding supply and get better quality of goods and services which in turn would improve the living standards. The night of 31st December 1994 all taxes and trade barriers between the member countries were lifted and terms were agreed which were extended to third party trading. (Mercosur free trade agreement, 1991)

Figures 1-3 gives an overview of the performance of Mercosur after the transition period. As can be seen from figure 1, till about 1999 all four economies were performing relatively constant with Brazil and Argentina exporting more followed by Uruguay and Paraguay. There is a shift in Brazil's exports followed by Argentina's export from 2002. Brazil and Argentina make up the chunk of the export of Mercosur. This is due to their large economies as well as Brazil and Argentina being the second and third largest producers soybeans and are also major exporters of corn, beef, chicken, and pork. Paraguay and Uruguay's performance on the other hand has not manage to see the same growth as the other two partners. However, they start showing growth from 2003 and onwards.

Figure 1 Illustrates Mercosur member exports with the world, 1994-2016 measured in U.S dollars
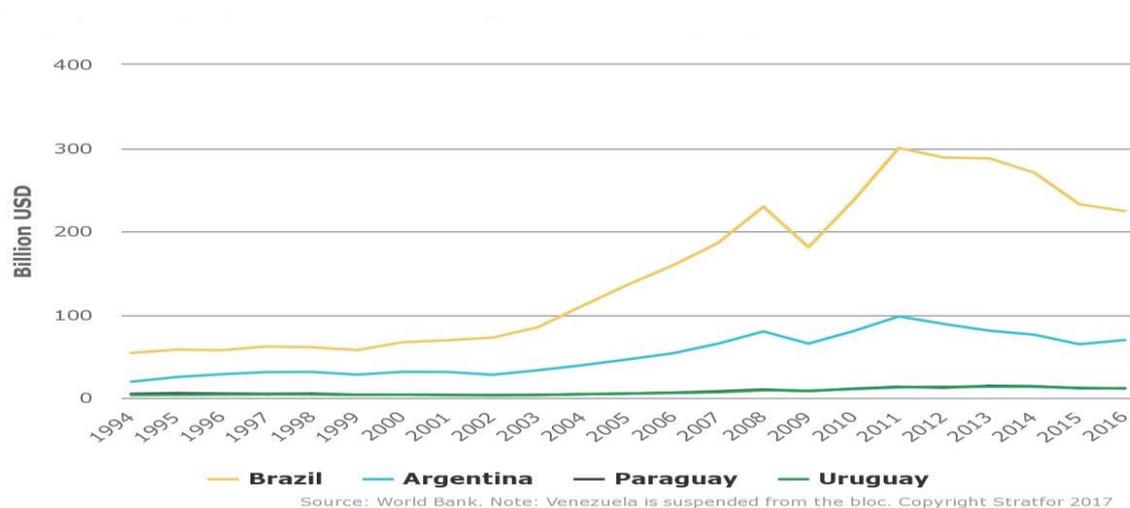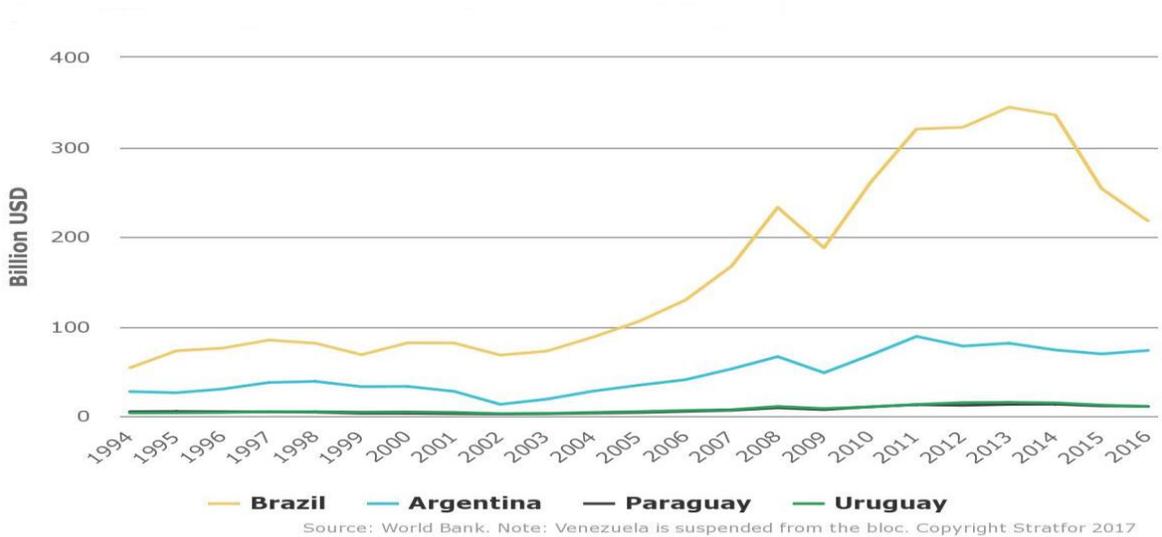
Figure 2 shows a similar trend, with imports picking up for both Brazil and Argentina earlier than their counterpart in the year 2002 and then followed by the other two countries from 2004.

Figure 2 Illustrates Mercosur member imports with the world, 1994-2016 measured in U.S dollars.

Lastly, figure 3 shows the current standing of Mercosur in the regional trade agreement and intra-regional trade exports for the year 2016. Mercosur's performance is exceedingly well and is the 5th biggest FTA, for both regional trade agreement exports and intra-regional trading.

Figure 3 Illustrates Regional Trade Agreement's share in exports of global manufactured goods and in intra-regional trade agreement in percentage.
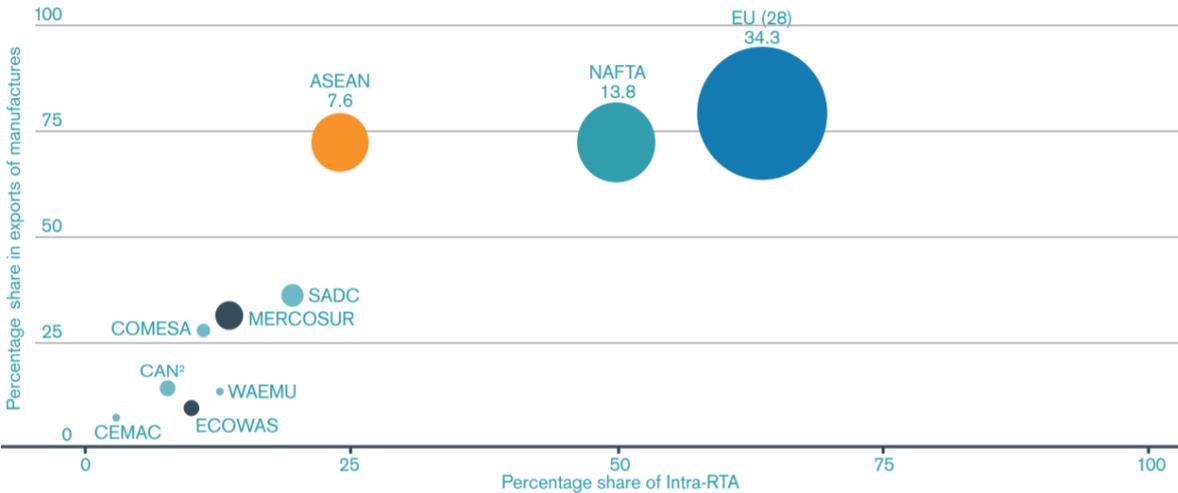
3. Theory

This chapter will cover the five important international trade theories. These theories help us to better understand why free trade between member countries generate economical gains. The pioneers of free trade were the classic economists of the eighteenth-century Adam Smith and David Ricardo (1772-1823).

3.1 Ricardian Trade Theory

The Ricardian Model, named after the great classical economist David Ricardo (1772-1823) was a big champion for free trade and argued that countries could benefit from international trade free from trade barriers and tariffs. The model assumes that all countries gain from trade by exporting goods that they have a technological comparative advantage in and import goods where they lack comparative advantage in. A country has a comparative advantage in a good if they can produce it at a lower opportunity cost than its trading partners. According to this model, everyone wins from trade and no one are worse off. The reason for this outcome is due to the use of only one production factor; labour. When introducing more factors of production, gains from trade becomes more complexed. This is evident in the Heckscher-Ohlin Model that will follow next in this chapter.

3.2 Heckscher-Ohlin Trade Theory

The Heckscher-Ohlin (H-O) theory was founded by the economist Eli Heckscher and Bertil Ohlin in the year 1920. It is a long run model for perfect competition which assumes that international trade is stimulated through the difference between two nations' factor endowments; capital and labour. The difference in factor endowment gives the countries the comparative advantage even if they operate with same technologies and preferences. The country which is labour intensive will increase production of a good that requires more labour and export that good to the other country. The good that is capital intensive will instead be imported from the capital intensive country. Since it is a long run model where all factors are mobile, when the relative price for a good increase the real earnings of that factor it uses intensively rises as well. This leads to a decrease in the real earnings of the other factor. This means that some will gain while others become worse off. Still, overall, all will win in an aggregate level when opening up for trade since a higher level of satisfaction is reached.

The Heckscher-Ohlin theory is one of the most referred theories in explaining trade patterns. However, it has been found not to be so useful in practice because of its simple assumptions. An earlier test was done of the model by the economist Wassily Leontief (1953) where he studied U.S. export and import. He found that the capital-intensive nation exported more labor-intensive goods and imported capital intensive goods. This is the opposite of what the H-O model assumes. This finding refutes the model and the test came to be defined as Leontief´s paradox. Contemporary researchers use an extended version of H-O with many more factors, goods and countries and also allowing for use of different technologies between countries (Feenstra and Taylor, 2008).

The basic question of trade is, what determines why a country exports and imports. H-O model focuses more on the supply side of trade where the factors of production determines trade pattern. In the opposite side of this theory there is The Linder Hypothesis which focuses on the demand side and overlapping demand that determines trade pattern (McPherson, Redfearn and Tieslau, 2001).

3.3 Linder hypothesis

"The more similar the demand structures of two countries, the more intensive, potentially, is the trade between these two countries." (Staffan Burenstam Linder, 1961, p.94)

Staffan Burenstam Linder developed the theory called The Linder Hypothesis in 1961. The theory states that trade should happen among countries with similarity in income per capita (Linder, 1961). His explanation for this is that countries with high income will demand high quality goods and therefore these countries will produce high quality goods for the domestic market. The surplus will be exported to nations with similar demand structure. In the same way, low income countries will demand low quality goods which will lead to the production of low quality goods for the domestic market. The surplus will be exported to nations with similar per capita income. So, the comparative advantage in the Linder theory is for an economy to produce goods that its domestic market demands and the excess will be sold in the world market. In other words, the overlap of production and consumption traits resemblance between nations of similar per capita income should lead to bigger trade among those nations (Hallak, 2006).

According to McPherson, Redfearn, & Tieslau (2001) the importance of the Linder theory lies not only in its ability to predict trade between developed countries but also between developing countries. Many of economic research have been focusing on the importance of trade among developed nations and neglected the significant of it between the developing countries. It might not have been of any significant to the researchers but trade has increased in the developing world in the recent times and it should therefore be examined and Linder theory is a good tool for examining just that. McPherson, Redfearn, & Tieslau (2001) tested the Linder hypothesis on six east African nations and found support for the theory to be true for five of those nations. This was due to their similarities in per capita income level that lead to them trading intensively. Since three of the four Mercosur countries are developing economies (World Bank), Linder effect will be a good variable to add to the extended econometric gravity model framework for the thesis. By applying Linder effect to the gravity model, the thesis will cover both the demand and supply side of how the Mercosur agreement have affected trade between the Mercosur nations.

3.4 New Trade Theory

Krugman (1979) created a general equilibrium model of noncomparative advantage trade. It is a theory of increasing returns to scale, imperfect competition and product differentiation. It takes a Chamberlinian monopolistic competition approach where scale of economies is presumed to be internal to firms. This is different from the traditional way of analysing trade under increasing returns, where markets stay perfectly competitive since scale economies are assumed to be external to firms. In the New Trade theory trade and gains of trade are caused by economic of scale. So, even though countries have the same preference, technology, and factor endowments trade will still transpire.

Below is an example from Krugman for better understanding of how international trade occurs under this new trade theory. Assume two countries, US and England. Both have the same technology to produce the same ten amounts of the product widget. They will need to put in fifteen hour of labour each to make these ten widgets. In total, it will take thirty hours of labour to produce twenty widgets in the world. Now let us instead produce all widgets in US and let England produce another good by itself. In a market characterized by increasing returns the bigger of scale focused in one location it will lead to a more effective production. US will stop production of the other good and move all labour to the widgets industry. As a single producer focusing on only one good it can now produce more efficiently five more

widgets for the same thirty hours of labour. There will be twenty-five widgets in the world rather than only twenty. The same will happen in England with the other good. Now the consumers of the world will have more to consume of these two goods. The English will import widgets from US and the Americans will import the other good from England. In other words, since countries cannot manage to produce all goods efficiently themselves, they will focus only on some and the other countries will produce the other goods (Krugman and Obstfeld, 2009). The choice of what good to export lies on the size of the domestic market for that good. Each country will be a net exporter of that good it specializes in. Ultimately the gain from trade is a world market with more different goods for the consumer (Krugman, 1980).

3.5 The Gravity Model

The gravity model for trade was created by the economist Jan Tinbergen in 1962 and it explains the value of trade. Tinbergen, who also was trained in physics, argued that trade between nations resembles the force of gravity between planets just like the Newton's Universal law of Gravitation. According to the Newton's theory two object with bigger mass, or smaller distance to each other have bigger attractional force between them. Therefore, applying this assumption, Tinbergen argued that countries with bigger GDP, or closer distance to each other will have greater trade between them. For better understanding of this statement, Newton's equation of universal law of gravitation is observed. Also how it is later applied in an econometric equation form of the monopolistic competition gravity model.

The equation of Newton's universal law of two objects states

$$F_g = G \cdot \frac{M_1 M_2}{d^2}$$
(1)

Where:
- F_g is the gravity force
- M_1 and M_2 are the mass of object 1 and 2
- d^2 is the distance between M_1 and M_2
- G is a constant that informs about the enormity of the interaction between force and mass.

In an econometric gravity equation form we have:

$$Trade = B \cdot \frac{GDP_1 GDP_2}{dist^n} \qquad\qquad (2)$$

Where:

- Trade is the value of trade between country 1 and 2
- GDP_1 and GDP_2 is the GDP of country 1 and 2
- $dist^n$ is the distance between both countries. Distance have an exponent n, $dist^n$, instead of 2, d^2, like in equation one. This is because we do not know the exact relationship between distance and trade.
- B is a constant term that informs us the enormity of the interaction between trade and GDP_1 and GDP_2 (Feenstra and Taylor, 2008)

The gravity model has a great foundation and stability with a high success rate in explaining bilateral trade. Therefore, many attempts were made to create a theoretical base for it. A theory foundation was a must in the economical world and the absence of it was highly criticized (UNCTAD & WTO, 2012). First attempt was done by Andersson (1979) where he tried to use a model that adopted product differentiation as a theoretical clarification. Bergstrand (1989) experimented with linking it to Heckscher Ohlin-Chamberlin-Linder models. Eaton and Kortum (2002) created a different variation of a Ricardian trade model incorporated with gravity model characteristics. Helpman, Melitz and Rubinstein (2008) and Chaney (2008) presented a simple international trade model including differentiated goods with firm heterogeneity. All of this strive to give gravity model a theoretical explanation proved instead that most trade theories need gravity to work (UNCTAD & WTO, 2012). It has become a successful tool for analysing international flow patterns of migration, foreign direct investment and most importantly international trade flows. (Martínez-Zarzoso & Nowak-Lehmann, 2003)

Except from giving the gravity model a theory base, economist of today extend the original gravity model with further variables that are of great importance for estimating trade patterns (Begovic, 2011). Like Begovic this thesis will add a Linder effect variable that analyses the similarities between two nations GDP per capita income. Furthermore, dummy variables common border, language and colonial history will also be added.

4. Previous Research

Baier and Bergstrand (2005) investigated whether a free trade agreement increase members' international trade or not. The motivation for their paper was the fact that 40 years of gravity equation estimates could not give a clear '"yes"' answer to the effect FTA have on trade flows. This they found to be strange since FTA had become quite popular with a widespread believe that it should increase trade. They argue, the previous mistake was that of not using a theoretically-motivated gravity equation using differenced panel data like they did in this specific investigation. Baier and Bergstrand used a set of 96 (potential) trading partners for five years' period from 1960 to 2000 on the panel. The data used was general real bilateral trade flows, real GDP, bilateral distance, dummies for full FTAs and custom unions, capital-labor rations, and "political" variables as possible instruments. The goal was to estimate the Average Treatment Effect of FTA on trade flows. The result showed, according to them, convincing empirical evidence that an FTA will on average increase two member countries trade about 86 percent after 15 years.

de Azevedo (2002) examined the real effect of Mercosur on trade with a Gravity Model approach. Data for 55 countries was pooled for each year from 1987-1998 and a single regression was estimated using both Tobit model and OLS. The variables used were total bilateral imports net of fuels, GDP in current value, GDP per capita, population, distance, the real exchange rate and dummy variables for transition period, custom union period and if a country belongs to a Mercosur or other blocks. Result showed no significant intra-block effect of Mercosur. The nation's trade with each other had already started to rise before Mercosur and the author argued that without Mercosur trade would still have evolved the same way. But the members overall import and export had been positively affected by Mercosur. This was the result of the countries starting to import more from other blocs without any sign of trade diversion happening. However, the overall export hade declined in the transition and the incomplete customs union periods and caused '"export diversion"'.

Begovic (2011) applied a gravity model approach to find out if the CEFTA free trade agreement effected trade between the member countries. The author used a panel dataset including 20 exporting countries over the period of 1999-2007. General Method of Moment techniques was used to estimate the dynamic specification model. Data collected for the

investigation were export flows, nominal GDP, differences in GDP per capita, CPI index, bilateral exchange rate, distance, and dummies for CEFTA membership or other FTAs, common borders and language, history etcetera. The result outcome was that the trade agreement did not improve trade in the region. The anther also tested for the Linder effect which gave a negative sign as expected. Data was collected from International Monetary Fund DOTS (Director of trade Statistics), World Bank World Development Indicators and UN.

Rose (2004) examined the effect of World Trade Organisation (WTO), Generalized Agreement on Tariffs and Trade (GATT) and the General System of Preference (GSP) on international trade. A standard Gravity model was used conducting a panel data with 175 countries over 50 years. Data collected was bilateral merchandise trade, population, real GDP, distance and dummies variables for language, landlocked, neighbours, land area, currency union etcetera. OLS, Fixed Effect and Random Effect regressions were used. Rose estimations gave no evidence that WTO/GATT had a positive effect on international trade, however the effect of GSP was positive significant. Data was collected from IMF, Penn World Table, World Bank and World Trade Organisation.

Kien (2009) studies the ASEAN Free Trade Area and the determinants of its export flows. A gravity model along with a panel data is used in the paper. Thirty-nine countries over the period of 1988 to 2002 were observed. Hausman-Taylor (HT) estimation was used for the panel data. The estimation revealed that export flows did increase with GDP and the trade area helped trade creation significantly among member countries.

Laird (1997) from World Trade Organisation (WTO) studied the effect of the Mercosur union between the years 1986-1995. They found that there is clear evidence that trade had risen after 1991 between the Mercosur members. Until 1995 export hade double and import showed a positive increase to. But according to WTO, most of the positive effect on trade was not caused by the trade costume itself, especially since trade hade also increased with other nations at the same time. Except for that Argentina and Brazil hade their own free trade agreement before Mercosur and it was here most trade hade a gone higher.

Martínez-Zarzoso and Nowak-Lehmann (2003) paper assesses the Mercosur-European trade and the trade potential between the two blocs. They use a gravity trade model with panel data analysis. The sample has 20 countries which includes the four official Mercosur countries and Chile with 15 members of the European Union. A country fixed effect was applied and was preferable to random effects. Also, a lot of variables such as bilateral trade, income, exchange rates, income difference were added to the gravity equation which played a big role determining the bilateral trade flows. The paper concluded that Mercosur had potential to trade more than what they exported in the year 1996 for each of the countries.

Rojid (2006) conducts a study to investigate two things. First is whether COMESA which is an abbreviation for Common Market for Esatern and Southern Africa is a stumbling or building bloc. Secondly, to find out the trade potentials for COMESA member counties within the region. To find out more about the potential in the region and in the integration scheme, gravity model was used. A panel data analysis over a period of 21 years from 1980 to 2001 was used on 147 countries'. A Tobit model was used to estimate the equation. The coefficients determining exports were as expected and were also highly significant. The paper concluded COMESA to be a building bloc which aided trade more internally than diverting trade from the world. The paper goes on to say that the potential for trade for COMESA is limited within the region and in fact they are overtrading with the member countries.

Kepaptsoglou, Karlaftis and Tsamboulas (2010) did a 10-year review of empirical studies on international trade flows within free trade agreements with gravity model in specification. Most of the empirical studies done from 1999 to 2009 has used export as the dependent variable. This coincides with our previous research contents. Export as an dependent variable has been the re-occurring choice of the researchers. That is why we chose to examine the effect on export. Furthermore, we also investigate import as a contributing factor to the research field, due to the lack of previous researches on it. This also enables us to see the Linder effect which shows the effect of free trade agreement on demand side of the trade.

5. Empirical Analysis

5.1 Methodology

The problem question of this thesis is "How have the free trade agreement 'Mercosur' effected trade between member countries?" To answer this question, we apply an augmented gravity model approach with OLS and a fixed effect model regression on a panel data set with 34 countries between the years 1975 and 2017.

Earlier studies have mostly used cross-sectional method to examine the effect of FTA with gravity model. This method has not been successful in explaining the effect of FTA on trade flows. Bias results have been given since the free trade agreement variable are not exogenous and since unobservable heterogeneity and omitted variables exists. For this reason, using a panel data analysis with fixed effect is preferable (Baier and Bergstarand, 2005; Rose, 2003; Caporale et al., 2009). To control for bilateral specific effects the estimators Fixed Effect model (FEM) or Random Effect model (REM) are used in the econometric world. FEM is more favourable since it takes into account for unobserved or misspecified components which illustrate trade volume between countries. With FEM it is also less likely to get a rejection of the null hypothesis of no correlation between the unobservable elements and explanatory variables. With this method better results are obtained without bias (Caporale et al., 2009). However since Rose (2004) and Martìnez-Zarzoso and Now-Lehmann (2003) and many more argue FEM is more appropriate for estimating FTA, we will follow suit.

5.2 Regression Model Specifications

The gravity equation is of multiplicative nature. Therefore, to estimate it the natural log has to be taken for all variables along with a log-linear equation which an OLS regression can estimate (UNCTAD & WTO, 2012).

$$lnExp_{ij} = \beta_0 + \beta_1 lnGDPexporter_{it} + \beta_2 lnGDPimporter_{jt} + \beta_3 lnGDPpercapExp_{it} \quad (3)$$
$$+ \beta_4 lnGDPpercapImp_{jt} + \beta_5 lnDist_{ij} + \varepsilon_{ijt}$$

Where,

β is a constant,

$lnExp_{ij}$ is the value of export between country i to country j,

$lnGDPexporter_{it}$ is the GDP of country i in time t,

$lnGDPimporter_{jt}$ is the GDP of country j in time t,

$lnGDPpercapExp_{it}$ is the GDP per capita income of country i in time t,

$lnGDPpercapImp_{jt}$ is the GDP per capita income of country j in time t,

$lnDist_{ij}$ is the distance between the country i and country j. Distance is constant over time,

ε_{ijt} is the error term,

Now days, where extended form of gravity equations are used more, additional independent variables and dummies are also added. As early stated Linder theory assumes that countries with similar GDP per capita will trade with each other more. Therefore, a Linder effect variable is added to our equation five. To capture the effect of Mercosur creation on member countries trade we have also added dummy variables for FTA, transition periods and after transition period to the equation. We added two transition periods due an extension that was given to Mercosur after the initial one (Jan Peter Schmidt, 2017). In a standard gravity equation distance stands alone as a proxy for trade cost. Therefore, border dummy is used as an additional indicator that might influence the trade cost. Common language and colonial history provides information cost (UNCTAD & WTO, 2012).

$$lnExp_{ij} = \beta_0 + \beta_1 lnGDPexporter_{it} + \beta_2 lnGDPimporter_{jt} + \beta_3 lnGDPpercapExp_{it} + \beta_4 lnGDPpercapImp_{jt} + \beta_5 lnDist_{ij} + \beta_6 lnLindereffect_{it-jt} + \beta_7 MercCountries_{ij} + \beta_8 TransPr1_{ij} + \beta_9 TransPr2_{ij} + \beta_{10} AfterTrans_{ij} + \beta_{11} Bordering_{ij} + \beta_{12} CommLang_{ij} + \beta_{13} ColHis_{ij} +$$
$$\varepsilon_{ijt} \tag{5}$$

Where,

$lnLindereffect_{it-jt}$ is the difference between country i GDP per capita income and country j GDP per capita income.

$MercCountries$ is a dummy variable for Mercosur membership between 1991-2017. It take value of 1 if both countries are members, and 0 if otherwise.

$TransPr1_{ij}$ is a dummy variable for the transition period into Mercosur between the years 1991-1994. It takes the value of 1 when trade happens during that time, and 0 otherwise.

$TransPr2_{ij}$ is a dummy variable for the second transition period between the years 1995-2000. It takes the value 1 when trade happened during that time, and 0 otherwise.

$AfterTrans_{ij}$ is a dummy variable for the years after transition periods 2001-2017. It takes the value of 1 during that time, and 0 otherwise.

$Bordering_{ij}$ is a dummy variable that takes the value 1 if country i and country j share a border, and 0 otherwise.

$CommLang_{ij}$ is a dummy variable that takes the value 1 if country i and country j share a language, and 0 otherwise.

$ColHis_{ij}$ is a dummy variable that takes the value 1 if country i and country j share a colonial history, and 0 otherwise.

According to McPherson, Redfearn, & Tieslau (2001), the demand side Linder theory was first intended to be applied to trade of manufacturing goods. In the developing world majority of its export are made of primary product and its import consist mostly of manufacturing goods. In regard to this, when estimating the Linder effect on developing countries like Argentina, Brazil and Paraguay it is important to analyse the imports and not only exports as a dependent variable. For this reason, we are doing a second OLS and fixed effect regression with import as a dependent variable.

$$
\begin{aligned}
lnImp_{ij} = \beta_0 &+ \beta_1 lnGDGimporter_{it} + \beta_2 lnGDPexporter_{jt} + \beta_3 lnGDPpercapImp_{it} \\
&+ \beta_4 lnGDPpercapExp_{jt} + \beta_5 lnDist_{ij} + \beta_6 lnLindereffect_{it-jt} \\
&+ \beta_7 MercCountries_{ij} + \beta_8 TransPr1_{ij} + \beta_9 TransPr2_{ij} \\
&+ \beta_{10} AfterTrans_{ij} + \beta_{11} Bordering_{ij} + \beta_{12} CommLang_{ij} + \beta_{13} ColHis_{ij} \\
&+ \varepsilon_{ijt} \quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad (6)
\end{aligned}
$$

Where,

Imp_{ij} is the trade value of import from country i to country j,

5.3 Data and Explanation of variables.

Mercosur came into effect 1991 and is still a FTA today. We have chosen to collect data from the year 1975 to 2017. We chose these years so we can get a better perspective of how trade has changed over time. The two graphs below show us the trend of the Mecosur member countries' trade with each other over the span of 42 years. Figure 4 highlights that Argentina and Brazil are the biggest exporting countries of the Mercosur. A clear rise can be seen in the number of exports for both the countries from 1990 and onwards. This can be explained by the signing of the FTA. However, there was a downward trend for them from 1998 to 2000. They recovered shortly and had another downward trend from 2001 to 2002. The exports increased till about 2007 and then decreasing again and finally picking up from 2009. From 2009 onwards they got into a cyclical trend of exports. The average mean of the exports increased through these years. The same can be said about Paraguay and Uruguay, but at a smaller scale. Their exports have been small and similar to each other. They did not witness a rise till 1995 followed by a little dip and then they continued to grow at a very small rate compared to the other two nations. Overall, there is a positive trend upwards for all.

Figure 4 Total export volumes, between Mercosur members.
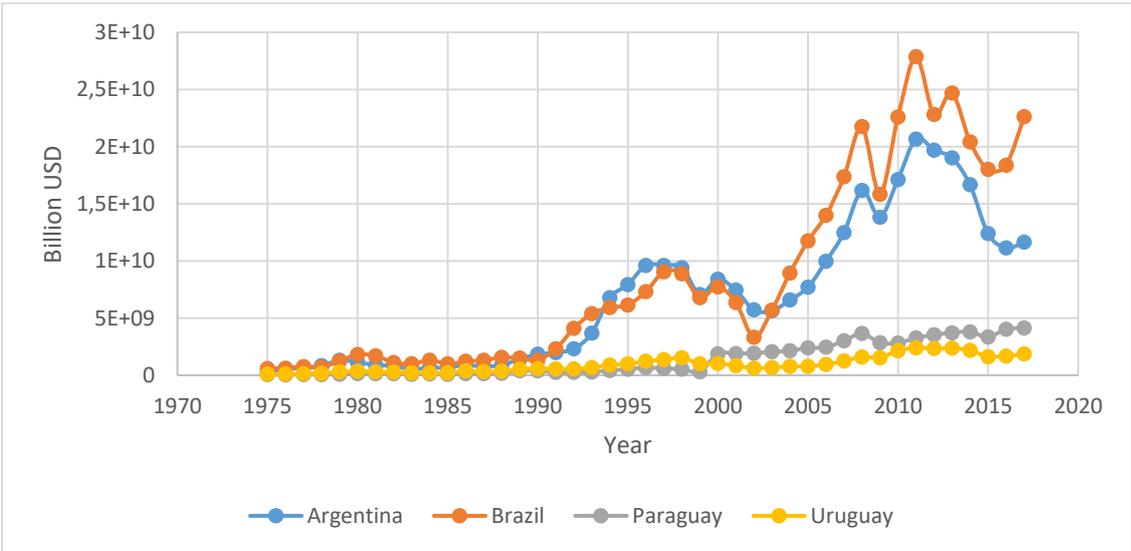
Source 1: Export data downloaded from UN-Comtrade

Figure 5 also shows the same trend, with Argentina and Brazil being the two biggest importers out of the Mercosur member countries. These trend were similar due to the crisis that both Argentina and Brazil went through. The first crisis was the Brazilian devaluation which took place in the year 1998 followed by Argentinian economic crisis from 2001 to 2002. Lastly the global economic crisis also effected trade (Carranza, 2010). Paraguay and Uruguay performed better at imports than they were at exports but they also felt the trickledown effect of the crises.

Figure 5 Total import volumes, between Mercosur members.
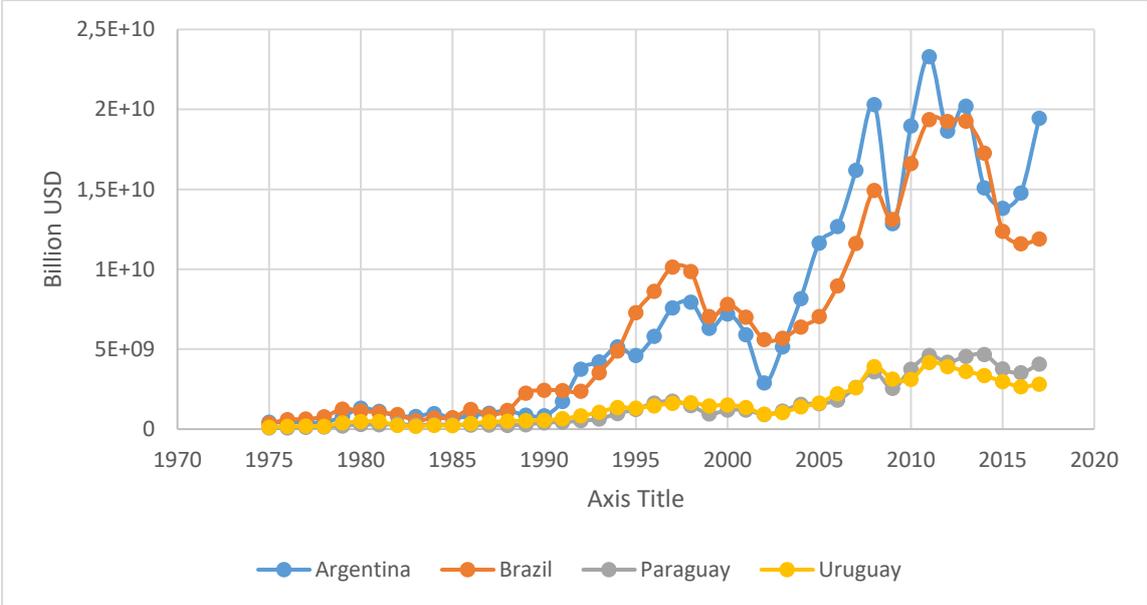
Source 2: Import data downloaded from UN-Comtrade.

In econometrics, the rule is the more observation you have the higher degree of freedom you get (Studenmund, 2011). Therefore, we chose the Mercosur countries which are: Argentina, Brazil, Paraguay and Uruguay along with 30 other countries from all over the world with different economic background. The observation was done over the period of 42 years, with a total of 34 countries (shown in table1) because the more observations the better for panel data. In total, we have 4712 observations for export regression and 4858 observations for import regression.

Table 1: Countries of observation

The Southern Common Market (Mercosur)	European	Pacific Alliance Free Trade Agreement	North American Free Trade Agreement (NAFTA)	South Asian Free Trade Area (SAFTA)
Argentina	Austria	Chile	Canada	Afghanistan
Brazil	Belgian	Colombia	Mexico	Bangladesh
Paraguay	Denmark	Mexico	USA	Bhutan
Uruguay	Finland	Peru		India
	France			Maldives
	German			Nepal
	Greece			Pakistan
	Ireland			Sri Lanka
	Italy			
	Luxemburg			
	Netherlands			
	Portugal			
	Spain			
	Sweden			
	United Kingdom			

Table 2: Variables included in the regression, source and expected outcome

Variable	Description	Source	Expected outcome
$lnExp_{ij}$	Dependent Variable. Export value from country i to j	UN-Comtrade	+
$lnImp_{ij}$	Dependent variable. Import value from country i to j	UN-Comtrade	+
$lnGDPexporter_{it}$	GDP of exporting country	United Nations Statistics Divison	+
$lnGDPimporter_{jt}$	GDP of importing country	United Nations Statistics Division	+
$lnGDPpercapExp_{it}$	GDP per capita of exporting country	United Nations Statistics Division	+
$lnGDPpercapImp_{jt}$	GDP per capita of importing country	United Nations Statistics Divison	+
$lnDist_{ij}$	Bilateral distance in miles	Ger Circle Distances Between Capital Cities	-
$lnLindereffect_{it-jt}$	Lindereffect is the different between GDP per capita between two economies	United Nations Statistics Division	-
$(d)MercCountries_{ij}$	Dummy varibale for Mercosur membership	Treaty of Asuncion	+

(d)TransPr1$_{ij}$	Dummy variable for Mercosur transition period 1	Treaty of Asuncion	+
(d)TransPr2$_{ij}$	Dummy variable for 2nd transition period for Mercosur.	Jan Peter Schmidt (2017)	+
(d)AfterTrans$_{ij}$	Dummy variabel for Mercosur after transition periods	Treaty of Asuncion	+
(d)Bordering$_{ij}$	Dummy variable for sharing common border	CEPII	+
(d)CommLang$_{ij}$	Dummy variable for sharing common language	CEPII	+
(d)ColHis$_{ij}$	Dummy variable for sharing colonial history	CEPII	+

$lnExp_{ij}$ and $lnImp_{ij}$ are the dependent variables of the thesis which are measured in current US dollars. We are studying the effect of Mercosur countries' trade with each other along with the 30 other countries on the dependent variables. The expected outcome of the co-efficient is positive. (Helpman et al., 2008)

$lnGDPexporter_{it}$ and $lnGDPimporter_{jt}$ are independent variables that measure the countries' economies in current US dollars. The expected outcome of the co-efficient is positive because the bigger the GDP the bigger the production of goods, the more the country can export. (Appleyard, Field and Cobb, 2006)

$lnGDPpercapExp_{it}$ and $lnGDPpercapImp_{jt}$ are independent variables measured in current US dollars. GDP per capita is measured by dividing the country's GDP with its population. GDP per capita is a good indicator of a country's living standards and its purchasing power (Zago de Azevedos, 2002) Therefore the higher the GDP per capita, the more the country trades (Nilsson, 1997).

$lnDist_{ij}$ in an independent variable measured in miles. The variable is measurement between the two countries' capital. Distance is used to represent transport costs which becomes higher the farther away the countries are from each other. Since it represents a cost the outcome of the co-efficient is expected to be negative (Feenstra, 2008)

$lnLindereffect_{it-jt}$ is an independent variable which is the difference between two economies' GDP per capita. Linder theory assumes that there will be more trade between countries if the GDP per capita income is similar. The greater the difference the more negative is the effect on trade. Therefore, the expected outcome is negative (McPherson, Redfearn, & Tieslau, 2001)

$MercCountries_{ij}$ is a dummy variable for the Mercosur countries. It is used to distinguish that both exporting and importing countries are members of the FTA and will take the value 1 when that is the case otherwise 0 from the year 1991.

$TransPr1_{ij}$ is a dummy variable that takes the value of 1 during the first transition period of 1991-1994 and 0 for the rest of the years. This is to the see impact of the agreement after the adoption of the new rules for all four countries (de Azevedo, 2002).

$TransPr2_{ij}$ is a dummy variable that takes the value of 1 during the second transition period which was from 1995-2000 and 0 otherwise.

$AfterTrans_{ij}$ is a dummy variable that takes the value of 1 from the year 2001-2017 and 0 for the rest of the years. These years are after both transition periods. It is between these years that we see the full impact of the trade agreement since establishing of the new rules fully.

$Bordering_{ij}$ is a dummy variable that takes the value of 1 if they share the same border and 0 otherwise. Trade is said to go up by 65% if countries share borders (Head, 2003)

$CommLang_{ij}$, $ColHis_{ij}$ and $Bordering_{ij}$ are dummy variables that takes the value of 1 if both the countries share a common language, colonial history and border. Otherwise it takes the value 0. Trade is assumed to go up by 65% if countries share borders (Head, 2003) Trade is also positively affected if the countries share common language and colonial history (UNCTAD & WTO, 2012).

5.4 Result and Analysis

Table 3 and 4 consists of the descriptive statistics of the total data set in logged form. The numbers will be different from each other in both the tables due to an unbalanced panel data,

therefore observations vary. Table 3 consists of the data set with exports as the dependent variable. This specific data set has 4,712 observations. Exports has 24.045 maximum and minimum of 17.297 with standard deviation being 3.455 and minimum 0. The standard deviation is high due to exports being made to 33 different countries all of which are in different economic stages. GDP for exporting and importing countries almost having similar means. This is also the case for GDP per capita for exporting and importing countries along with Linder effect and distance. GDP for exporter has a max of 28.59273 with minimum 21.129 and std. dev. 1.920. This GDP value are for the Mercosur member countries where all the economies are alike each other and therefore you can see the max and minimum not being to far away from each other. The standard deviation is big due to the numerous observations spanning from the investigated years. GDP for importer has a max of 30.60069 with minimum 8.735 and std. dev. 2.614. GDP importer has all GDP from the 33 other countries and thus they vary so vastly which is also evident from the standard deviation. GDP per capita for exporter has a max of 9.748 with minimum 6.171 with std. dev 0.826. This shows that the GDP per capita of the Mercosur countries are very similar and low standard deviation further solidifies the claim. GDP per capita for importer has a max of 11.685 with minimum 4.673 with std. dev 1.551. This again shows the variety of economies that is in the importing list which are from all around the world. Linder effect has a max of 11.644 with minimum -0.211 with std. dev 1.473. Linder effect tells us the difference between the exporting and importing countries' per capita value and since there are different economies the number varies. The FTA for Mercosur been in force for 27 years out of the 42 so therefore the mean is 0.069 with std. dev. Being 0.253 and minimum being 0 and maximum being 1.

Table 3 Summary of descriptive statistics, Exports.

Variable	Observations	Mean	Std. Dev.	Min	Max
lExp	4,712	17.297	3.455	0	24.046
lGDPexporter	4,712	25.036	1.920	21.130	28.592
lGDPimporter	4,712	25.464	2.614	8.735	30.600
lGDPpercapExp	4,712	8.257	0.826	6.172	9.748
lGDPpercapImp	4,712	8.870	1.551	4.673	11.685
lLindereffect	4,712	8.745	1.473	-0.2114	11.644
lDist	4,712	8.384	0.869	4.868	9.258
MercCountries	4,712	0.069	0.253	0	1

Table 4 consists of the data set with exports as the dependent variable. This specific data set has 4,712 observations. Imports has a mean of 17.027 a max of 24.315, min of 1.792 and standard deviation of 3.346. GDP for importer has a max of 34.533 with minimum 21.012 with standard deviation 5.100 and mean 28.281. GDP for exporter has a max of 34.537 with minimum 19.213 with standard deviation 4.094 and mean 29.713. GDP per capita for importer has a max of 34.520 with minimum 6.171 with std. dev. 12.612 and mean20.853. GDP per capita for exporter has a max of 34.538 with minimum 4.780 with std. dev. 12.513 and mean 22.003. Linder effect has a max 34.538, min 1.946 with std. dev 9.974 and mean 27.779. Distance has a max of 34.520, minimum of 29.411, std. dev. 0.892 and mean 33.647. FTA for Mercosur been in force for 27 years out of the 42 so therefore the mean is 0.069 with std. dev. Being 0.253 and minimum being 0 and maximum being 1.

Table 4 Summary of descriptive statistics, Imports.

Variable	observations	Mean	Std. Dev.	Min	Max
lImp	4,858	17.027	3.346	1.792	24.315
lGDPimporter	4,858	28.281	5.100	21.013	34.533
lGDPexporter	4,858	29.713	4.094	19.213	34.537
lGDPpercapImp	4,858	20.853	12.613	6.171	34.521
lGDPpercapExp	4,858	22.004	12.514	4.780	34.539
lLindereffect	4,858	27.779	9.975	1.946	34.538
lDist	4,858	33.647	0.893	29.411	34.520
MercCountries	4,858	0.067	0.250	0	1

Table 5 Gravity model regression results in logged form

Dependent variable: Export and Import

Variabels	OLS Model Exp_{ij}	OLS Model Imp_{ij}	Fixed Model Exp_{ij}	Fixed Model Imp_{ij}
GDPexporter	1.090***	0.880***	1.118***	0.203***
	(0.021)	(0.033)	(0.015)	(0.027)
GDPimporter	0.404***	0.204***	-0.106***	0.280***
	(0.025)	(0.044)	(0.021)	(0.031)
GDPpercapExp	-0.361***	-0.196***	0.178***	0.231***
	(0.059)	(0.010)	(0.052)	(0.032)
GDPpercapImp	0.484***	0.052***	0.231***	0.018
	(0.037)	(0.018)	(0.075)	(0.013)
Lindereffect	-0.165***	-0.529 ***	0.022	-0.009**
	(0.037)	(0.007)	(0.035)	(0.004)
MercCountries	0.103	2.268***	-0.292***	0.802***
	(0.282)	(0.199)	(0.110)	(0.109)
TransPr1	0.180	-0.038	0.291**	-0.012
	(0.341)	(0.257)	(0.116)	(0.131)
TransPr2	0.593*	0.233	0.906***	0.747***
	(0.360)	(0.274)	(0.147)	(0.113)
AfterTrans	0.259	0.584***	0.647***	0.872***
	(0.297)	(0.213)	(0.116)	(0.092)
Dist	-1.399***	-0.065	0.00	0.00
	(0.067)	(0.065)	(0.00)	(0.00)
Bordering	-0.033	2.592***	0.00	0.00
	(0.102)	(0.107)	(0.00)	(0.00)
CommLang	0.297***	0.888***	0.00	0.00
	(0.076)	(0.073)	(0.00)	(0.00)
ColHis	0.946***	1.003***	0.00	0.00
	(0.090)	(0.094)	(0.00)	(0.00)
Constant	-8.578***	-8.825***	-11.721***	-2.203**
	(0.653)	(1.722)	(0.546)	(1.018)
Number of countries	34	34	34	34
Obserrvation	4712	4858	4712	4858
R- squared	0.557	0.442	0.785	0.779

Standard errors in parentheses
***p<0.01, **p<0.05, *p<0.1

Table 5 consists of all the result from the OLS and Fixed effect regressions at 1%, 5% and 10% significance level. Two separate regressions were run, one for each of the dependent variables exports and imports. As seen from the table, OLS regression for exports shows 1% change in GDP of the exporting country will lead to an increase of 1.090% in exports. The positive co-efficient is in line with our expectation. A positive relation can also be seen between GDP of the importing country and exports. For 1% increase in GDP importer will lead to an increase 0.404% in exports. GDP per capita for exporting countries shows 1% change in GDP per capita will lead to a decrease of -0.361% in exports. This was not in line with our expectation. GDP per capita for importing countries however shows 1% increase will lead to an increase of 0.484% in exports. Linder effect had an expected negative co-efficient. Mercosur did have a positive co-efficient but the results were not statistically significant. Distance has negative effect on exports with an expected outcome. 1% change in distance decreased exports by 1.399%. Common language and colonial history also has a positive effect on exports. All these eight variables are statistically significant at 1%. The FTA for Transition period 1 and 2 both had positive effects on trade, but only transition period 2 was statistically significant.

The FEM result for export shows 1 % change in GDP for exporter country will lead to increase of 1.118% in exports. The GDP for importing country will lead to a decrease of 0.106 in export if GDP changes with 1%. It had an unexpected negative sign. The GDP per capita for exporting country was positive and a change with 1% in GDP per capita will cause a 0.178% increase in exports. GDP per capita for importing country will increase export with 0.231% if it changes with 1%. The variable for Mercosur countries has a negative effect on exports. 1% change will cause a decrease of 0.292% in exports. However, transition period one, two and after transition had all a positive effect on trade. An 1 % increase in transition period one and two and after transition will lead to an increase of 0.291%, 0.906%, 0.647% respectively. All variable motioned have a significant effect of 1% except for transition period one which has 5 % significant level. The Linder effect had an unexpected positive sign but was not of any significance. The time-variant variables distance, bordering, common language and colonial history were all dropped using FEM.

OLS regression for imports shows 1% change in GDP of the exporting country will lead to an increase of 0.880% in exports. The positive co-efficient is in line with our expectation. A positive relation can also be seen between GDP of the importing country and exports. For 1%

increase in GDP importer will lead to an increase 0.204% in exports. GDP per capita for exporting countries shows 1% change in GDP per capita will lead to a decrease of -0.196% in exports. This was not in line with our expectation. GDP per capita for importing countries however shows 1% increase will lead to an increase of 0.052% in exports. Linder effect had an expected negative co-efficient. Mercosur has a positive co-efficient and for 1% change in Mercosur imports increased by 2.268%. After transition has a positive correlation with 1% change in the variable increases imports by 0.584%. Common language, colonial history and bordering all have a positive effect on imports. 1% change in common language increased exports by 0.888% while 1% change in border increased imports by 2.592% and 1% change in colonial history increased imports by 1.003%. All these ten variables are statistically significant at 1%. Distance has negative effect on imports as expected but was not significant. Transition period 1, and 2 were both insignificant.

The FEM result for imports shows 1 % change in GDP for exporter country will lead to increase of 0.203% in exports. The GDP for importing country will lead to an increase of 0.280 in export if GDP changes with 1%. The GDP per capita for exporting country was positive and a change with 1% in GDP per capita will cause a 0.231% increase in imports. These three variables were statistically significant at 1%. GDP per capita for importing country was positive but insignificant. The Linder effect had a negative sign and was significant at 5% significant level. The variable for Mercosur FTA has a positive effect on imports. 1% change will cause an increase of 0.802% in exports. Transition period one was insignificant while transition period two had a positive effect at 1% significant level. After transition had a positive effect on imports. An 1 % increase in after transition lead to an increase of 0.872%. The time-variant variables distance, bordering, common language and colonial history were all dropped using FEM.

6. Conclusions and Discussion

The purpose of this study was to analyse whether there is an effect of the Mercosur agreement on the member countries' trade with each other. To see the effect of the FTA on trade flows a panel data was done using gravity model as a framework. Two regressions were run for the two dependent variables export and import. Consequently, two models were used as well for the framework; one was ordinary least squares and the other was fixed effect model.

The Mercosur FTA did not have a significant effect on exports in the OLS but had a small negative effect on exports which was significant in the fixed effect model. This was not in line with our expectation. This could have happened due to too many predictor values, causing collinearity. This also contradicts figure 4 in chapter five which shows that there was an increase in exports from the year 1991 till about 1997 and then dropped and then rose back up around the year 2000 and continued an aggregate rise. Also, per Laird (1997), exports had significantly risen from the year 1991 and had doubled by the year 1995. Although exports had increased Laird believed that the increase in exports would have happened gradually despite the FTA due to trade between Argentina and Brazil, which had their own treaty before Mercosur.

While the outcome of the Mercosur variable was not as expected, the transition periods and the period after transition were all positive and significant. This implies there was a positive effect on exports. This could also be due to the several setbacks that Mercosur had to endure over the years through global crises. Mercosur was on the brink of collapsing when they were hit by the Brazilian devaluation in 1998 followed by the Argentinian economic crisis in 2001. The global crisis of 2008 also effected exports (Carranza, 2010). This could have dented the effect of the Mercosur variable.

The Mercosur FTA had significantly positive effect on imports. The OLS co-efficient of the Mercosur FTA is higher than it is in the FEM but the FEM has a higher r-square which is an indicator for the reliability of the model. Transition period two (1995-2000) had also yielded positive co-efficient. However, it is the years from 2000-2017 where we see the biggest impact of the FTA for all four countries. This was when the transition periods where over and the treaty has been active for over a decade. According to Baier and Bergstrand (2005) findings, a FTA will on average will increase trade by 86% after 15 years of establishment between two partners. The after transition period supports this assumption.

Evidence of this can also be witnessed in chapter five figure 5 which illustrates import values rise between the Latin American countries after about fifteen years. Can this rise be only contributed to the creation of Mercosur or is it a global effect of increased trade? Laired presented a short WTO research study covering the years 1986-1995. He implied that the rise in trade after the year 1991 was due to a global increase in trade and not only due to Mercosur. However, this thesis does not take into account the global impact of the increased trade in the panel analysis. Figure 5 does illustrate that import started to rise directly after 1991 to 1995 (though the transition period for these years showed to be significantly negative) and continued with a significantly positive rise through transition period two and after transition period. This is different from chapter two figure 2, which shows Mercosur import values with the world rise first after 2000.

Another plausible reason for the positive effect of Mercosur can be due to the similarity of GDP between trading partners. GDP for all countries had a significant positive effect on imports. It can also be contributed to the sharing of borders which is also predicted by gravity model. This variable together with common language and colonial history were all significant and positive seen from the OLS and FEM model minus the time invariant variables. The Linder effect is significantly negative, as expected, which also further supports the claim that the similarity in GDP per capita income between these countries result in more imports. The Linder Effect is mostly visible when there is trade for manufactured goods, since majority of countries in Mercosur are developing countries their imports are mostly manufactured goods therefore making their import side perfect for Linder estimation. (McPherson, Redfearn, & Tieslau, 2001). So, in conclusion there is an positive effect on imports due to Mercosur FTA.

If this thesis followed traditional researches and focussed solely on exports, the effect of Mercosur would have been undermined and the conclusion would have been based only on the export analysis which was negative and significant. Keeping this is mind, for further researches economic institutions should include both the developed and the developing world's perspectives and methods. Because on most studies, economical framework of the western world is used on the developing countries trade. Many facets of the developing worlds are overlooked.

Reference

Anderson, J. E. (1979). A theoretical foundation for the gravity equation. *The American Economic Review*, *69*(1), 106-116.

Baier, S. L., & Bergstrand, J. H. (2007). Do free trade agreements actually increase members' international trade?. Journal of international Economics, 71(1), 72-95.

Begovi, S. (2011) The Effect of Free Trade Agreements on Bilateral Trade Flows: The Case of Cefta. Zagreb International Review of Economics & Business, Vol. 14, No 2. pp. 51-61

Bergstrand, J. H. (1989). The generalized gravity equation, monopolistic competition, and the factor-proportions theory in international trade. *The review of economics and statistics*, 143-153.

Burenstam Linder, S. (1961). "An Essay on Trade and Transformation". Diss., Stockholm School of Economics, p94

de Azevedo, A. F. Z. (2002). What Has Been the Real Effect of Mercosur on Trade: A Gravity Model Approach. Universidade Federal do Rio Grande do Sul, Programa de Pos-Graduação em Economia.

Caporale, G. M., Rault, C., Sova, R., & Sova, A. (2009). On the bilateral trade effects of free trade agreements between the EU-15 and the CEEC-4 countries. *Review of World Economics*, *145*(2), 189-206.

Carranza, M. E. (2010). Mercosur, the global economic crisis, and the new architecture of regionalism in the Americas. *FLACSO/LATN Working Paper*, *125*.

Chaney, T. (2008). Distorted gravity: the intensive and extensive margins of international trade. *American Economic Review*, *98*(4), 1707-21.

Eaton, J., & Kortum, S. (2002). Technology, geography, and trade. *Econometrica*, *70*(5), 1741-1779.

Feenstra, R. & Taylor, A. (2014). International trade third edition. Worth Publishers. Pg: 61-95, 185-227 and 271-313.

Hallak, J. C. (2006). *A product-quality view of the Linder hypothesis* (No. w12712). National Bureau of Economic Research, Pg1-3

Helpman, E., Melitz, M., & Rubinstein, Y. (2008). Estimating trade flows: Trading partners and trading volumes. *The quarterly journal of economics*, *123*(2), 441-487.

Jan Peter Schmidt, last updated: September 2017. *MERCOSUR,* accessed 2019-05-02, < https://opil.ouplaw.com/view/10.1093/law:epil/9780199231690/law-9780199231690-e655?rskey=SFXpzt&result=1&prd=EPIL>

Kepaptsoglou, K., Karlaftis, M. G., & Tsamboulas, D. (2010). The gravity model specification for modeling international trade flows and free trade agreement effects: a 10-year review of empirical studies. The open economics journal, 3(1).

Kien, N. T. (2009). Gravity model by panel data approach: an empirical application with implications for the ASEAN free trade area. ASEAN Economic Bulletin, 26(3), 266-277.

Krugman, P. R. (1979). Increasing returns, monopolistic competition, and international trade. *Journal of international Economics*, *9*(4), 469-479.

Krugman, P. (1980). Scale economies, product differentiation, and the pattern of trade. *The American Economic Review*, *70*(5), 950-959.

Krugman, P. R., & Obstefeld M. (2009). *International Economics: Theory and Policy*, 8th edition, Boston: Addison-Wesley 2009. ISBN 0-321-49304-4. Pg: 114-152

Krugman, P, R., Obstfeld, M. & Melitz, M, J. (2015). International Economics Theory and Policy, eighth edition. Pearson Education Limited. Pg:1

Laird, S. (1997). *WTO rules and good practice on export policy* (No. TPRD-97-01). WTO Staff Working Paper.

Malamud, A. (2005). Mercosur turns 15: Between rising rhetoric and declining achievement. *Cambridge Review of International Affairs*, *18*(3), 421-436.

Martínez-Zarzoso, I., & Nowak-Lehmann, F. (2003). Augmented gravity model: An empirical application to Mercosur-European Union trade flows. Journal of applied economics, 6(2), 291-316.

McPherson, M. A., Redfearn, M. R., & Tieslau, M. A. (2001). International trade and developing countries: an empirical investigation of the Linder hypothesis. Applied Economics, 33(5), 649-657.

Nottage, H 2018, *Trade in War's Darkest Hour: Churchill and Roosevelt's daring 1941 Atlantic Meeting that linked global economic cooperation to lasting peace and security*, World Trade Organization, accessed 11 May 2019, <https://www.wto.org/english/thewto_e/history_e/tradewardarkhour41_e.htm#>.

Rojid, S. (2006). COMESA trade potential: a gravity approach. Applied Economics Letters, 13(14), 947-951.

Rose, A, K. (2004). Do We Really Know That the WTO Increases Trade? The American Economic Review. Vol. 94. No.2. pp. 98-106

Smith, A (1776). The Wealth Of Nations, Book IV, Chapter IX, p. 687, para. 51.

Studenmund, A. H. 2011. *Using Econometrics: A Practical Guide* (6 ed). Boston: Addison-Wesley.

Stratfor July 31, 2017, *Trade profile: Mercosur Lets Its Guard Down Gradually*, accessed 2019-05-12, <https://worldview.stratfor.com/article/trade-profile-mercosur-lets-its-guard-down-gradually>

Worldtradelaw.net. n.d.,*MERCOSUR FREE TRADE AGREEMENT* (1991), Accessed 2019-03-02 <http://www.worldtradelaw.net/document.php?id=fta/agreements/mercosurfta.pdf >

World Trade Organization n.d., *UNDERSTANDING THE WTO: THE ORGANIZATION*, accessed 2019-05-12, <https://www.wto.org/english/thewto_e/whatis_e/tif_e/org6_e.htm>

World Bank. Last updated april 8,2019 . *The World Bank In Argentina.* Accessed 2019-05-05, <http://www.worldbank.org/en/country/argentina/overview>

World Bank. Last updated april 8, 2019. *The World Bank In Brazil*, Accessed 2019-05-05, <http://www.worldbank.org/en/country/brazil/overview>

World Bank. Last updated april 16, 2019. *The World Bank In Paraguay.* Accessed 2019-05-05 <http://www.worldbank.org/en/country/paraguay/overview>

World Bank. Last updated april 9, 2019. *The World Bank In Uruguay.* Accessed 2019-05-05 <https://www.worldbank.org/en/country/uruguay/overview>