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The Impacts of Free Trade Agreements on Economies - the Case of MERCOSUR

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Abstract (Deutsch)

Ziel der vorliegenden Arbeit ist es herauszufinden, welche Auswirkungen Freihandelsabkommen auf die Ökonomien von Ländern haben.

Für die Recherche wird das südamerikanische Freihandelsabkommen MERCOSUR herangezogen. Nach einem Überblick über wichtige und relevante Theorie zum Thema internationaler Handel und Freihandelsabkommen sollen Antworten zu folgenden Fragen gefunden werden. Erhöht sich das Handelsvolumen nach Einführung eines Freihandelsabkommens? Wie entwickeln sich andere ökonomische Variablen und in wie weit können diese Entwicklungen durch das Handelsvolumen erklärt werden? Welche Variablen beeinflussen das Bruttoinlandsprodukt eines Landes und ist das Handelsvolumen einer der beeinflussenden Faktoren? Um diese Fragen zu beantworten werden Daten der Mitgliedsstaaten von MERCOSUR gesammelt, ausgewertet und grafisch dargestellt. Weiterhin wird die Beziehung zwischen den Variablen und dem Handelsvolumen ermittelt. Des Weiteren wird ein Modell zur Erklärung des BIP entwickelt. Die primären Ergebnisse der Recherche sind, dass Exporte und Importe sowie folglich das Handelsvolumen in allen MERCOSUR Staaten angestiegen sind. Zusätzlich haben sich BIP und BIP per Capita erhöht, während Arbeitslosigkeit und Inflation abgenommen haben. Die Entwicklung von Konsum und Produktivität ist nicht eindeutig. Das Handelsvolumen scheint im Fall MERCOSUR signifikanten Einfluss auf das BIP und BIP per Capita zu haben, während der Effekt auf die anderen Variablen weniger signifikant ist. Von den untersuchten Variablen sind die Variablen Importe, Exporte und Arbeitslosigkeit die, die das BIP am signifikantesten beeinflussen und somit im Modell enthalten sind. Während Importe und Arbeitslosigkeit einen negativen Einfluss haben, beeinflussen die Exporte das BIP positiv.

Abstract (English)

The objective of this study is to find out, how free trade agreements impact economies. For the research, the case of the South American trade agreement MERCOSUR will be analyzed. After a review of important and relevant theory concerning international trade and free trade agreements, answers to the following questions will be found. Is the trade volume increasing after introduction of a free trade agreement? How do other economic variables develop and how much of these developments can be explained by the trading volume? What variables do affect the GDP of an economy and is the trade volume an influencing factor? In order to answer these questions, economic data of the members of the MERCOSUR will be collected, evaluated and visualized graphically. Additionally the relationship between these fundamentals and the trading volume will be estimated. Furthermore a model to explain the GDP will be developed. The primary findings of the research are that exports as well as imports and thus the total trading volume have increased in all the MERCOSUR member countries. Furthermore GDP and GDP per Capita grew, while unemployment and inflation decreased. The development of consumption and productivity is ambiguous. The total trade volume in case of MERCOSUR seems to have a significant influence on GDP and GDP per Capita, while the effect on the other variables is less significant. From the examined variables, the variables imports, exports and unemployment are the ones that significantly influence the growth of GDP and thus are included in the developed model. While imports and unemployment have a negative influence, exports are affecting the GDP positively.

Declaration of Authorship

I hereby declare that the thesis submitted and the work presented in it is entirely my own. All direct or indirect sources used, including graphs and data sets, are acknowledged as references.

This thesis was not previously presented to another examination board and has not been published.

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Eidesstattliche Erklärung

Hiermit erkläre ich an Eides statt, dass die eingereichte Thesis und die darin dargestellte Arbeit vollkommen meine eigene ist. Alle direkt oder indirekt zitierten Quellen, inklusive Grafiken und Daten, sind als Referenzen gekennzeichnet.

Diese Thesis wurde weder einer anderen Prüfungsbehörde vorgelegt noch veröffentlicht.

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List of Abbreviations

AFTA	ASEAN Free Trade Area
APTA	Asian-Pacific Trade Agreement
ARGM	Alto Representante General de MERCOSUR (High General Representative of MERCOSUR)
ASEAN	Association of Southeast Asian Nations
CAN	Comunidad Andina (Andean Community of Nations)
CCM	Comisión de Comercio (Trade Commission)
CEPT	Common Effective Preferential Tariff
CMC	Consejo del Mercado Común (Common Market Council)
EAEU	Eurasion Economic Union
EEC	European Economic Community
EFTA	European Free Trade Area
EU	European Union
FOCEM	Fondo para la Convergencia Estructural del MERCOSUR (Fund for Structural Convergence of MERCOSUR)
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
GMC	Grupo Mercado Común (Common Market Group)
IPPDH	Instituto de Políticas Públicas en Derechos Humanos (Institute of Policy Public Human Rights)
ISM	Instituto Social del MERCOSUR (MERCOSUR Social Institute)
MERCOSUR	Mercado Común del Sur
MFN	Most Favored Nation
NAFTA	North American Free Trade Agreement
PARLASUR	Parlamento del MERCOSUR (MERCOSUR Parliament),
PTA	Preferential Trading Agreement
RTA	Regional Trading Agreements
SADC	South African Development Community
SM	Secretaría del MERCOSUR (Secretariat of MERCOSUR)
TPR	Tribunal Permanente de Revisión (Permanent Review Tribunal)
UPS	Unidad de Apoyo a la Participación Social (support unit for social participation)

| UNASUR | Unión de Naciones Suramericanas (Union of South American Nations) |
| WTO | World Trade Organization |

1 Introduction

In the following research the impacts of free trade agreements on economies will be presented and analyzed.

In a globalizing world where nations are increasingly integrated, international trade has become a highly important subject for countries to deal with. Especially governments face a variety of questions when it comes to how to handle international trade relations. Among the most important issues are the decisions whether to grant domestic companies the possibility to export and import as much as they want or to put restrictions on the volume of goods and services companies are allowed to trade, up until the point of completely prohibiting international trade relations. Furthermore governments face the decision, whether to pursue one single strategy concerning the subject or to distinguish and apply different strategies with different trading partners. In order to make these decisions, the question what are the impacts and outcomes of the various choices becomes crucial.

After settling for either free trade of restrictive trade, the governments face further decisions. When selecting a restrictive trade approach, there are a broad variety of further strategies and instruments to choose from in order to implement it. Similarly there are further decisions to make, when choosing a free trade strategy. One possible option is to choose to negotiate a free trade agreement with one or more trading partners.

The economic impacts of such agreements are subject to controversial discussions among economists, politicians and the public. Generally there are two points of view. On the one side there are the advocates of free trade that promote that there are many positive effects on the economy, whereas on the other side the critics express their doubts about the claimed influences of free trade on the development of economic variables. In fact, many studies concerning the topic of free trade agreements have been published, however, the results and opinions of the authors differ widely.

The objective of this research is to find out, what possible impacts of free trade agreements are suggested from economic theory and furthermore to confirm or disconfirm the theory for the example of the South American free trade area

MERCOSUR.

Specifically, the following questions are aimed to be answered at the end of this study. What are the advantages of a free trade agreement from an economical point of view? Is the trade volume increasing after introduction of a free trade agreement? How do important economic variables develop? Is the economy growing? Are unemployment and inflation decreasing? Do economic welfare that is standard of living, and consequently consumption increase? How much of the development of these variables can be explained by the change of the trading volume? What economic variables can explain the growth of the gross domestic product and is the trade volume, i.e. a countries´ exports and imports, one of these variables?

To answer these questions in a first step relevant literature will be analyzed in order to understand international trade and to find out, what impacts of free trade are suggested in theory. Additionally, already existing researches and studies of other authors as well as their results will be mentioned. Later on, data of economic variables published by the worldbank will be collected for the member countries of MERCOSUR. For the analysis, the data will be depicted graphically. Furthermore, the relationship between the trade volume and the economic variables will be determined. Moreover a model will be developed in order to find out, what variables explain the growth of the gross domestic product and whether the influence is positive or negative.

The analysis is structured as follows. After this short introduction in the first chapter, in the second chapter, the most important and relevant theory concerning international trade will be reviewed. Therefore, terms and concepts are introduced and defined as well as models to explain international trade and gains and welfare effects of trade are described. Moreover, different government policies to restrict trade and their effects are analyzed. Furthermore arguments for restricting trade are examined. In Addition, trade policy related to developing countries as well as trade policy and national welfare effects will be reviewed. Additionally theory concerning free trade is examined. Specifically, arguments for free trade and different types of free trade agreements are explained. Also free trade agreements and their connection to the world trade organization are described in the second chapter as well as theoretical impacts of free trade on unemployment and growth are presented. To strengthen or

disapprove the theoretical arguments and facts, it will be referred to results of existing empirical studies and researches whenever possible. Afterwards in chapter three, the largest and most popular trade agreements in the world will be shortly presented, focusing on the free trade area MERCOSUR in South America that will in the following chapter be subject to the analysis. In the fourth chapter, after selecting and defining variables to be analyzed, collected economic data will be evaluated and visualized graphically. Furthermore the relationship between the analyzed variables will be examined. In Addition, in order to determine the impact of free trade on the economic growth of a country, a model to explain the change of the gross domestic product of the countries will be developed. Furthermore, also in the fourth chapter, the results of the research will be summarized and compared to the theory in order to confirm or reject the theoretical impacts of free trade agreements in the case of MERCOSUR. Finally, in the fifth chapter, all the results will be summarized and the previously mentioned questions will be answered.

2 Theory of international Trade

In this chapter, after defining important terms and explaining some basics of international trade, an overview of the most popular models to explain the causes of trade, the gains and welfare effects of trade as well as the concepts of open and closed economies will be described. Furthermore trade policies between which a country can choose will be presented. In order to do that, different policy instruments, their impacts and arguments for restricted trade will be shown. In contrast, in the next subchapter the arguments for free trade will be explained and various types of trade agreements will be differentiated and further analyzed. Finally impacts of free trade on growth and unemployment will be presented.

2.1 Definitions and Basics of international Trade

The term international economics can be divided into international trade and international monetary economics. In international trade studies, the focus lies on real transactions in the economy. These are transactions that initiate physical movement of goods or a tangible engagement of economic resources. In contrast, the field of international monetary economics covers the monetary part, i.e. financial transactions, in international economics. In reality the distinction between the two fields is difficult, since a lot of financial transactions are related to international trade and changes in monetary economics have important effects on trade. However, in theory it makes sense to make this division.[1] In the following analysis the focus is put on international trade.

A key role in understanding the gains from trade plays the concept of comparative advantage. There are two ways of defining an advantage in producing a good. First there is the absolute advantage, which states, that the producer who needs a smaller amount of input has the advantage in producing the good. Another way, however, to define who has an advantage in producing a good, is to look at the opportunity cost rather that the absolute costs. The opportunity cost is the tradeoff producers' face, that is, how many of one good has to be given up to produce another. The producer with the lower opportunity cost has the comparative advantage in producing that good. The following example can be used to further illustrate the concept. Therefore the simplified situation of a world with two products, meat and coffee, and two producers, the countries of Argentina and Brazil, is assumed, where both would like to

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[1] Cf. Krugman, Obstfeld and Melitz, 2010, p.8.

consume both goods. If they divide their time of 40 hours overall equally for producing the two goods, that is spending 20 hour on each good, they can produce the following outcome.[2]

Production Outcome without Trade		
	Hours needed per pound	Production and Consumption
Brazil	20 hours for meat 10 hours for coffee	1 pound meat 2 pounds coffee
Argentina	1 hour for meat 8 hours for coffee	20 pounds meat 2 1/2 pounds coffee

Table 1: Production Outcome without Trade[3]

If Brazil and Argentina, however, specialize in the production of the good they can produce more efficient and then trade, they can consume more of both goods without spending more hours working, as the following table shows.[4]

Production Outcome and Gains with Trade			
	Production	Trade	Consumption
Brazil	0 pounds meat 4 pounds coffee	gets 3 pounds of meat gives 1 pound of coffee	3 pounds meat 3 pounds coffee
Argentina	24 pounds meat 2 pounds coffee	gives 3 pounds of meat gets 1 pound of coffee	21 pounds meat 3 pounds coffee

Table 2: Production Outcome and Gains with Trade[5]

The example shows, that even though Argentina needs less time for both goods, i.e. it has an absolute advantage in producing both goods, both producers gain from trade. This can be explained with the concept of comparative advantage and opportunity cost, shown in the following table.[6]

Opportunity Costs of Production		
	1 Pound of Meat	1 Pound of Coffee
Brazil	2 pounds of coffee	1/2 pound of meat
Argentina	1/8 pounds of coffee	8 pounds of meat

Table 3: Opportunity Costs of Production[7]

The table shows, that Brazil has the lower opportunity cost in producing coffee and thus a comparative advantage, whereas Argentina has the lower opportunity cost and thus a comparative advantage in producing meat. It is important to notice, that it is not possible to have a comparative advantage in both goods, since the opportunity

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[2] Cf. Mankiw, 2011, p.48-54.

[3] Based on: Mankiw, 2011, p.52.

[4] Cf. Mankiw, 2011, p.52.

[5] Based on: Mankiw, 2011, p.52.

[6] Cf. Mankiw, 2011, p.53-54.

[7] Based on: Mankiw, 2011, p.54.

cost of one good is the inverse of the opportunity cost of the other. As long as both have different opportunity cost, both will have a comparative advantage in either one of the goods and thus trade will be beneficial in the way that total production in the economy increases and this rise in economic output can make everybody better off.[8]

The concept shows, that what a country produces and exports is defined by productivity, not by for example low wages. A country with high wages will specialize in producing and exporting the good, which requires high-skilled workers, because there they have the comparative advantage. When looking at the countries with the larges exports in the world, not low wage, but high wage countries are in front.[9]

It is important to emphasize, that for international trade the wages of a country and thus its level of general productivity are not important. High productivity means high wages and vice versa, however, what is important for trade is that different industries within a country differ in their productivity that is their productivity is above or below average. Higher productivity, while paying the competitive market wage, causes lower relative costs and thus makes the industry competitive in world markets. This is the underlying principle of international trade.[10]

Furthermore trade allows countries to specialize in goods, that to be produced need largely the resources that the country is abundantly supplied with and later trade a part of them for goods that are produced mainly with resources that are scarce in the country. This specialization is additionally beneficial considering economies of scale through production of larger amounts of one good.[11] The effect of economies of scale can be a cause of trade itself that is that a country prefers specialization because of lower costs per unit of output. Economies of scale can be differentiated into external, depending on the size of the industry, or internal, depending on the size of the firm.[12]

Next to these tangible effects of trade there are intangible effects, which are international migration and international lending and borrowing as well as diversification of

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[8] CF. Mankiw, 2011, p.54.

[9] Cf. Gould, Ruffin, Woodbridge, 1993, p.8.

[10] Cf. Gould, Ruffin, Woodbridge, 1993, p.2.

[11] Cf. Krugman, Obstfeld and Melitz, 2010, p.4.

[12] Cf. Krugman, Obstfeld and Melitz, 2010, p.152.

wealth through international exchange of financial assets.[13]

2.2 Causes and Models of international Trade

In this chapter the main characteristics and key conclusions of the most important models to explain international trade are presented.

First there is the so called gravity model. It does not explain the causes of trade, it merely states, and that the volume of trade between two countries is associated to the size of their economies. Additionally it exposes the strong negative influence of distance and international borders on trade.[14]

The simplest model to explain international trade is the Ricardian Model. It uses only one factor of production, which is labor productivity, as the only difference between two countries and thus as the cause of trade. According to the model, a country will export goods it has a comparative advantage in and import goods, that it produces relatively inefficient.[15]

Another model is the specific factors model, with which effects on the distribution of income caused by international trade can be analyzed. The specific factors model distinguishes between general and specific factors, where the first can move between sectors, while the latter are specific to special uses. Furthermore, differences in resources result in different relative supply curves, which in turn are the cause of international trade. The model states that factors specific to the import sector lose, whereas factors specific to the export sector gain from trade. The general factors either gain or lose. However, trade in overall considered to be beneficial, because in theory, the gains could compensate the losses.[16]

The Heckscher-Ohlin model can be used to explain trade, caused by different resources in different economies. The model is based on the production of two goods, which need two factors of production, i.e. capital and labor, to be established. The two products have different factor intensities. Countries will produce more of the good that uses more intensively the factor, that a country is abundantly supplied with.

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[13] Cf. Krugman, Obstfeld and Melitz, 2010, p.4.

[14] Cf. Krugman, Obstfeld and Melitz, 2010, p.21.

[15] Cf. Krugman, Obstfeld and Melitz, 2010, p.47.

[16] Cf. Krugman, Obstfeld and Melitz, 2010, p.73.

Eventually it will export the excess that is not consumed domestically. Even though only the owners of the abundant factor gain from trade, trade is overall considered beneficial. The Heckscher-Ohlin model in summary is good to analyze trade between developed and developing countries, however, only differences in resources cannot alone explain world trade and factor prices.[17]

The Standard Trade Model is a general model to analyze developments in the world economy, whereas the previously describes models are more special cases, focusing on details of the supply side of an economy. In the model a world supply and a world demand curve define through their intersection the terms of trade of a country, the price of exports relative to imports. Other things equal, there is a positive relationship between countries´ terms of trade and its welfare. Economic growth changes the terms of trade, either positive or negative, depending whether the growth is export-biased or import-biased. Export-biased growth deteriorates the terms of trade through decreasing prices of the exported goods, whereas import-biased growth improves them through cheaper imported goods, both due to increased supply. An increase of the terms of trade results in an even greater domestic growth and harms the growth of other countries. In turn, a decrease of the terms of trade has a negative impact and offsets the domestic growth and is beneficial for other countries.[18]

In Summary, the intentions and factors that cause international trade are differences in technology or endowments, economies of scale in production, access to a broader variety of goods, increase competition and reduce monopoly power, increase productivity and stimulate economic growth.[19]

As shown in the previous chapters, a country will gain from trade if it specializes in the production of the good it has a comparative advantage in. Comparative advantage in theory is based on either technology differences as described in the Ricardian model or on differences in factor endowments, described by the Heckscher-Ohlin model. The Ricardian model uses assumptions to strongly simplify the world. In reality where various countries trade various goods and trade barriers are existing, the model cannot predict trade accurately though. However, even though the situa-

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[17] Cf. Krugman, Obstfeld and Melitz, 2010, p.104.

[18] Cf. Krugman, Obstfeld and Melitz, 2010, p.112, 130.

[19] Cf. World Trade Organization, 2008, p.27.

tion is much more complex in reality, the comparative advantage theorem remains valid. Evidence shows, that usually the interplay of several different factors explains the pattern of international trade. The concept of comparative advantage is well applicable when explaining trade between industries and countries that show different characteristics, whereas trade between similar industries and countries can better be explained by the concepts of economies of scale and product differentiation. Actually for most of developed as well as developing countries, the latter type makes up more than half of the trade flows and it can be used to explain trade between industrialized nations very well. In contrast, the concept of comparative advantage is better when explaining the trade between developed countries and emerging economies.[20]

A study from Bernhofen and Braun published in 2005 examines the trade liberalization of Japan. In confirms, that Japans trading pattern was determined by comparative advantage. Furthermore they estimated that the liberalization led to an increase in real income by eight to nine percent of GDP. These results provide strong empirical evidence for the theory.[21]

There are several studies examining the empirical validity of the Heckscher-Ohlin model. The majority of them, however, used inappropriate methods, which makes their results largely irrelevant. More recent studies, using appropriate methods and including important factors, show that there in fact is a substantial effect of relative factor abundance on the goods that are traded.[22]

2.3 Gains and Welfare Effects from Trade

In an economy without international trade, the equilibrium price in the market is defined only by domestic producers and consumers and the amount of goods they produce and demand. The total benefits in this economy consist of the consumer surplus, which is the difference of a buyer's willingness to pay to what he actually pays, and the producer surplus, the difference between the production cost and price the product is eventually sold for.[23] This equilibrium is graphically depicted in figure 23 in the appendix.

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[20] Cf. World Trade Organization, 2008, p.xiv-xvi.

[21] Cf. World Trade Organization, 2008, p.35; Bernhofen, 2005.

[22] Cf World Trade Organization, 2008, p. 35.

[23] Cf. Mankiw, 2011, p.143, 148, 180.

By comparing the price of a good in a closed economy with the price of the same good, that prevails outside of this economy, the so called world price, it can be defined, whether or not the closed economy would benefit from participating in trade. A price lower than the world price means lower cost of production and thus to have a comparative advantage relative to other countries. As a result, the domestic producers would start exporting if the world price is higher, whereas if the world price is lower, the economy would start importing the good once trade in allowed. The welfare effects of participating in international trade are analyzed in the scenario of a small economy, whose trade policy is not affecting the world price. This assumption makes the evaluation of gains and losses from international trade simpler, however being able to transfer the basic results to the more difficult case of a larger economy.[24]

First, the case that the domestic economy becomes an exporter after opening up to trade is considered. This case is also depicted graphically in figure 24 in the appendix. The price of a good before trade is below the world price and thus, as stated above, the domestic producers become exporters once trade is allowed and will sell for the world price. On the one hand producers can sell for a higher price and thus increase profit, while consumers have to pay more than before and thus can consume less. However, the gains from trade more than offset the losses and thus make trade overall beneficial.[25]

The second case to be considered is that the domestic economy becomes an importer after opening up to trade. Also this case is shown graphically in figure 25 in the appendix. The price of a good before trade is above the world price and thus, the country becomes an importer once trade is allowed. The domestic price will decrease, because the consumers will not pay more than the world price. On the one hand producers have to sell for a lower price and thus have lower profits, while consumers pay less than before and thus can consume more. This again shows that the gains from trade, though this time on the side of consumers, more than offset the losses and thus make trade overall beneficial.[26]

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[24] Cf. Mankiw, 2011, p.181-182.

[25] Cf. Mankiw, 2011, p.182-184.

[26] Cf. Mankiw, 2011, p.184-186.

2.4 Open and Closed Economy

To simplify the world in order to make problems easier to be analyzed, often the assumption of an economy that does not interact with others, so called closed economy, is made. In reality, however, economies interact with each other. So called open economies raise certain issues concerning Exports, Imports, trade balance, etc.

The trade balance and thus exports and imports of a country are influenced by the preference of consumers for foreign and domestic goods as well as their prices, the exchange rate between domestic and foreign currency, the income of people home and abroad, the transportation costs and international trade policies of the government.[27]

A common misconception about the trade balance is that exports are considered good because they improve the trade balance, whereas imports are considered bad because they worsen the trade balance. However, looking at international trade from the perspective of consumption, the goods a country can consume equal the domestic production plus the imports minus the exports. Hence, imports are good, because they increase consumption possibilities for consumers. This explanation is based on the concept of terms of trade that are, as previously explained, defined as the price of exports relative to imports. The larger the terms of trade the better for a country.[28]

In contrast, also exporting more than importing can in the long run become a problem for a country. Constant trade balance surpluses suggest that a country neglects domestic investments. Furthermore there arises a country risk, since the surplus is inevitably invested abroad.[29]

Next to the net exports or trade balance there is the net foreign investment that is the difference of the purchase of foreign assets by domestic residents and the purchase of domestic assets by foreigners. The net foreign investment is part of the financial markets and thus belongs to the international monetary analysis. However, it is necessary to be briefly mentioned here in order to explain in the following the relationship and interaction between the market for goods and services and the financial

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[27] Cf. Mankiw, 2011, p.658-659, 676.

[28] Cf. Gould, Ruffin, Woodbridge, 1993, p.4-5.

[29] Cf. Kaelble, Pache, 2014, p.71.

market. The two measures net exports and net foreign investment both represent imbalances which, for an economy as a whole, have to offset each other. The amount of money paid equals the value of the good or service.[30] This system is called the balance of payments accounts, where every international transaction is booked twice, once as a credit and once as a debit position. The balance of payments can be unbalanced due to official foreign exchange interventions by the domestic central bank in order to alter the circulating money in the economy. The central bank can either sell foreign exchange reserves to increase the amount of domestic currency in circulation and thus cause a deficit of the balance of payments, or cause a surplus by doing the opposite.[31]

Additionally to the quantity variables, also variables concerning the prices of international transactions can be analyzed by defining exchange rates. The nominal exchange rate is defined as the rate at which domestic currency can be exchanged to foreign currency, whereas the real exchange rate is the rate at which domestic goods and services for goods and services abroad. The nominal exchange rate can appreciate or depreciate, that is the exchange rate changes and one unit of the domestic currency can buy more or less of a foreign currency respectively.[32]

Auboin and Ruta found in their study about the relationship of exchange rates and international trade, that the exchange rate volatility has a negative impact on trade. The intensity of the effect depends on factors like hedging instruments, the production structure, i.e. the proportion of small and large firms, as well as the degree of economic integration between trading partners.[33]

Many times, restrictive trade policies as they will be analyzed in the following chapter, are justified as an instrument to change the trade balance, however, considering the knowledge and theory of this chapter, this is not necessarily true. Trade restrictions, such as a tariff, usually reduce imports and thus increase net exports. In turn, the demand for domestic currency in the foreign exchange market increases and causes the exchange rate to appreciate. As a result, domestic goods are more expensive

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[30] Cf. Mankiw, 2011, p.661-663.

[31] Cf. Krugman, Obstfeld and Melitz, 2010, p.306-307, 317.

[32] Cf. Mankiw, 2011, p.668-669, 676.

[33] Cf. Auboin and Ruta, 2011, p.1.

relative to foreign goods and thus the initial impact on net exports will be offset.[34]

2.5 Trade Policy

In this chapter different types of trade policy instruments will be described and arguments for restricting trade will be presented. Furthermore trade policy will be viewed in the context of developing countries as well as national welfare.

2.5.1 Trade Policy Instruments

Through international trade certain groups within an economy can be harmed because of the impacts on income distribution. This is the reason why governments face the decision whether to protect certain industries by imposing protectionist policies or allow free international trade without restrictions.[35]

There are various different trade policies a government can apply when dealing with international trade, among others the most important are taxes or subsidies on some international transactions and legal restraints on value or amount of different imports.[36] In the following, the most important trade policies and their impacts on the economy are described more detailed.

2.5.1.1 Tariffs

The most simple trade policy, the import tariff, is a tax on imported good, which can either be levied as a fixed amount per imported good or as a percentage of the value of the imported good. Tariffs have two functions. First they increase the costs of an imported product and thus can be used to protect domestic industries from cheaper goods abroad. Additionally they provide a source of income for the government.[37] The effects of a tariff are shown graphically in figure 26 in the appendix.

The effect of the tariff is that the imports are reduced, because a higher price leads the domestic demand for the good to decrease and the domestic supply to increase. The increased price raises the profits of sellers and increases the costs for consumers. After introduction of a tariff, the consumer surplus is reduced, while the producer surplus increases. Additionally with the revenue raised by the government appears a third party that also gains from imposing a tariff. The overall surplus, however, is re-

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[34] Cf. Krugman, Obstfeld and Melitz, 2010, p.695.

[35] Cf. Krugman, Obstfeld and Melitz, 2010, p.4-5.

[36] Cf. Krugman, Obstfeld and Melitz, 2010, p.192.

[37] Cf. Krugman, Obstfeld and Melitz, 2010, p.193.

duced, represented by the deadweight loss arising from the tariff.[38]

The so called deadweight loss is the decrease in the total surplus, caused from a market distortion. The distortion in this case is the tariff that affects the market like a kind of tax. It leads the market to move away from its optimum that is the resources are not allocated in their most efficient way. This is due to the increased production and decreased consumption, both caused by the higher price.[39]

2.5.1.2 Import Quotas

When the domestic price is above the world price, the country imports as much as possible and as a result, the total supply equals the domestic supply plus the allowed quantity of imports. Due to an import quota, the price of the good rises above the world price up to the point of the new equilibrium of domestic total supply and domestic demand. The higher price causes the domestic supply to increase and the demand to decrease. After introducing the import quota, the consumer surplus is reduced, while the producer surplus increases. The importers of the good make a surplus, as already stated due to the price difference. The total surplus is reduced, again by the so called deadweight loss.[40] The effects of an import quota are depicted graphically in figure 27 in the appendix.

In their key impacts on the economy, import quotas and tariffs are similar. However, there is one difference that is a tariff generates revenue for the government, whereas an import quota increases the welfare of companies that can import the goods.[41]

2.5.1.3 Export Restraints and Subsidies

Economically an export restraint has the same impact as an import quota. The only difference is that the quota is imposed, on a voluntary basis, by the exporting country instead of the importing country. Usually these voluntary restraints are proposed by the importing country and agreed to by the exporting country in order to avoid more extensive trade restrictions.[42]

An export subsidy is defined as a payment, made to the exporting company. Like a

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[38] Cf. Mankiw, 2011, p.186-188.

[39] Cf. Mankiw, 2011, p.165, 189.

[40] Cf. Mankiw, 2011, p.189-190.

[41] Cf. Mankiw, 2011, p.189-191.

[42] Cf. Krugman, Obstfeld and Melitz, 2010, p.208.

tariff, it can be either a fixed amount or a percentage of the exported value.[43] Export subsidies can take the form of direct payments or they can be distributed indirectly by tax rebates, subsidized loans to foreign purchasers, insurance guarantees, funding for research and development, guarantees against losses or subsidized loans. The subsidies allow the exporting companies to charge a lower price, increase the market share of the company and thus increase the production. The cost of increasing the production are higher that the gains through additional sales, because of the artificially low price. The domestic price for these exported goods increases, because producers focus on the sales abroad. Furthermore consumers suffer from higher or additional taxes levied by the government to finance the export subsidies.[44] The effects of an export subsidy are also shown graphically in the figure 28 in the appendix.

As already stated, the domestic price increases, whereas the price in the importing country decreases. In the exporting country, the producers gain, while consumers and the government lose and overall welfare decreases.[45]

Due to the many different forms, the determination of export subsidies is sometimes ambiguous. Domestic industries frequently take advantage of this in order to justify their demands for tariffs and eventually governments have to decide, whether to interpret a foreign policy as an export subsidy or not. The imposing of a tariff offsets the effect of an export subsidy by raising the artificially low price in the international market. This retaliation is called countervailing duty.[46]

2.5.1.4 Summary and Others

The following Table shows a summary of the effects of the four most important trade policies.

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[43] Cf. Krugman, Obstfeld and Melitz, 2010, p.203.

[44] Cf. Husted, Melvin, 2001, p.192.

[45] Cf. Krugman, Obstfeld and Melitz, 2010, p.204.

[46] Cf. Husted, Melvin, 2001, p.192-193.

Summary of the Effects of Trade Policy Instruments				
	Producer Surplus	**Consumer Surplus**	**Government Revenue**	**Total domestic Welfare**
Tariff	Increase	Decrease	Increase	ambiguous (falls for small country)
Import Quota	Increase	Decrease	No Change	ambiguous (falls for small country)
Export Restraint	Increase	Decrease	No Change	Decrease
Export Subsidy	Increase	Decrease	Decrease	Decrease

Table 4: Summary of the Effects of Trade Policy Instruments[47]

Additionally to the mentioned policies above, the following instruments exist to influence international trade. There are local content requirements, export credit subsidies, national procurement and Red-tape barriers.[48] Furthermore, there are export duties, financial donations, under the condition, that the financial aid has to be spent on products produced by the donor, advanced-deposit requirements for importers, border tax adjustments and trade embargos.[49]

2.5.2 Arguments for restricting Trade

In the following, the main arguments of trade restrictions and their opposite positions are analyzed.

The so called Jobs-Argument that states, that free trade reduces the domestic jobs. When the domestic price is higher than the world price, free trade leads to a decrease in the domestic price and in turn to a decrease of production and thus fewer jobs in a certain industry. However, trade also creates jobs, because when buying products, domestic resources, i.e. money, move abroad and in turn the foreign country can use these to buy goods that the domestic economy produces.

According to the Infant Industry Argument, new industries need a certain period of time to establish themselves in the business and to be competitive. The same argument goes for older industries that are recovering from a crisis and need to perform changes. In practice, however, such a protection policy is hard to implement, because not only is it difficult to select an industry that deserves protection, but also it is hard to remove the protection later on. To choose the industries, it has to be considered whether the future benefits are worth the current costs for the consumers. Also often the protection goes to those industries that have powerful influence and con-

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[47] Based on: Krugman, Obstfeld and Melitz, 2010, p.211.

[48] Cf. Krugman, Obstfeld and Melitz, 2010, p.211.

[49] Gandolfo, 2008, p.165, 173-175.

nections to policy makers. Besides, a lot of examples confirm that companies can cope with current losses in order to grow and obtain profits in the future.

The argument of unfair Competition states, that the rules and laws in two countries that engage in trade should be the same in order to have a fair competition. However, it is argued that if a foreign country subsidizes an industry by for example giving them tax advantages, in turn domestic consumers benefit from the lower price of their product in an amount that exceeds the losses for the domestic industry and thus makes trade overall beneficial.

Another argument is the protection as a strategy of bargaining. That means, a country can threaten another country to impose a tariff on a certain product in order to have some leverage when going into negotiations. This way the country can convince its trading partner to remove its tariff on another good and as a result have made trade even freer. If the trading partner cannot be convinced by the threat, however, the country faces the choice of either implementing the trade restriction and thus reduce national welfare or not implementing it and thus damaging its international reputation.[50]

Additionally to the almost exclusively economic arguments described previously, there are a number of arguments for restricting trade that are of non-economic nature. These are the arguments of national defense and national pride. Moreover protection can be motivated by foreign policy. Nowadays it is a common strategy to use economic means to gain political benefits and achieve a favorable position in negotiations.[51]

2.5.3 Trade Policy in developing Countries

Concerning trade policy, there is one important difference between developed and developing countries. The policy of the latter is designed to promote industrialization and improving the uneven development of the domestic economy. This so called import-substituting industrialization policy has been justified by using the previously described infant industry argument. The aim of this policy was to restrict imports to develop the production of manufactured goods. As many examples show, this policy truly has promoted the development of manufacturing, however, the expected economic growth and improved living standards have not been accomplished.[52]

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[50] Cf. Mankiw, (2011), p.193-195.

[51] Gandolfo, 2008, p.192.

[52] Cf. Krugman, Obstfeld and Melitz, 2010, p.268.

A survey by Noland and Pack of different studies on the effects of selective industrial policy interventions concludes that interventions of governments to supports specific export industries made a minor contribution to the growth in Asia. Empirical studies for Japan, the Republic of Korea and Chinese Taipei did not discover a relationship between interventions and productivity growth and trade performance. According to their survey, the growth in Asia was based on limited government deficits, low inflation and stable exchange rates. Those factors provided a good environment for saving and investment which in turn promoted growth, that moreover was export biased.[53]

In turn, Rodik in 2004 argues in his study, that the government intervention policies in some industries had an influence on the growth in Asia, even though there were also some examples were the policies had a negative influence. Lall in his research in 2002 also agrees that there was a positive influence of interventions in some industries. However, the results of policies were only successful, because of the previously described favorable environment. Also Chang in his study from 2002 finds evidence for the success of industrial promoting policies. He examined industrial, trade and technology policies of developed countries and states, that almost all of them used infant-industry and other protection policies in their early stages of development.[54]

Many countries changed their economic policy in the mid-1980s, creating a more liberal trade environment by removing restrictions. These changes resulted in a quickly growing trade volume, where especially the manufactured goods exported increased. However the effects on economic development have been mixed and thus remain unclear. The degree of how much of the economic growth of, for example many Asian countries, can be explained by liberal trade policies is subject of controversial discussions.[55]

Burfisher, Robinson and Thierfelder found in their research on the effects of the north American free trade agreement (NAFTA), that after the introduction of the agree-

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[53] Cf. World Trade Organization, 2006; Noland and Pack, 2003.

[54] Cf. World Trade Organization, 2006; Rodik, 2004; Lall, 2002, Chang, 2002.

[55] Cf. Krugman, Obstfeld and Melitz, 2010, p.268.

ment, trade of the United States with Mexico and Canada accelerated.[56] The following figure shows the real United States export index.
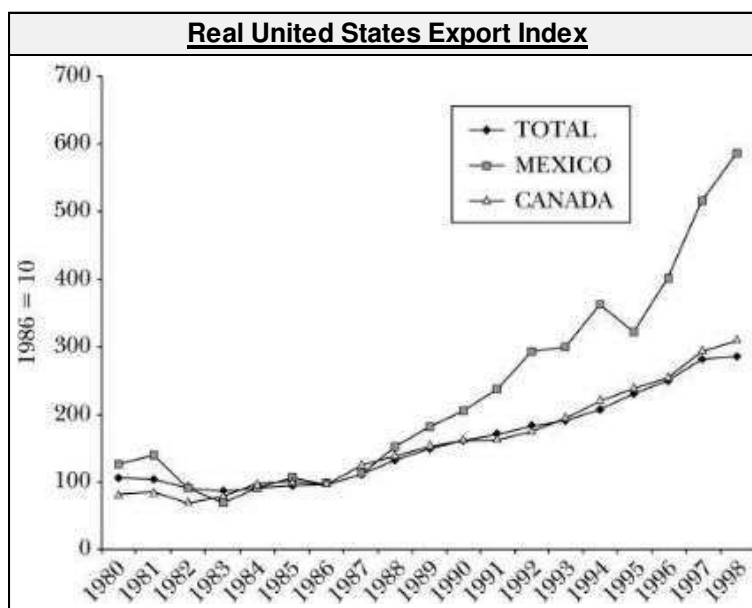
Figure 1: Real United States Export Index[57]

The figure shows, that the exports of the United States to Mexico have grown more rapidly than overall exports since the introduction of NAFTA. The acceleration of exports to Canada, however, is only moderate, due to the fact, that the two countries already had a trade agreement before.[58]

The following figure shows the real United States import index.

Figure 2: Real United States Import Index[59]

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[56] Cf. Burfisher, Robinson and Thierfelder, 2001, p.127.

[57] Burfisher, Robinson and Thierfelder, 2001, p.128.

[58] Cf. Burfisher, Robinson and Thierfelder, 2001, p.127.

[59] Burfisher, Robinson and Thierfelder, 2001, p.128.

The graphic shows the same development for the imports as previously of the exports. The imports of the United States from Mexico have grown more rapidly than overall imports since the introduction of NAFTA. The imports from Canada, however, only moderately accelerated, because the two countries already had a trade agreement before.[60]

There are various theoretical models about free trade and growth that deliver different outcomes. Several models suggest that free trade has a negative or at best no effect on the growth of a country. However, recent history, that is the post world war two periods, shows that free trade after all may cause greater growth.[61]

2.5.4 Trade Policy and national Welfare

According to the predominant opinion of economists, any interventions in international trade reduce national welfare. However, there are arguments, that in some cases protectionist trade policies can increase the welfare of a nation.[62]

The classic theory of free trade is based on the assumption of perfect competition, whereas new theories consider monopolistic competition and international oligopolies and focus on the importance of economies of scale, learning curves and innovation. Hence, there are arguments in favor of applying a protectionist policy in order to increase the national welfare at the expense of foreign countries.[63]

One Argument is known as the terms of trade argument and states, that when a large country can affect the foreign export prices, imposing a tariff leads to a decrease in the price of imports and thus leads to improved terms of trade for a country. In some cases, the benefits form improved terms of trade exceed the costs of trade restrictions and thus national welfare increases. This, however, is only true for large countries that can affect the prices of foreign exporters. As a result, at small tariff rates the benefits outbalance the cost up to a certain point, the optimum tariff.[64] The case of the optimum tariff is also depicted graphically and explained in figure 29 in the appendix.

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[60] Cf. Burfisher, Robinson and Thierfelder, 2001, p.127.

[61] Cf. Bhagwati, 2002, p.41-42.

[62] Cf. Krugman, Obstfeld and Melitz, 2010, p.224-225.

[63] Cf. Gould, Ruffin, Woodbridge, 1993, p.10.

[64] Cf. Krugman, Obstfeld and Melitz, 2010, p.224-225.

Similarly goes the argument for exports restrictions. Since export subsidies worsen the terms of trade and thus decrease national welfare, export restrictions in form of a tax that increases the price for exported goods abroad, would be the preferential policy. Clearly there is some truth to the terms of trade argument, however, in reality it is not useful, because first it does not apply to small countries that cannot affect the world price of their imports or exports. Moreover although it does apply for large countries, the use of this strategy implies increasing the own gains on the expense of other countries and that would at a certain point lead to retaliation.

Another argument is the one of domestic market failure. The argument states, that due to domestic market failures, consumer and especially producer surplus are not properly measured and thus the cost-benefit analysis is distorted. When a company is not able to capture a benefit of for example technological knowledge it cannot consider it when deciding about the amount to be produced. In that case there is a marginal social benefit to additional production that is not included in the producer surplus.[65] The case of the market failure argument is shown graphically in figure 30 in the appendix.

If a country imposes a tariff, the price of goods increases and in turn production increases, whereas consumption decreases, resulting in one production distortion respectively and an overall reduced welfare. However, the increased supply causes a social benefit that similarly to the argumentation with the optimum tariff exceeds the costs up until a certain point and thus increases the overall welfare of a nation.

The argumentation goes along with a more general concept in economics, the so called theory of the second best. It states, that government interventions that cause distortions in one market can offset market failures in other markets.

However, there are two lines of argumentation to disprove the market failure argument. First the corrections of market failures should deal with the source of the problem directly, because indirect policies will cause other distortions in other markets and hence are only second best solutions. Secondly it is argued, that it is not possible to evaluate and identify market failures well enough to prescribe a certain policy as a solution.[66]

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[65] Cf. Krugman, Obstfeld and Melitz, 2010, p.224-226.

[66] Cf. Krugman, Obstfeld and Melitz, 2010, p.226-227.

In Summary it can be stated, that the optimal policy only exists in theory due the facts, that first the assumption of foreign competitors not retaliating does not hold. Secondly policy decisions are influenced by political lobbying and thus do not represent the welfare maximizing policy composition for the entire country. Finally transforming the theoretical models into actual policy requires estimations of economic fundamentals like industry supply and demand that are difficult to determine accurately.[67]

2.6 Free Trade

After examining the policies to restrict trade, the case of free trade will be analyzed. Therefore arguments for free trade will be presented. Moreover different types of free trade agreements are explained. Also free trade agreements and their connection to the world trade organization are described in the third chapter as well as theoretical impacts of free trade on unemployment and growth are presented.

2.6.1 Arguments for Free Trade

One argument towards free trade is that the deadweight losses caused by the other trade policy instruments can be avoided. This is called the efficiency case for free trade and can be explained by reversing the cost-benefit analysis of a tariff.[68] This is shown graphically in figure 31 in the appendix.

Through the tariff, economic incentives of consumers and producers are distorted and thus cause losses for the economy. In turn, through free trade these distortions and losses are eliminated a national welfare rises. Additionally to this efficiency increase, there are further gains from assuming a free trade policy that go beyond the traditional cost-benefit analysis. The first of these gains are associated with economies of scale. Applying protectionist policy instruments on markets not only limits the gains from external economies of scale by constraining the concentration of industries but also cause an inefficient production in presence of internal economies of scale through reducing competition and raising profits, which in turn gives an incentive to new firms entering the market. These drawbacks can be prevented through allowing free Trade.[69] The benefits of economies of scale based on specialization will

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[67] Cf. Grossman, 1986, p.47-68.

[68] Cf. Krugman, Obstfeld and Melitz, 2010, p.220.

[69] Cf. Krugman, Obstfeld and Melitz, 2010, p.220-222.

eventually result in higher efficiency and lower prices for consumers. The effect is magnified in industries with high fixed costs or high investment level.[70]

Through the access to new markets, firms are able to increase production and thus decrease their average cost. However, several studies in developed as well as developing countries show significant decreases in price-over- cost margins, caused by decreasing prices through higher competition. In fact, increases in the scale of production do not seem to be a consequence of trade liberalization.[71]

Studies from Head and Ries from 1999 on Canadian firms as well as Roberts and Tybout from 1991 on companies from Chile and Colombia both concluded, that scale increases cannot be explained by the liberalized trade. These studies lead to the conclusion, that other factors explain the efficiency gains of companies, namely the reallocation of production to more productive companies.[72]

Several other studies from Harald 2007 as well as Krishna and Mitra (1998) and Harrison (1990) also discovered decreasing price-cost-rations as a result of increased competition.[73]

Another argument in favor of free trade is that it exposes companies to higher competition and thus gives them more incentives to increase research and innovation with the objective to outperform foreign competition and increase exports. Free trade increases the amount of firms with high productivity and thus raises the efficiency of an economy as a whole. However, it is difficult to quantify this kind of gain.[74]

As mentioned according to studies, productivity increases are caused by reallocation of production towards more productive plants rather than increased economies of scale.[75] The increased competition, however, will also force some companies to go out of business. Factors like resource endowments, market size and trade cost will

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[70] Cf. Pettinger, n.d..

[71] Cf. World Trade Organization, 2008, p.xvi.

[72] Cf. World Trade Organization, 2008, p.50; Roberts and Tybout, 1991; Head and Ries, 1999.

[73] Cf. World Trade Organization, 2008, p.49; Harald, 2007; Krishna and Mitra, 1998; Harrison, 1990.

[74] Cf. Krugman, Obstfeld and Melitz, 2010, p.220-222.

[75] Cf. World Trade Organization, 2008, p.xvi.

determine where the goods will be produced.[76]

The mentioned increase in competition through opening to trade raises the variety of goods consumers can choose from. According to two studies on the United States, such an increased product variety though increased imports from patterns of the North American free trade agreements as well as china led to an increase of real incomes of an average of three percent.[77] Broda and Weinstein in a study from 2004 computed the welfare gains for consumers to be three percent. Their calculation is based on the reduction in the overall price index due to a broader variety available. Furthermore they found evidence, that countries increase the variety of goods they export after liberalizing trade. Also Feenstra and Kee discovered in their research 2007 that the export variety increased more in liberalized sectors.[78]

In order to keep or even increase their market share, companies have to innovate in order to increase the quality of their products while keeping the prices low. A good example is the intensive competition in the technology industry, with companies being forced to invent innovative products at low cost to stay in the market.[79]

Additionally, the higher competition can lead to lower prices, due to lower monopoly power in some industries.[80] Through more liberal markets, the prices for telephone services in 1990 decreased by 4% in developing countries and 2% in developed countries. In China, prices even fell by 30% after a second telephone service provider entered the market.[81]

Furthermore, in presence of import quotas, companies tend to waist productive resources in order to receive a limited amount of import allowance from the government. Moreover, from a political point of view, it may be beneficial to apply a free trade policy instead of a protectionist policy, even though the latter one might be preferential to increase national welfare. However, by performing interventions in in-

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[76] Cf. World Trade Organization, 2008, p.xvi.

[77] Cf. World Trade Organization, 2008, p.xvi

[78] Cf. World Trade Organization, 2008, p.48; Broda and Weinstein, 2004; Feenstra and Lewis, 1994.

[79] Cf. Froning, 2000.

[80] Cf. Pettinger, n.d..

[81] Cf. World Trade Organization, 2008b, p.6.

ternational trade, government agencies might be influenced by politically influential sectors and consequently apply a policy that distributes income in favor of these sectors.[82] By usually being influenced by certain interest groups and thus are oriented to benefit these groups instead of maximizing national welfare, in practice, the costs caused by trade policies by far exceed the benefits and thus make free trade the preferential solution.[83]

Furthermore, protecting certain industries allocates the resources towards these industries. However those are not the industries the company has a comparative advantage in, if so, they would not need protection. Moreover protecting industries leads to the disappearance of incentives to innovate in order to be competitive and thus make their products inferior and costly.[84]

In summary it can be said, that costs from restricting trade, conventionally measured, are large, even larger when considering the additional benefits from free trade. Furthermore, attempts to apply different strategies, that are protectionist policies, will be subverted.[85]

As already accomplished before, free trade as well as restrictive trade are better than autarky. Furthermore it can be stated at this point, that free trade is more beneficial than restrictive trade. This is true for small countries that cannot influence the prevailing world price and also for large countries, assumed that there are many commodities and factors as well as different supply of factors.[86]

A study by Irwin from 2001 states, that the GDP of the United States fell by 5% in the period from 1807 to 1809 when they went from restrictive trade to nearly complete autarky. This, however, does not represent the complete cost of this move, since the situation did not start out from a free trade basis.[87]

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[82] Cf. Krugman, Obstfeld and Melitz, 2010, p.220-222.

[83] Cf. Krugman, Obstfeld and Melitz, 2010, p.234.

[84] Cf. Gould, Ruffin, Woodbridge, 1993, p.4.

[85] Cf. Krugman, Obstfeld and Melitz, 2010, p.220-222.

[86] Cf. World Trade Organization, 2008, p.27.

[87] Cf. World Trade Organization, 2008, p.35; Irwin, 2001.

2.6.2 Types of Trade Agreements

International agreements regarding the trade relations of countries can be divided in three groups, as shown in the following figure.
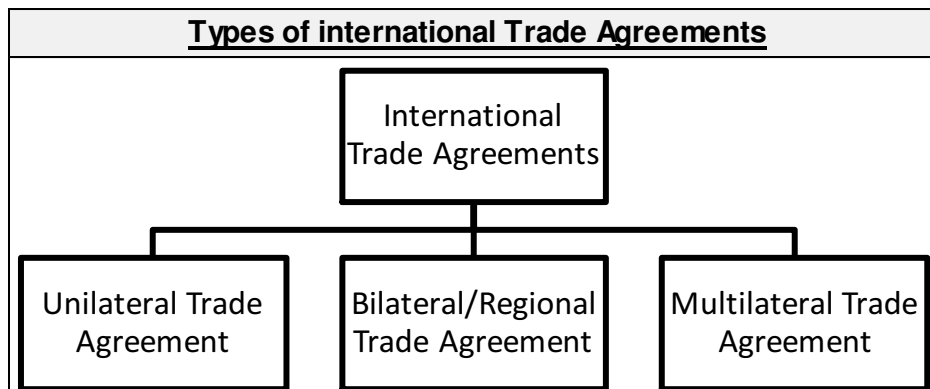
Figure 3: Types of international Trade Agreements[88]

First there are the unilateral free trade agreements that are called unilateral, because they involve only one country, individually removing all its trade restrictions, regardless of the current policy or possible reaction of its trading partners. The argumentation for this kind of policy is based on the general right of freedom that should not be restricted by governments. That is the freedom to trade and consume without restrictions.[89]

Moreover there are bilateral and regional trade agreements (RTA), sometimes referred to as preferential trade agreements (PTA). Bilateral agreements, as the name suggests, are negotiated between two countries, whereas regional trade agreements involve various countries within a certain region. Both agreements´ objectives are to lower and remove tariffs, quotas and other restrictions to trade. Preferential trade agreements can further be divided into different groups. Finally there are multilateral trade agreements that also involve various countries, however not limited to a certain region, but rather with a global character by removing trade barriers around the world and creating a consistent marketplace. Preferential and multilateral trade agreements will be explained in more detail in a later chapter.[90]

Compared to domestically based trade policy, internationally negotiated trade agreements are the easier and faster way to achieve freer trade. The two main rea-

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[88] Own creation.

[89] Cf. Brownsell, 2012, p.3.

[90] Cf. Hornberger, 2013.

sons why such trade agreements are preferable policies are that a mutual agreement helps to gather a greater support for freer trade and consensually negotiated terms prevent trade wars that eventually damage the economy instead of improving it.

The first argument can easily be explained by the fact, that usually import-competing producers are much better organized and connected to represent their interests than consumers. International negotiations for free trade, however, give an incentive to domestic exporters to get involved and form a strong counterweight to the producers that are lobbing for import restrictions. The second argument can be explained by an example that is known as the prisoner´s dilemma with of a simplified world with only two countries and two policy choices that are free trade or protection.[91]

The following figure shows a summary of the two countries´ choices and the corresponding economic outcomes.

Free Trade and the Prisoner´s Dilemma

Country 1 / Country 2	Free trade		Protection	
Free trade		10		20
	10		−10	
Protection		−10		−5
	20		−5	

Figure 4: Free Trade and the Prisoner´s Dilemma[92]

If each government acts form itself, it will choose a protectionist policy, due to the facts, that it will not act in the interest of maximizing the welfare of the economy as a whole but in their own political interest, influenced by powerful import-competing producers. The figure shows that this will lead to the outcome in the lower right box that makes both countries worse off. If both countries decide to negotiate and establish a free trade agreement, however, both can gain and be better off, shown in the upper left box in the figure. Even though this example is simplified and in reality there are many countries and many trade policies, the conclusion that every country will be better off when coordinating trade policies remains the same.[93]

2.6.3 International Trading Principles and the Word trade Organization

The first bilateral trade policy negotiations go back to the 1930s when the United

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[91] Cf. Krugman, Obstfeld and Melitz, 2010, p.234-235.

[92] Based on: Krugman, Obstfeld and Melitz, 2010, p.235.

[93] Cf. Krugman, Obstfeld and Melitz, 2010, p.236.

States where looking for concrete benefits in order to convince the congress to agree to tariff reductions. Negotiation partners should lower tariffs in one industry and in turn the United States would decrease its tariffs in another sector, thus eventually both would benefit. However, advantages through bilateral trade agreements may also benefit third parties that did not participate in the negotiations and some deals are more beneficial if involving more than two countries. Soon after the Second World War multilateral negotiations began and as a consequence the General Agreement on Tariffs and Trade (GATT) was established by a group of 23 countries. In 1995 additionally to the GATT the World Trade Organization (WTO) was founded to monitor and enforce the GATT rules. [94]

The WTO basically is an organization that gives the member countries a place to deal with problems concerning trade. It promotes trade opening and is a forum for trade agreement negotiations. Furthermore it manages and overviews a system of trade rules and helps governments to settle trade conflicts. The operational business is conducted by the secretariat of the WTO, composed by experts like lawyers, economists, statisticians and communications experts. Major decisions are made by the member countries, represented by either ministers or ambassadors that meet on a regular basis. At the moment the WTO has 161 members and it pursues a universal membership that is an organization of all countries in the world.[95]

Principles of the GATT-WTO system are the binding of tariffs and the prevention of nontariff trade policies. The former obligates the members of the WTO to bind their tariffs that is they are not able to raise them without the agreement of other countries that in turn usually goes with lowering another tariff at the same time. The latter affects mainly the export subsidies that hence, with the exception of agricultural products, are not allowed. Also import quotas are prohibited except as a temporary measure to fix markets disruptions. The member countries of the GATT-WTO meet in so called trade rounds to negotiate tariff reductions and other measures to improve free trade conditions. Usually the rounds are named by the city or country they take place. So far nine rounds have been hold.[96]

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[94] Cf. Krugman, Obstfeld and Melitz, 2010, p.236-237, 250.

[95] Cf. World Trade Organization, 2015, *Annual Report 2015, p.4-5, 22.*

[96] Cf. Krugman, Obstfeld and Melitz, 2010, p.236-237, 250.

2.6.4 Preferential Trade Agreements

The previously mentioned bilateral and multilateral trade agreements under GATT are made on the basis of nondiscrimination by applying the principle called most favored nation (MFN). The principle states, that if a nation negotiates a low tariff with another country, all other countries this nation trades with pay the same low tariff. There is one exception of this rule that is preferential trading agreements, also referred to as regional trading agreements. Many countries established preferential trading agreements additionally to the overall reductions of trade restrictions by GATT. These agreements decrease or erase trade restrictions between themselves but not to the rest of the world. There are different types of preferential trade agreements with an increasing degree of economic integration. The following figure shows the different types of preferential trade agreements. [97]
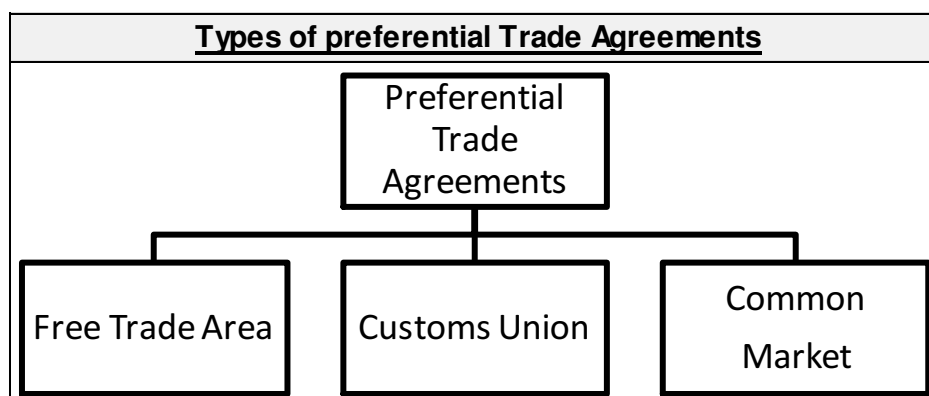
Figure 5: Types of preferential Trade Agreements[98]

Both, free trade areas as well as customs unions erase tariffs between the participating countries. The difference between them is, however, that in free trade areas each country sets its individual tariffs to the rest of the world, whereas customs unions establish common external tariffs. Either type of agreement can have two different outcomes concerning the overall welfare of a country. If such an agreement causes the production pattern to change from high-cost domestic production to importing the goods, the country gains and its welfare increases. This case is called trade creation, whereas in the case of trade diversion, low-cost imports from outside the trading zone are replaced by high-cost goods form member countries, which in turn leads to losses for the country and a decrease in welfare.[99] Furthermore, in theory it is suggested, that trade agreements increase trade between member countries and de-

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[97] Cf. Krugman, Obstfeld and Melitz, 2010, p.24-247, 250.

[98] Based on: Gandolfo, 2008, p.195.

[99] Cf. Krugman, Obstfeld and Melitz, 2010, p.24-247, 250.

crease trade and thus welfare of non-members.[100]

Overall welfare gains for member countries depend on the balance of trade creation and diversion. Empirical Analyses show evidence of trade diversion for MERCOSUR and the Andean Group. However, researches on AFTA shows contrasting results, whereas results on NAFTA are not significant due to the low number of observations with its only three members. Due to lobbying of import-competing companies in favor of preferential trade agreements in order to get an advantage over low-cost competitors from abroad, trade diversion as a result of an RTA is more likely. Studies show, however, that trade diversion can be limited by decreasing the external tariffs and thus keep trade with non-members at the same level. Furthermore the balance will be in favor of trade creation when MFN tariffs before introduction of the agreements are low, member countries are already highly involved in trade with each other and the cost of transportation are low.[101]

The common market additionally to the features of customs unions grants free movement of all factors of production within the participating countries. Furthermore, countries can decide to intensify the cooperation by establishing a common economic policy. This can go from harmonizing only certain policies in selected areas until an establishment of one common economic policy in all areas, including monetary policy and possibly a common currency like in the Eurozone.[102]

The cumulative number of RTAs is rising. Most of the agreements are bilateral, while especially the number of RTAs between developed and developing countries rises. The many different agreements make world trade increasingly complex. Critics say that through the complexity the WTO non-discrimination principles are undermined. On the other side, however, RTAs can build the basis for further multilateral trade statutes. Usually the older agreements are only reducing barriers to trade in goods, whereas newer agreements are broader and cover provisions on market opening in services, investment, competition policy, trade facilitation, government procurement, intellectual property up until labor and environment.[103]

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[100] Cf. World Trade Organization, 2011, p.9.

[101] Cf. World Trade Organization, 2003, p.58-59.

[102] Cf. Gandolfo, 2008, p.195.

[103] Cf. World Trade Organization, 2015, *Annual Report 2015,* p.75.

As of 31 December 2014 the WTO was notified about 603 RTAs, 397 of which were in force. The numbers, however, do only include free trade agreements and customs unions, but no common markets. The WTO requires goods and services aspects and accessions to existing RTAs to be notified separately, which is why they are depicted separately in the graphic as well. Counted together, the then so called physical RTAs amount to 258.[104] These numbers are depicted in the figure 32 in the appendix.

The following figure shows the 258 cumulative preferential trade agreements differentiated by country groups.
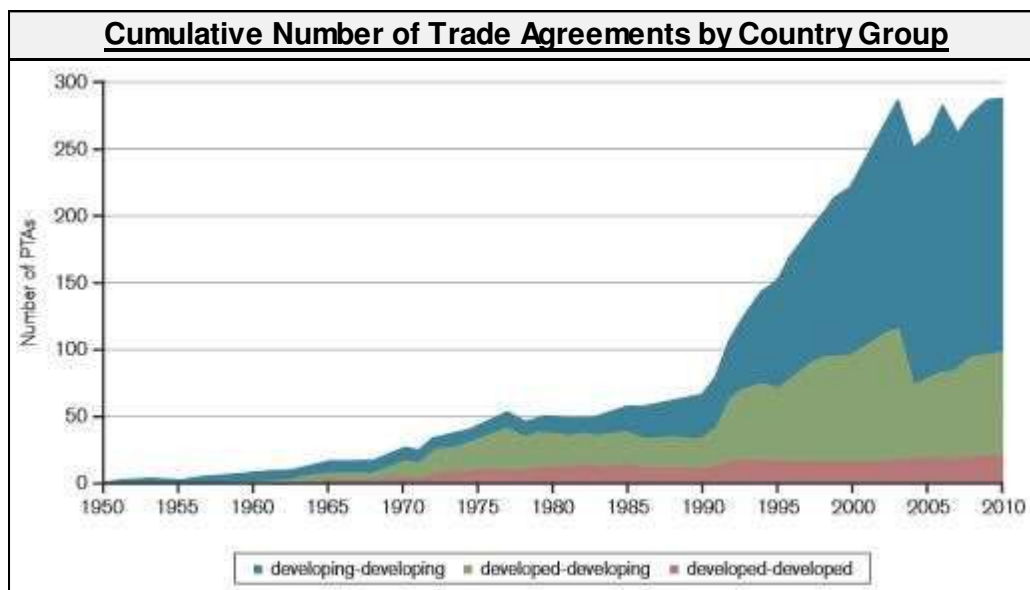
Figure 6: Cumulative Number of Trade Agreements by Country Group[105]

The graphic shows the previously mentioned increase in trade agreements between developed and developing countries. A continuously increasing number of such agreements and thus the important part of developing countries can be observed.[106]

Even though the number of RTAs is increasing, several studies state, that such agreements not necessarily lead to a deeper integration and to trade creation. An OECD study from 2002 states, that economic integration through RTAs does not go far beyond GATT-WTO. A study of the ASEAN Free Trade Area (AFTA) reveals that even though deeper integration beyond only removing trade barriers, including among others preferential liberalization of services and investment, is pursued, the

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[104] Cf. World Trade Organization, 2015, *Annual Report 2015,* p.75.

[105] World Trade Organization, 2011, p.55.

[106] Cf. World Trade Organization, 2011, p.55.

trade volume within the region has not significantly increased. This can further partially be confirmed when looking at the shares of total exports that go to RTA partners.[107] The following table shows the intra-regional export shares between 1970 and 2001 for the European Union (EU), the North American Free Trade Agreement (NAFTA), the Mercado Común del Sur (MERCOSUR) and the ASEAN Free Trade Agreement (AFTA).

Intra-regional Export Shares (in %)						
	1970	1980	1985	1990	1995	2001
EU	59,5	60,8	59,2	65,9	62,4	61,2
NAFTA	36,0	33,6	43,9	41,4	46,2	54,8
MERCOSUR	9,4	11,6	5,5	8,9	20,3	20,8
AFTA	22,4	17,4	18,6	19,0	24,6	22,4

Table 5: Intra-regional Export Shares (in %)[108]

It can be observed, that the intra-regional export shares for the EU and AFTA remained more or less on the same level. The shares of NAFTA have increased, however, this trend already started before introducing the trade agreement. An exception is MERCOSUR that shows a significant increase.[109]

A similar picture is depicted in the following table that shows the concentration ratios, calculated by dividing the intra-regional trade share by the region´s share of world trade.[110]

Intra-regional Export Concentration Ratios						
	1970	1980	1985	1990	1995	2001
EU	1,5	1,6	1,5	1,5	1,6	1,6
NAFTA	1,9	2,2	2,7	2,6	2,8	2,9
MERCOSUR	6,2	8,0	3,1	6,6	14,9	13,6
AFTA	11,4	4,9	5,1	4,6	3,9	3,6

Table 6: Intra-regional Export Concentration Ratios[111]

While the concentration ration for the EU has almost not changed, NAFTA shows a slightly positive development. Furthermore it can be observed, that MERCOSUR shows a sharp increase, whereas AFTA follows even a negative trend.[112] A more

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[107] Cf. World Trade Organization, 2003, p.54-55; Organisation for Economic Cooperation and Development OECD (2002).

[108] Based on: World Trade Organization, 2003, p.56.

[109] Cf. World Trade Organization, 2003, p.55.

[110] Cf. World Trade Organization, 2003, p.56.

[111] Based on: World Trade Organization, 2003, p.57.

[112] Cf. World Trade Organization, 2003, p.57.

recent study by the WTO, analyzing the period from 1990 to 2009, shows that intra-regional as percent of total exports in North America has decreased, while Asia could increase its share and Europe remained more or less on the same level. In summary, the intra-regional trade is approximately unchanged in the analyzed period.[113]

2.6.5 Free Trade and Growth

As previously already mentioned, free trade has a positive influence on GDP. Free trade does growth effect in three ways. First, trade affects the return to capital accumulation. That is, if a small economy opens up to trade and is able to attract investment, it can accumulate capital without experiencing falling rate of return because these rates are determined in the world market and are unaffected by the investments in the small economy. In this way small economies can experience economic growth, which according to a study of Ventura from 1997 was the case for Asian economies in the 1970s and 1980s.[114]

Furthermore, trade stimulates growth through the already mentioned incentive to innovate, based on competition, market size as well as knowledge spillovers. Innovation is needed to be able to compete with the new competitors from foreign markets. Furthermore the potential higher revenues in the larger market after opening up to trade are tempting for companies to invest in research and development. In turn, higher revenues through innovative and competitive products lead to economic growth. Through trade, companies can access to the technology and knowledge embedded foreign goods and thus can increase research and development activities in order to obtain the discovered know-how of the competitors.

Finally, opening up to free trade improves the institutional framework that in turn has a positive effect on growth. Countries that liberalize trade, by for example joining an organization like the WTO, usually make further commitments besides removing trade restrictions. Those changes of the institutional framework can include for example transparency rules in trade policy, technical regulations, subsidies or property rights.

However, critics state, that long-run growth may be moderate in countries with an overall low domestic innovation and innovation that is limited to certain sectors. Though it can be summarized that if there are large knowledge spillovers, the effect

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[113] Cf. World Trade Organization, 2011, p.71.

[114] Cf. World Trade Organization, 2008, p.61; Ventura, 1997.

of free trade on growth is positive, even when negative effects are present.[115]

The following empirical evidence supports this relationship between free trade and growth. The first figure shows the development of the world GDP per capita and the share of exports on world GDP.
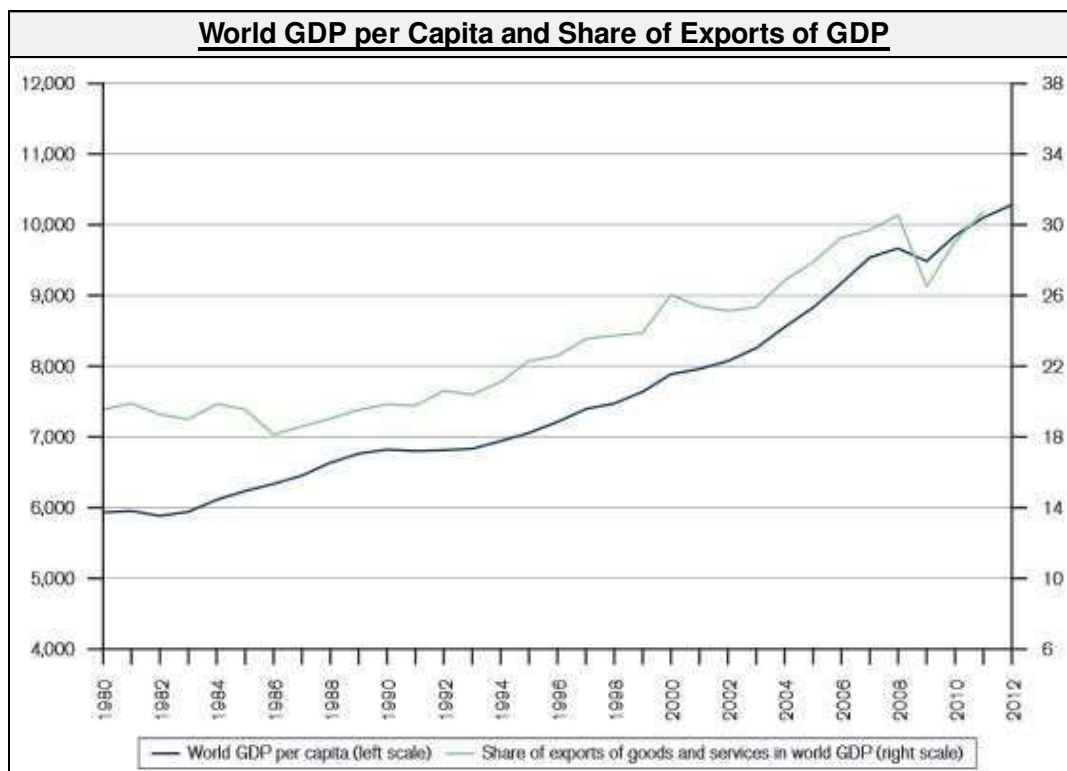
Figure 7: World GDP per Capita and Share of Exports of GDP[116]

The figure shows the world GDP per capita and the share of exports of world GDP. It can be observed, that the growth of trade in the world, represented by exports, has been accompanied by a growth in GDP per capita. There is apparently a long-term relationship, even though it cannot be said with certainty, whether the exports are growing because the GPD growth or the GDP increases because exports are growing.[117]

The following figure shows a scatter plot with the real per capita GDP growth and the export volume growth.

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[115] Cf. World Trade Organization, 2008, p.61

[116] World Trade Organization, 2008, p.62.

[117] Cf. World Trade Organization, 2008, p.60.
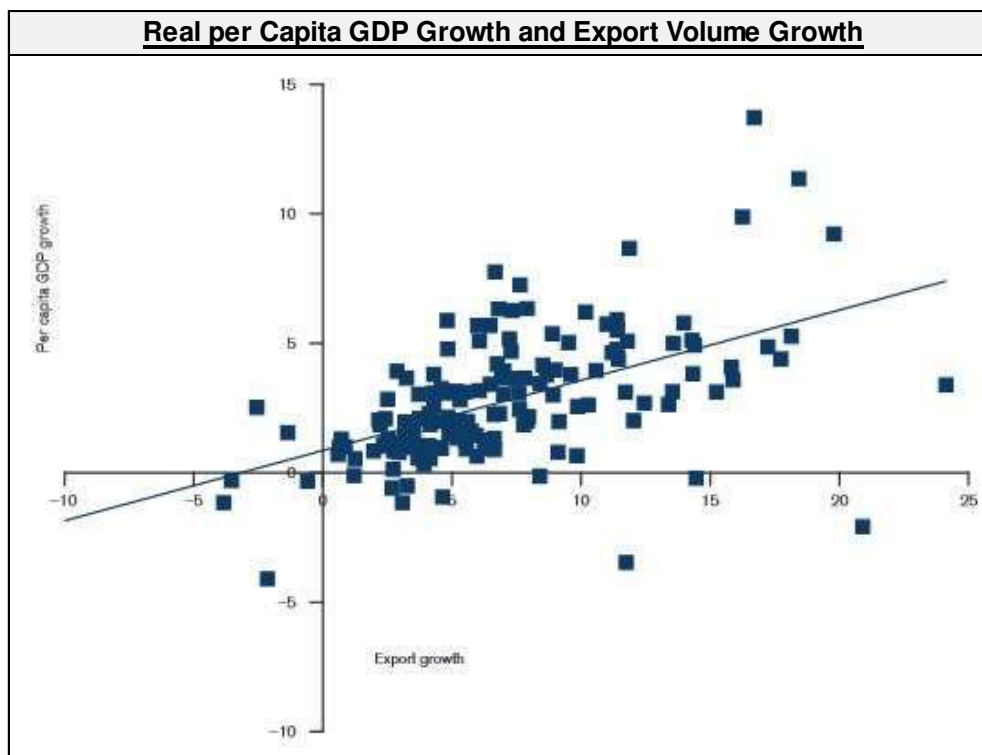
Figure 8: Real per Capita GDP Growth and Export Volume Growth[118]

The figure shows a positive relationship between real per capita GDP growth and export growth. It is important to recognize, however, that the exports are component of the GDP and thus the relationship might be exaggerated.[119]

2.6.6 Free Trade and Unemployment

Advocates of protectionist policies claim, that through the protection of industries, domestic jobs can be saved. There are two lines of argumentation. The first argument states that free trade might increases domestic unemployment and that free trade models are not accurately determining the its benefits, because they assume full employment. It is correct that the models make this assumption and they simplify the world in order to make the analysis easier, however, these assumptions are assumed to work well, since history suggests rather the opposite that is that trade restrictions increase unemployment. Furthermore, a benefit of free trade is not to increase the number of jobs, but the kind of jobs in a country. Free trade increases competition and thus leads to innovation and in turn to the development of new high-skilled jobs. [120]

Applying a protectionist policy to an industry can work in the short run, however in the

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[118] World Trade Organization, 2008, p.62.

[119] Cf. World Trade Organization, 2008, p.60.

[120] Cf. Gould, Ruffin, Woodbridge, 1993, p. 8-9; Irwin, 2002, p.70-71.

long run the intended effects might be reversed, as an example for the car industry in the United States shows. Trade restrictions to protect the domestic industry from Japanese cars made the price of car domestically produced increase by 41%. This led to lower demand of cars and thus companies had to reduce the number of employees.

Furthermore, an example of Mexico shows, that trade can increase the quality of jobs. Employees that work in Mexican export sectors, that are companies that export 60% or more of their produced goods, earn 39% higher wages than others.[121]

The second arguments stated that imports replace domestic workers. Even though it is true, that imports reduce the jobs in that domestic industry they belong to, however, the total number of jobs does not change. The jobs only move from one industry to another. Since imports eventually have to be paid, it is necessary for the domestic country to sooner or later increase its exports or foreign investment in order to meet these payment obligations, which thus creates jobs.

The creation of new jobs can take two different ways. Because of the additional sales abroad, export industries grow and increase the number of employees. Moreover, the additional imports can cause foreign investment, that is either made directly by buying plant and equipment or by investing in financial assets and in turn decrease the domestic cost of capital. Both lead to investments and growth of domestic companies, which in turn creates jobs. The same Argument also goes the other way around, when advocates of free trade refer to the creation of jobs through increased exports that in turn have to be balanced by imports and foreign investment.

Though the adjustment takes some time, so that unemployment in the short-term may increase in the long run, however, it should adjust and the net effect should be approximately leveled out.[122]

However, there are examples where free trade created jobs. The first example is the EU, where the single market created between 300 and 900 thousand jobs according to calculations. In the United States, 12 million people work in export related jobs, 1,3 million of which emerged between 1994 and 1998 after introducing the NAFTA.[123]

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[121] Cf. World Trade Organization, 2008b, p.6, 10.

[122] Cf. Gould, Ruffin, Woodbridge, 1993, p. 8-9; Irwin, 2002, p.70-71.

[123] Cf. World Trade Organization, 2008b, p.9-10.

3 International Trade Agreements

In this chapter, the key characteristics of the some selected large and important trade agreements from each geographical region in the world are presented. The focus with a more detailed analysis will lie on MERCOSUR that will be subject to the analysis of the impacts on the economy in the following chapter.

3.1 Mercado Común del Sur, MERCOSUR

The Mercado Común del Sur (MERCOSUR) is a project of regional integration to establish a common market of the south in Latin America. Initially founded by Argentina, Brazil, Paraguay and Uruguay, it was expanded later on by Venezuela and Bolivia, the latter still in the accession process. This makes it the fifth largest economy in the world.[124]
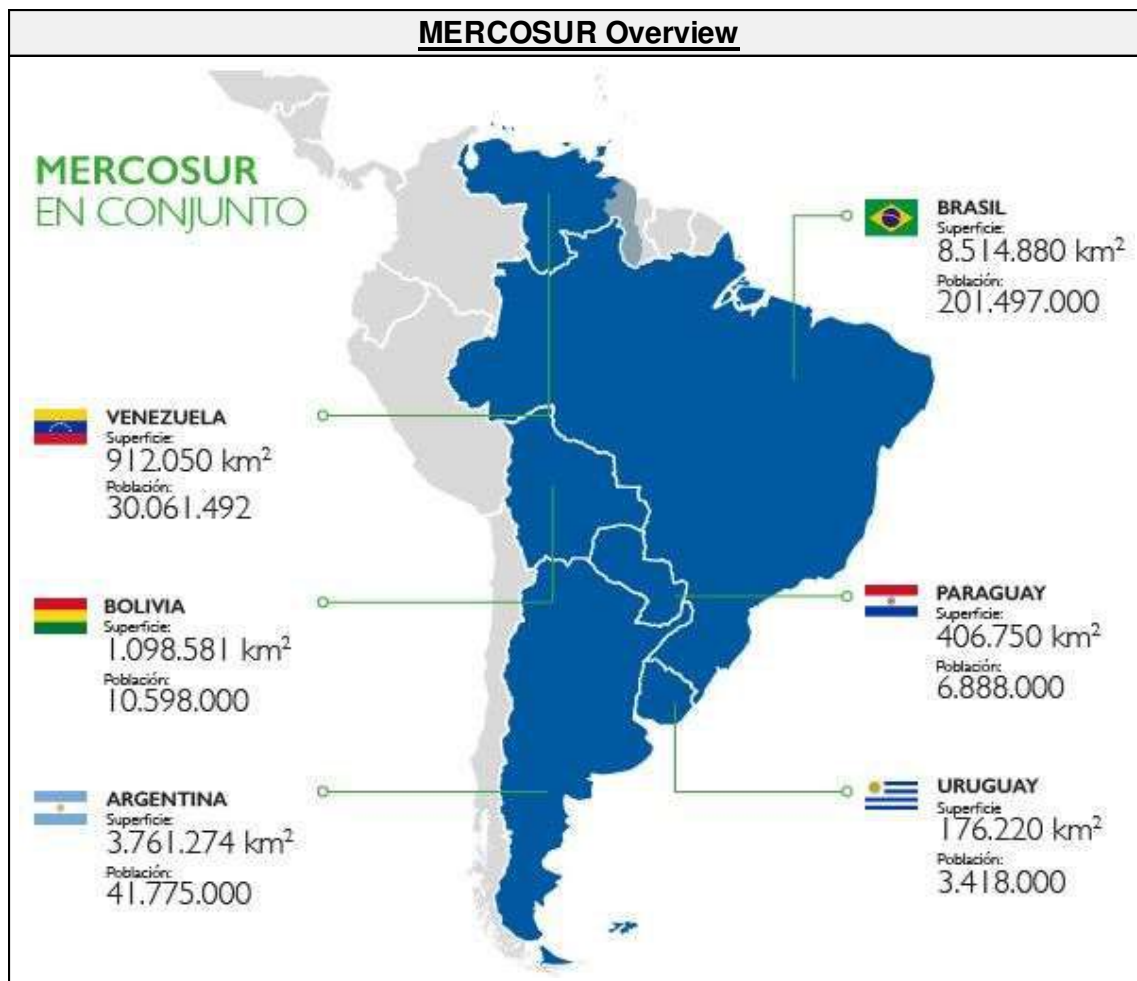
Figure 9: MERCOSUR Overview[125]

MERCOSUR has the main objective to foster a common space that generates opportunities of trade and investment through the integration of national economies into the

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[124] Cf. MERCOSUR, *En pocas Palabras*, n.d..

[125] MERCOSUR, *En pocas Palabras*, n.d..

international market. Additionally to preferential trade conditions among the partici-pating states, it has established various agreements with countries or groups of countries, granting them in the cases of South-American countries, character of as-sociated states. These states participate in activities and meetings and have prefer-ential trade conditions with the member states. MERCOSUR has also signed com-mercial, political or cooperation agreements with numerous nations and organiza-tions on five continents. [126]

The so called associated members do have neither full voting rights nor complete access to the common market, however, receive tax reductions, while not having to impose the common external tariff of MERCOSUR. The associated members current-ly are Chile, Bolivia, Colombia, Ecuador, and Peru.[127]

Paraguay was suspended form MERCOSUR in 2012 after the, from a democratic point of view, questionable dismissal and impeachment of its President.[128] After the election of its new President, Paraguay was invited to rejoin, however hesitated a moment to do so, because during its suspension, Venezuela fully joined MERCOSUR, a move, previously rejected and prevented by Paraguay. After consult-ing with its congress, the new Paraguayan president announced the reentry into MERCOSUR in late 2013.[129]

The pillars of MERCOSUR´s integration process are the principles of Democracy and Economic Development. In line with these principles, the members have accumulat-ed various agreements, among others, on migration, labor, cultural and social mat-ters, which are of high importance to its inhabitants.

These agreements meant that on the one hand, it was necessary to adapt and ex-tend the institutions of Mercosur in the entire region serving new demands and deep-ening the effective participation of citizens by different means. On the other hand, it must have mechanisms of own, solidary financing, such as, among others, the Fondo para la Convergencia Estructural del MERCOSUR (FOCEM, engl. Fund for Structural Convergence of MERCOSUR). The FOCEM finances projects through an annual

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[126] Cf. MERCOSUR, *En pocas Palabras*, n.d..

[127] Cf. Klonsky, 2012.

[128] Cf. Klonsky, 2012.

[129] Cf. Desantis, 2013.

contribution of $ 100 million by the members of MERCOSUR, aimed at promoting competitiveness, social cohesion and reducing asymmetries among members of MERCOSUR.[130]

The following table summarizes the chronology of the evolution of MERCOSUR.

Chronology of MERCOSUR	
Year	**Event**
1991	agreement of Asunción, birth of MERCOSUR
1994	protocol of Ouro Pretox, institutional base of MERCOSUR
1998	democratic compromise, protocol of Ushuaia
1998	declaration as a zone of freedom and free of mass destruction weapons
2002	protocol of Olivos, settlement of disputes
2003	regulation of the protocol of Olivos, creation permanent review tribunal
2005	creation of Fund for Structural Convergence
2005	constitutive protocol of the MERCOSUR Parliament
2006	adherence of Venezuela
2007	creation of the MERCOSUR Social Institute
2009	creation of the Institute of Policy Public Human Rights
2010	creation of High General Representative of MERCOSUR and the Support Unit for Social Participation
2015	adherence of Bolivia

Table 7: Chronology of MERCOSUR[131]

The potentials of MERCOSUR are immeasurable because in their territory of nearly 15 million square kilometers it has a variety of natural resources: water, biodiversity, energy resources and fertile land. However, the greatest assets are its people, because thanks to a population of over 295 million people, it has a priceless cultural, ethnic, linguistic and religious diversity, which coexists harmoniously making the MERCOSUR a region of peace and development.[132]

MERCOSUR makes its decisions through three bodies: the Consejo del Mercado Común (CMC, engl. Common Market Council), which is the highest body of MERCOSUR and politically conducts the integration process, the Grupo Mercado Común (GMC, engl. Common Market Group), which oversees the daily operation of the MERCOSUR and finally the Comisión de Comercio (CCM, engl. Trade Commission), which is responsible for the administration of the common trade policy instruments. Additionally there are more than 300 negotiating forums in many different areas, which are composed by representatives of each member country and promote

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[130] Cf. MERCOSUR, *En pocas Palabras*, n.d..

[131] Based on: MERCOSUR, *En pocas Palabras*, n.d..

[132] Cf. MERCOSUR, *En pocas Palabras*, n.d..

initiatives to be considered by decision-makers. With time and the effects of the implementation of its regional policy, MERCOSUR has created various agencies in different cities, among others the Alto Representante General de MERCOSUR (ARGM, engl. high general representative of MERCOSUR), the FOCEM, the Instituto de Políticas Públicas en Derechos Humanos (IPPDH, engl. institute of policy public human rights), the Instituto Social del MERCOSUR (ISM, engl. MERCOSUR Social Institute), the Parlamento del MERCOSUR (PARLASUR, engl. MERCOSUR Parliament), the Secretaría del MERCOSUR (SM, engl. Secretariat of MERCOSUR), the Tribunal Permanente de Revisión (TPR, engl. Permanent Review Tribunal), and the Unidad de Apoyo a la Participación Social (UPS, engl. support unit for social participation).[133]

Dispute Settlement in MERCOSUR is currently regulated by the Protocolo de Olivos (engl. protocol of Olivos), which was incorporated by the national legislations of all participating states in January 2014. The Protocol of Olivos generated significant changes in the mechanism, one is the Permanent Review Court of MERCOSUR located in Asuncion, Paraguay. Also there is the General Procedure for Complaints to the MERCOSUR Trade Commission.[134]

Next to MERCOSUR, there is another trade area existing in South America, called Comunidad Andina (CAN, engl. Andean Community of Nations), that includes Bolivia, Colombia, Ecuador, and Peru. The statute of MERCOSUR, however, does not allow its members to be affiliated in other free trade areas, which is why for example Venezuela had to leave CAN in 2012 previously to the admission to MERCOSUR. Nevertheless, the two trade areas are not only linked by CAN members being associated members of MERCOSUR, but also by a third agreement, the so called Unión de Naciones Suramericanas (UNASUR, engl. Union of South American Nations) that according to experts could replace MERCOSUR in the future.[135]

The UNASUR consists of twelve nations that besides of the members of MERCOSUR and CAN are Chile, Guyana and Suriname. Its objective is to create a common place of cultural, economic, social and political integration.[136]

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[133] Cf. MERCOSUR, *Su funcionamiento*, n.d..

[134] Cf. MERCOSUR, *Solución de Controversias*, n.d..; MERCOSUR, *Preguntas frecuentes*, n.d..

[135] Cf. Klonsky, 2012.

[136] Cf. UNASUR, n.d., *¿QUIÉNES SOMOS?*.

3.2 North American Free Trade Agreement, NAFTA

The North American Free Trade Agreement (NAFTA) was introduced in 1994. NAFTA enables its member states Canada, the united stated, and Mexico to trade and make investments in an environment of confidence and stability free of most tariff and non-tariff barriers. The NAFTA members also made to two side agreements: the North American Agreement on Environmental Cooperation and the North American Agreement on Labor Cooperation. Canada and the United States already had a free trade pact introduced in 1989. With NAFTA and the inclusion of Mexico a broad free trade area with a population of 444.1 million people an output of 17 trillion US-Dollars was created.[137]

3.3 European Economic Area, EEA

The European Economic Area was established in 1994 in order to create a single market between the European Union (EU) and the European Free Trade Area (EFTA), excluding Switzerland.[138]

The EFTA was founded in 1960 to represent the interests concerning trade of those countries that were not part of the European Economic Community (EEC), which later was transformed into the EU. After several of its members joined the EEC/EU, the EFTA nowadays includes only the four members Iceland, Liechtenstein, Norway and Switzerland.[139]

The EEA is more than just a traditional free trade agreement, due to the fact, that it lets EFTA fully participate in the internal market of the EU. This includes the four freedoms free movement of goods, persons, services and capital as well as related policies concerning competition, transport, energy and economic and monetary cooperation. Due to a referendum in 1992, Switzerland did not become a member of the EEA, it merely has an observer status. In order not to be excluded, Switzerland has more than 120 bilateral agreements with the EU among others concerning economic cooperation, participation in educational programs and cooperation on asylum and free travel. Furthermore the EU actively participates and supports forums and

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[137] Cf. NAFTANOW, *North American Free Trade Agreement*, n.d..

[138] European Parliament (2015) *The European Economic Area (EEA), Switzerland and the North.*

[139] Bundeszentrale für politische Bildung (n.d.) *Europäische Freihandelszone (EFTA).*

policies concerning northern Europe and the Arctic region.[140]

3.4 ASEAN Free Trade Area, AFTA

The Association of Southeast Asian nations (ASEAN) signed the ASEAN Free Trade Area (AFTA) in February 2002. Its member states are Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Viet Nam. The AFTA is using its Common Effective Preferential Tariff (CEPT) Scheme to reduce tariffs and non-tariff barriers.[141]

3.5 South African Development Community, SADC

The South African Development Community (SADC) was founded in 1992 to achieve economic growth and development. Its member states are Angola, Botswana, Democratic Republic of Congo, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, United Republic of Tanzania, Zambia and Zimbabwe.[142]

3.6 Eurasian Economic Union, EAEU

The Eurasian Economic Union (EAEU) was created in 1995. The members of the customs union are the Republic of Belarus, the Republic of Armenia, the Republic of Kazakhstan, the Kyrgyz Republic and the Russian Federation.[143]

3.7 Asia-Pacific Trade Agreement, APTA

The Asian-Pacific Trade Agreement (APTA) was established in 1975 with the aim of trade liberalization that benefits all its members. The trade area is composed of the countries People's Republic of Bangladesh, People's Republic of China, Republic of India, Lao People's Democratic Republic, Republic of Korea and Democratic Socialist Republic of Sri Lanka.[144]

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[140] European Parliament (2015) *The European Economic Area (EEA), Switzerland and the North.*

[141] Cf. Association of Southeast Asian Nations: *The ASEAN Free Trade Area (AFTA)*, n.d.; Asian Regional Integration Center, *ASEAN Free Trade Area (AFTA), n.d..*

[142] South African Development Commmunity, n.d..

[143] Cf. Eurasion Economic Union, n.d..

[144] Cf. United Nations Economic and Social Commission for Asia and the Pacific, n.d..

4 Analysis of the Impacts on the Economy

In this chapter, the impacts of free trade on an economy will be analyzed. First, the selected economic variables will be defined and their development will be examined and depicted graphically. Furthermore the relationship between the economic variables will be analyzed and the results will be compared to the theory. In Addition, in order to determine the impact of free trade on the economic growth of a country, a model to explain the growth of the gross domestic product of the countries will be developed.

4.1 Selection and Definition of economic Variables

For the analysis of the impacts of the MERCOSUR trade agreement on the economy, the economic variables shown in the following table are selected.

Selected Variables for the Analysis
- Exports of goods and services
- Imports of goods and services
- Balance of Trade
- Total Trade Volume
- Gross Domestic Product
- Gross Domestic Product per Capita
- Unemployment
- Inflation
- Consumption
- Productivity

Table 8: Selected Variables for the Analysis[145]

For analyzing and comparing, all total numbers are depicted in the currency US-Dollar and at current prices. The imports and exports of goods and services are taken into account with its total amounts and also as percentage of GDP, whereby the total numbers are derived from the GDP using the respective percentage figures.

The balance of trade is calculated by subtracting the total imports from the total exports. The total trade volume is the sum of the total exports and imports of goods and services. The GDP per Capita is the GDP divided by the midyear population in the respective year. The unemployment is shown as a percentage of the total labor force. The inflation is depicted annually by using the GDP Deflator.

The GDP deflator compares the current level of prices relative to the level of prices in a base year. It is calculated as the ratio of nominal GDP to real GDP and measures the rise in nominal GDP that cannot be explained by the increase in real GDP. The

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[145] Own Creation.

annual change in the GDP deflator reflects the change in the level of prices.[146]

For the variable consumption, the household's final consumption expenditure as percentage of GDP is used. For the variable productivity, two measures are analyzed. First, the labor productivity per person employed, calculated by GDP per person employed and secondly, the labor productivity per hour worked, calculated by GDP per hour worked. Both are depicted in US-Dollar and converted to the price level of 2014. With the exception of productivity, all data for the respective variables was published by worldbank. The exact method of calculation and composition of each variable can be researched at the website of worldbank under the link stated in the references. This calculation and composition of the variables might differ from the ones of other institutions that publish economic data and that might be cause different numbers. In order to have a consistent analysis, as far as the data was available, it collected from the worldbank.

All numbers are collected annually for each member country of MERCOSUR for the period from 1991 to 2014. Also for Venezuela, which joined MERCOSUR only as recently as in the year 2012, the data is collected and depicted for the whole period. However, for the analysis only the time since its accession is considered. Since these are no more than three years, no significant conclusions in the case of Venezuela can be made and the impacts of joining MERCOSUR remain to be seen. For Brazil, Argentina, Uruguay, and to some extend Paraguay, with an available period of 14 years, more meaningful statements and conclusions can be made.

4.2 Development of economic Variables

In this chapter, the collected economic data and its development will be analyzed. In order to do that, the data will is depicted graphically.

The following figure shows the exports of goods and services as a percentage of GDP.

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[146] Cf. Mankiw, 2011, p.502-503.
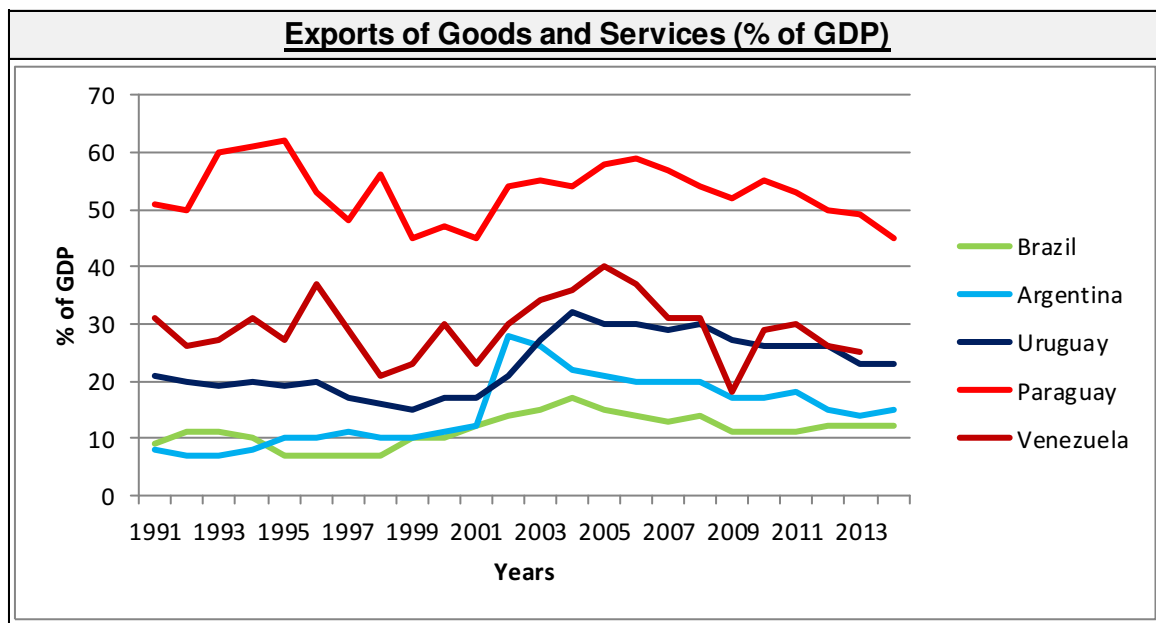
Figure 10: Exports of Goods and Services (% of GDP)[147]

When looking at the development of the exports of goods and services of the countries of MERCOSUR, it can be stated, that Brazil (3%), Argentina (7%) and Uruguay (2%) show moderate increases over the period since 1991, whereas Paraguay (-6%) and Venezuela (-1%) record a decrease. However, since these are percentages of GDP that has also changed over the years we have to analyze the development while considering also the development of the GDP in order to make a significant statement. This will be done later in this chapter. The same is true for imports as a percentage of the GDP.

However, before analyzing the GDP, a look will be taken on the exports and imports in total numbers.

The following figure shows the exports of goods and services in total numbers.

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[147] Based on Data from World Bank.
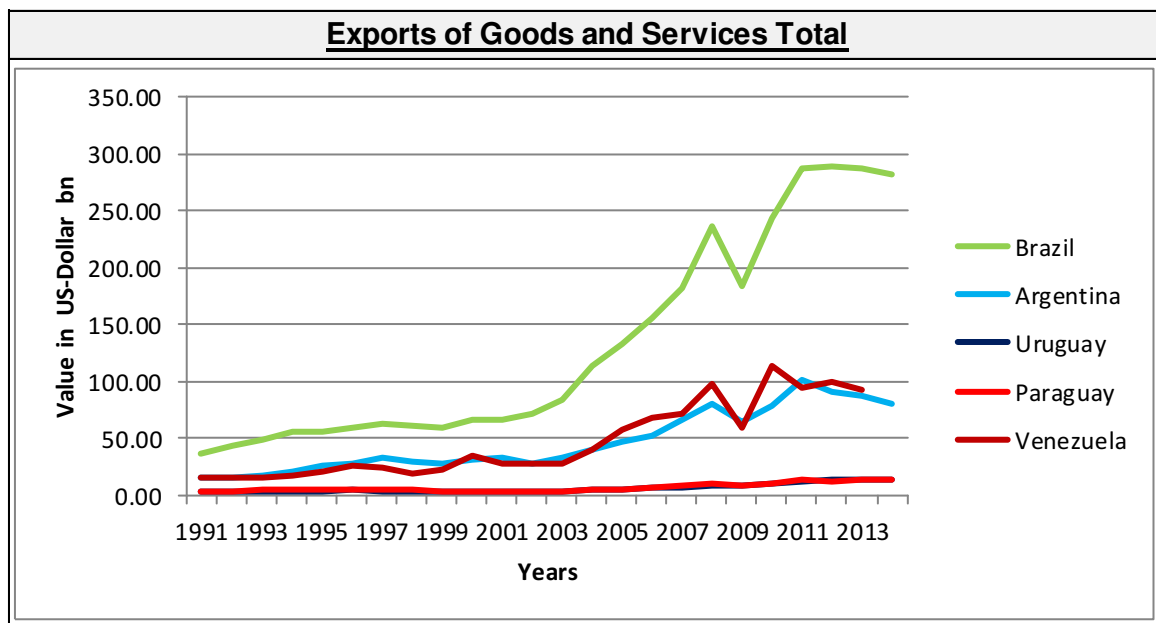
Figure 11: Exports of Goods and Services Total[148]

For the countries Brazil and Argentina the exports of goods and services in total numbers have continuously risen, especially for Brazil that could increase its exports by approximately 240 billion US-Dollars. An exception makes the year 2009, where, due to the worldwide economic crisis, a significant decrease can be observed, visible in Brazil, Argentina and Venezuela. The exports of Uruguay and Paraguay, however, have in comparison only moderately increased (approximately 10 billion each) and move almost equally on the same level, while exports of Venezuela actually slightly decreased since joining MERCOSUR in 2012.

The following figure shows the imports of goods and services in total numbers.

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[148] Based on Data from World Bank.
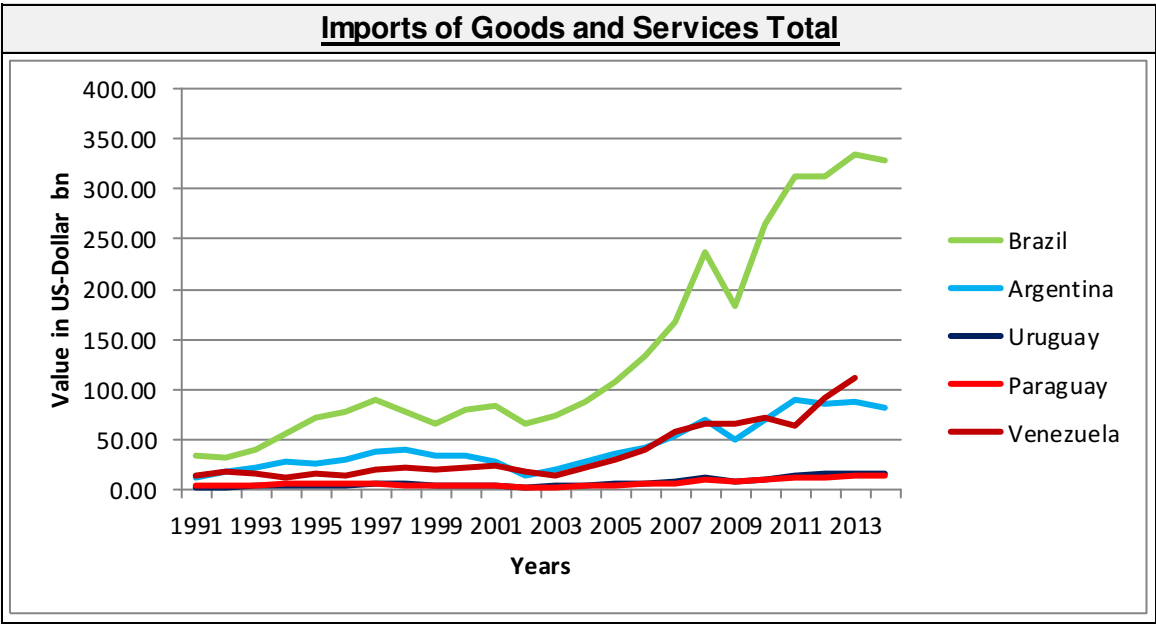
Figure 12: Imports of Goods and Services Total[149]

The imports of goods and services in total numbers show almost the same development as the exports. While Argentina, especially Brazil and here also Venezuela have increased their imports in part massively, Paraguay and Uruguay achieved only a relatively small growth, again moving almost simultaneously on the same level. Furthermore it can be observed, that the increase in imports exceeds the increase in exports in all countries, except for Paraguay that has an almost equal development of exports and imports. This excess of imports will be further evaluated in the next step, when looking at the balance of trade.

Using the previously depicted numbers to calculate the balance of trade, the development shown in the figure below can be observed.

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[149] Based on Data from World Bank.
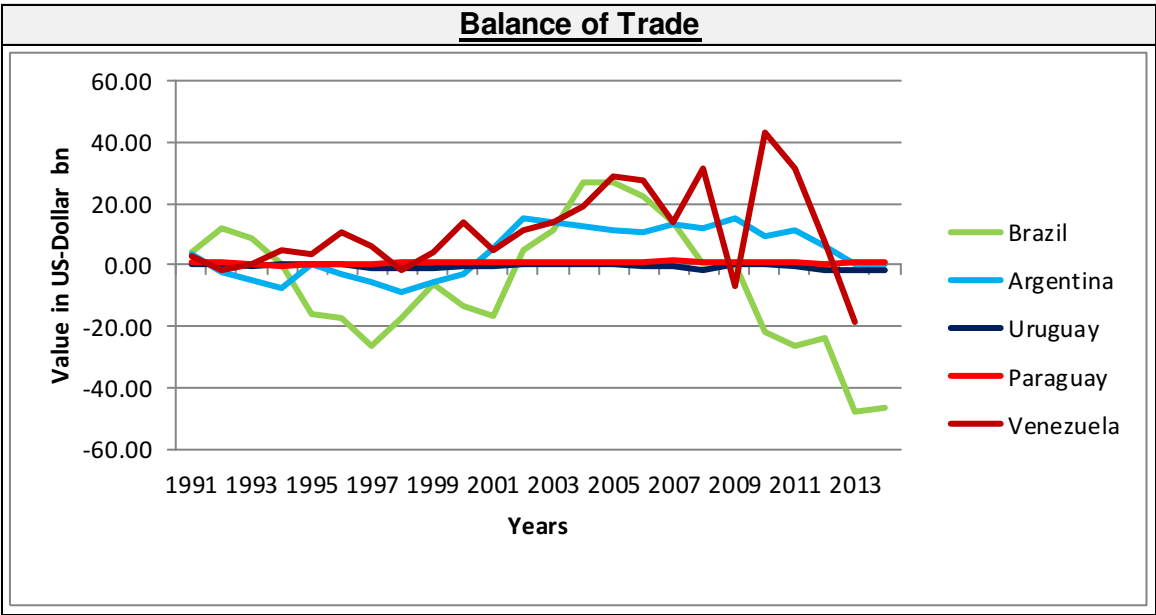
Figure 13: Balance of Trade[150]

It can be stated, that the balance of trade of Paraguay, as mentioned before, is quite balanced out over the entire course, as is the one of Uruguay that shows only a few slight deficits. In contrast, the balances of Brazil, Argentina and Venezuela are fairly volatile. After a period of deficits followed by a period of surpluses, also Argentina's trade balance is leveled out in the recent years. Furthermore it is noticeable that the balance for Brazil shows an increasingly negative trend recently, resulting in for the country historically high trade deficits in the last two years. Also for Venezuela a sharply negative trend can be observed, caused by both, increasing imports and decreasing exports.

The following figure shows the total trade volume of each of the analyzed countries.

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[150] Based on Data from World Bank.
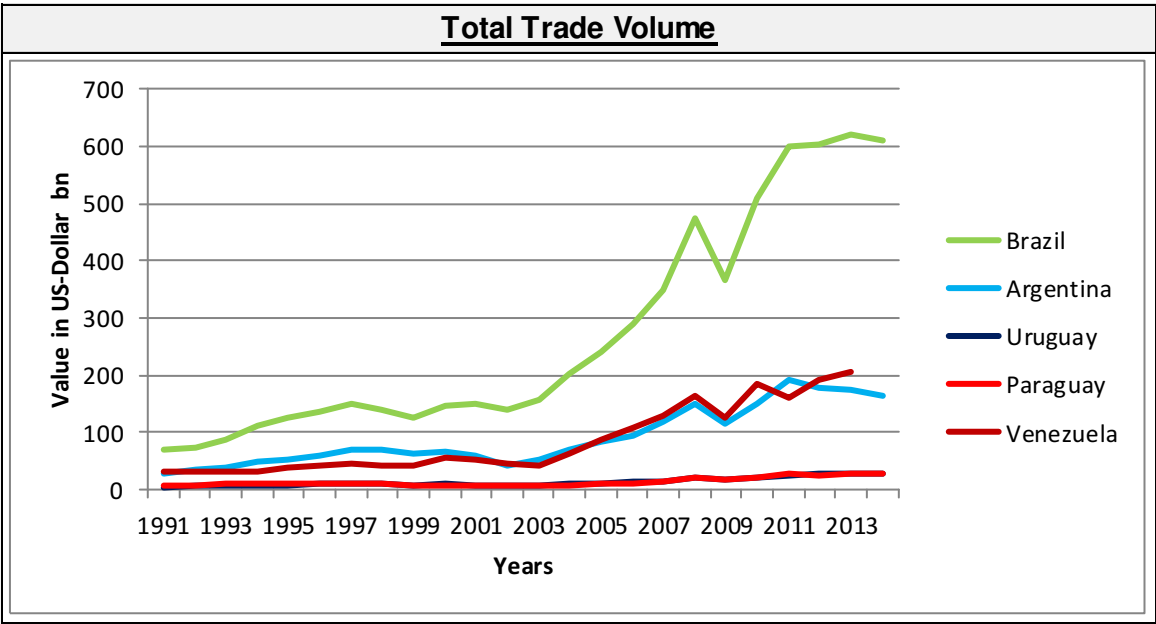
Figure 14: Total Trade Volume[151]

It can be observed, that in all analyzed countries, the trade volume increased since the introduction of MERCOSUR. Especially Brazil and Argentina show an immense increase, whereas Uruguay and Paraguay could only moderately raise their trade volume. Also Venezuela has increased its trade volume since joining in 2012.

After analyzing the total numbers of exports and imports, in the next step the development of the GDP is evaluated. The following figure shows the GDP, depicted in US-Dollar.
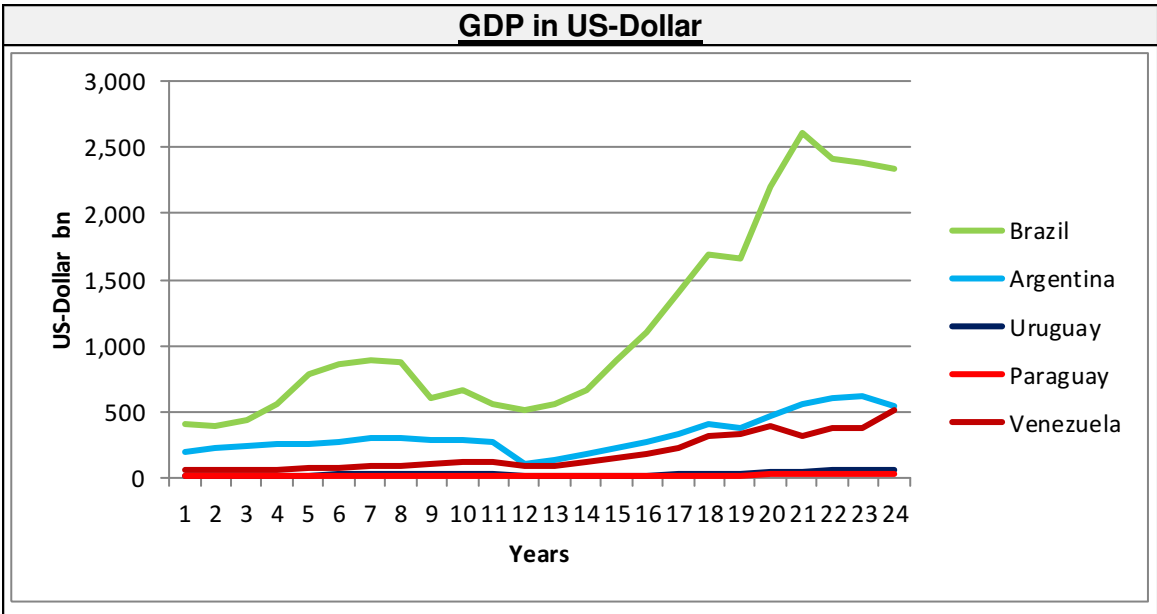
Figure 15: GDP in US-Dollar[152]

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[151] Based on Data from World Bank.

[152] Based on Data from World Bank.

When looking at the development of the GDP, it can be stated, that all the countries have grown since the introduction of MERCOSUR. The countries Brazil, Uruguay and Paraguay show the increases by approximately five times as much, whereas in Argentina a growth of almost 3 times as much can be observed. Also Venezuela could increase its GDP by a significant amount since joining MERCOSUR. Furthermore, for all countries the rapid growth took a more or less intensive break in the year 2009 due to the economic crisis in the world. The fact that GDP as well as exports have grown over time explains the only moderate increase in exports as a percentage of GDP. The same is true for imports as a percentage of GDP, which is shown in the following figure.
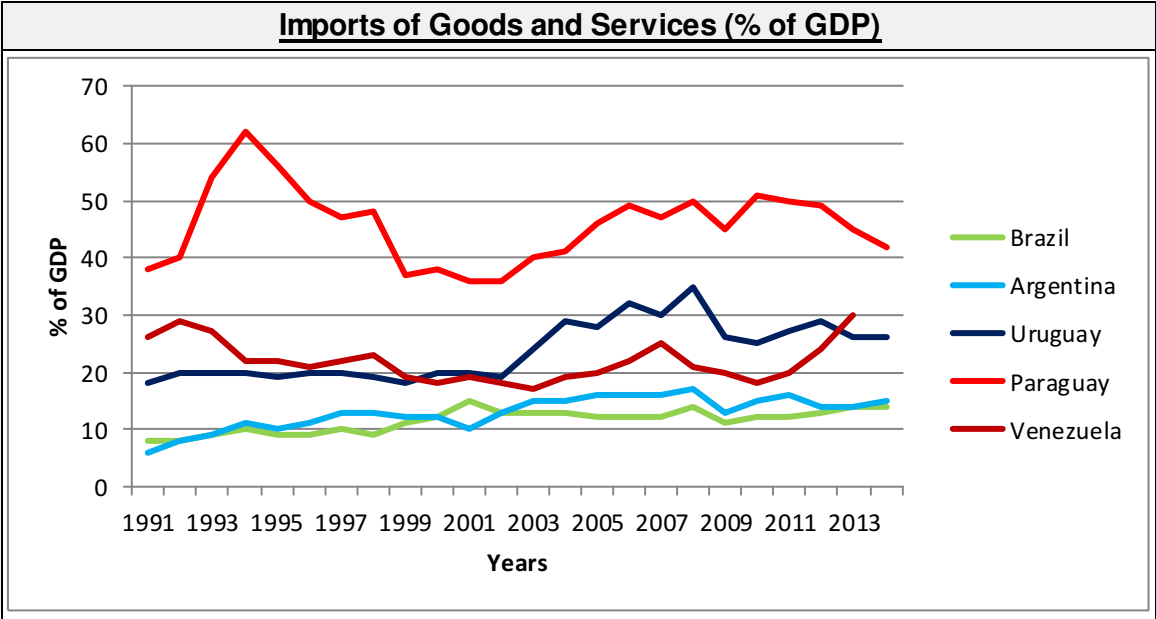
Figure 16: Imports of Goods and Services (% of GDP)[153]

When looking at the development of the imports as a percentage GDP, it can be stated, that there is an overall increase for all the countries over the period since 1991, the highest of which in Argentina (9%) and the lowest in Paraguay (4%). Also Venezuela, as already mentioned before, has increased its imports since its accession to MERCOSUR.

The following figure shows the GDP per Capita, also depicted in US-Dollar.

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[153] Based on Data from World Bank.
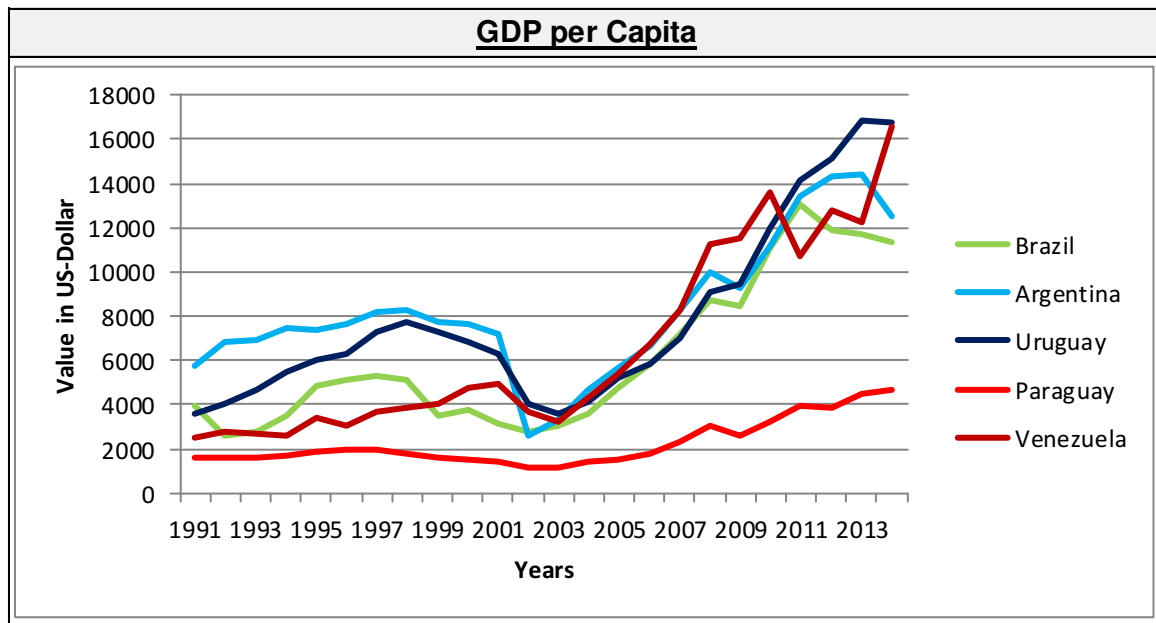
Figure 17: GDP per Capita[154]

As the GDP, also the GDP per capita has grown in all the analyzed countries. The highest growth can be observed for Uruguay, followed by Brazil, Argentina and Paraguay. Also Venezuela shows a sharp increase since it became a member of MERCOSUR in 2012.

The following figure shows the unemployment as a percentage of total labor force.
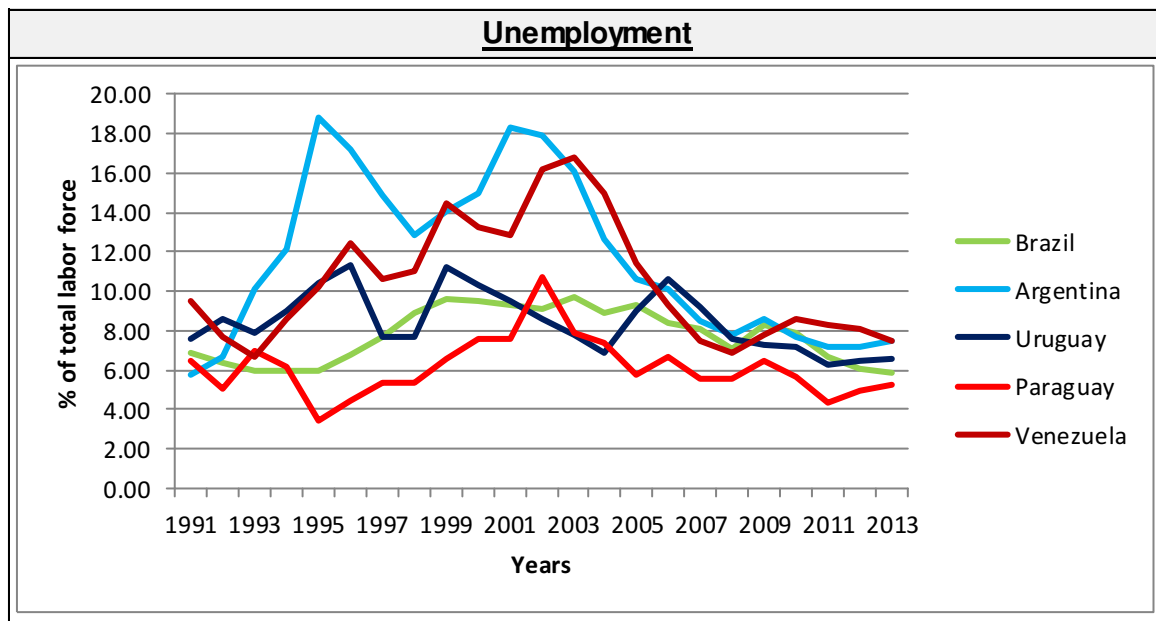
Figure 18: Unemployment[155]

When looking at the unemployment as a percentage of total labor force, it can be observed, that the unemployment overall, although very volatile in some countries, has

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[154] Based on Data from World Bank.

[155] Based on Data from World Bank.

decreased in the course since 1991 in all analyzed economies. While Brazil (-1%) shows only a slight decrease, in the other countries the unemployment fell significantly by between approximately 6 and 10 percent. Also in Venezuela (-0,6%) a slight decrease can be observed since 2012. However, previously to the mentioned decrease, the unemployment actually increased in the short run after introduction of MERCOSUR.

The following figure shows the final consumption expenditure of households.
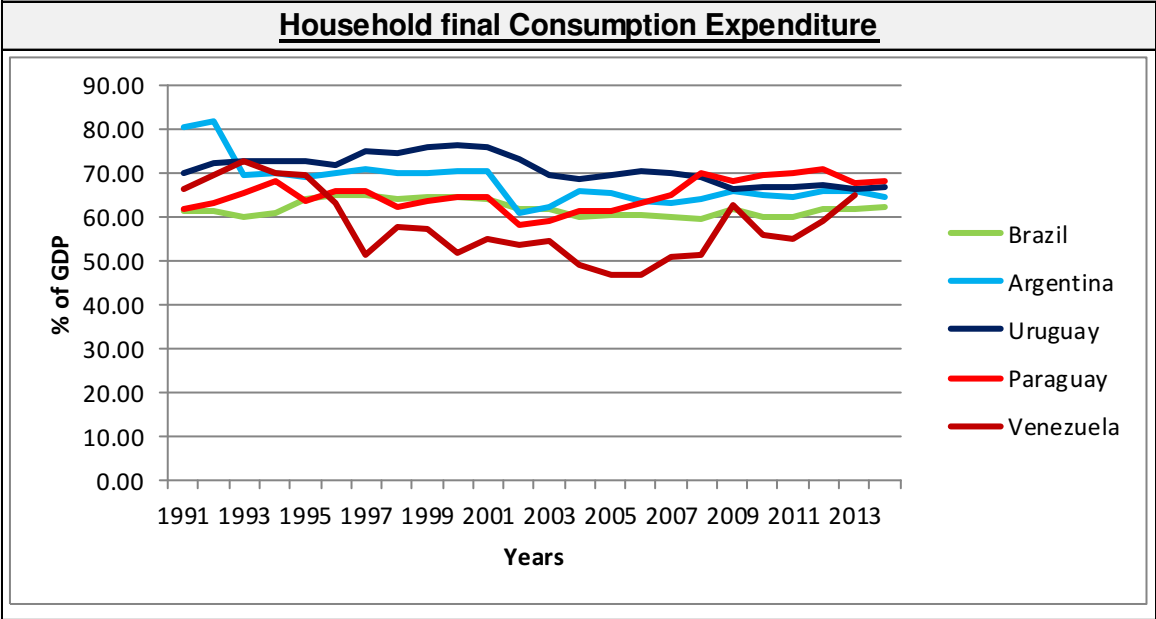
Figure 19: Household final Consumption Expenditure[156]

The final expenditure of households as a percent of GDP has decreased in Argentina (-16%) and Uruguay (-3%). In Brazil (0,9%) a slight increase can be observed, while the final consumption expenditure in Paraguay (6,5%) and since 2012 for Venezuela (5,8%) increased significantly.

The following figure shows the Inflation, depicted by the GDP deflator.

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[156] Based on Data from World Bank.
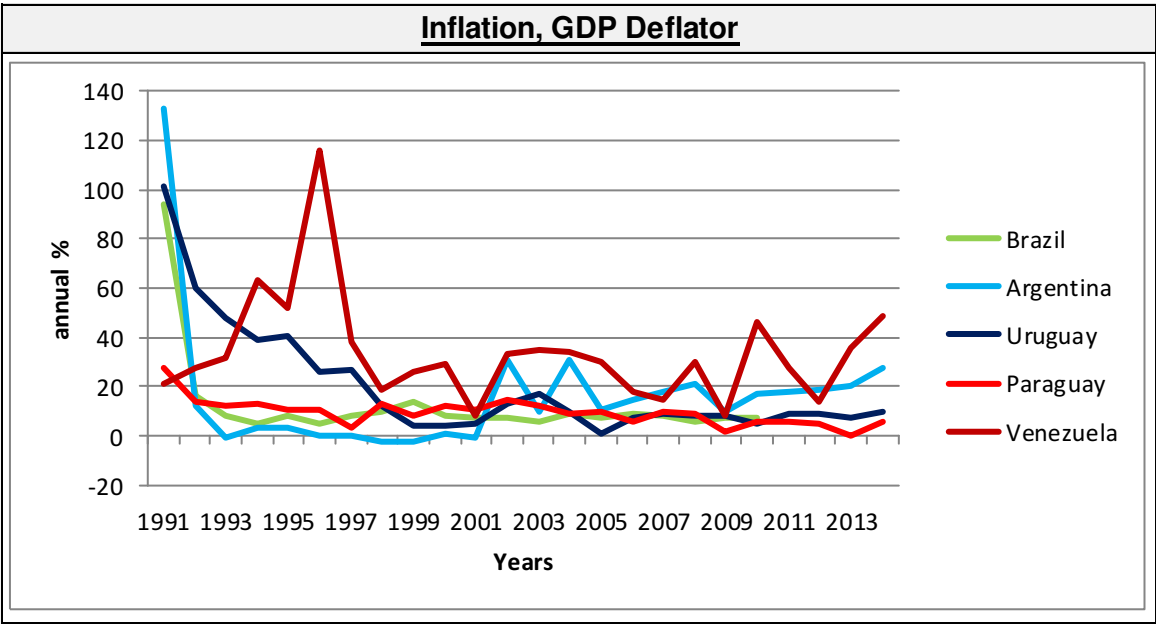
Figure 20: Inflation, GDP Deflator[157]

The inflation measured by the GDP deflator has, except for Venezuela, decreased significantly for all the member states, although it is still considerably high in Argentina and Uruguay especially. Particularly in the first years after the introduction of MERCOSUR the inflation decreased sharply. The exception is Venezuela, for that, since joining MERCOSUR in 2012, a sharp increase to a very high level can be observed.

The following figure shows the labor productivity per person employed.
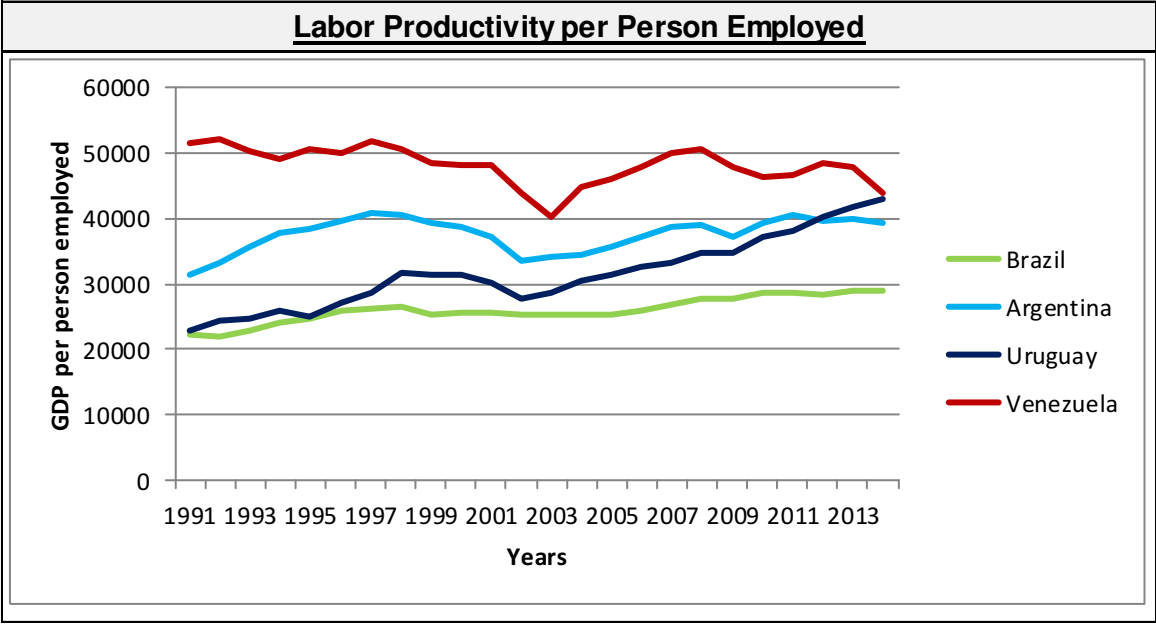
Figure 21: Labor Productivity per Person Employed[158]

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[157] Based on Data from World Bank.

[158] Based on Data from Conference Board.

For the variable productivity per person employed there is no data available for Paraguay. For the other countries an overall increase in productivity can be observed, especially high in the case of Uruguay. The exception again is Venezuela that shows a decrease since joining MERCOSUR.

The following figure shows the labor productivity per hour worked.
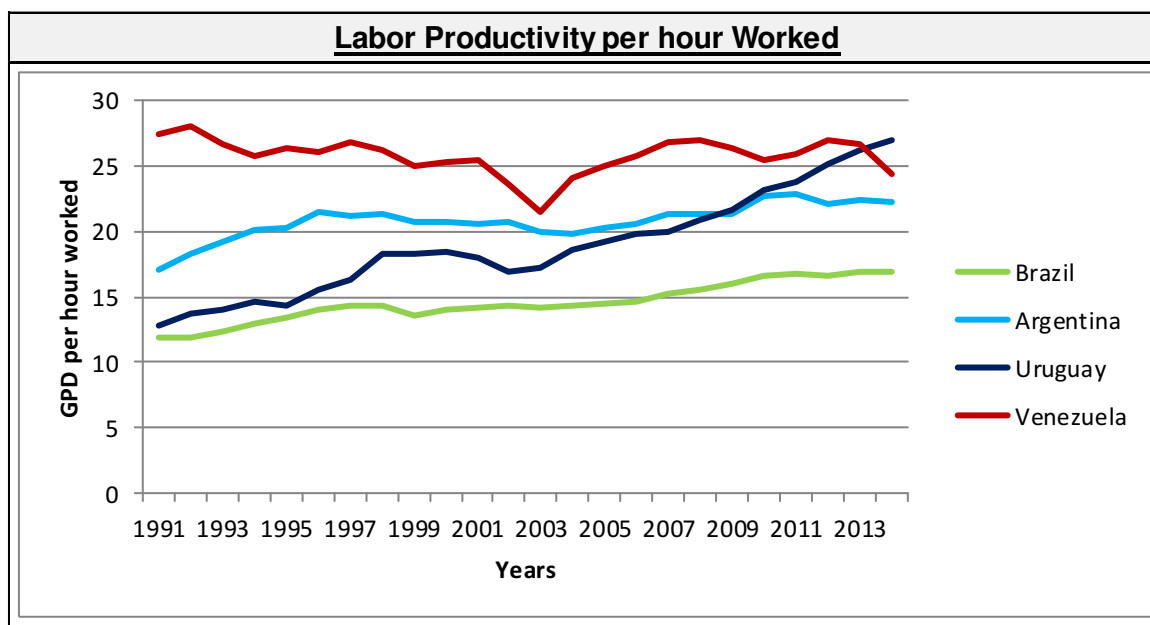
Figure 22: Labor Productivity per hour Worked[159]

Also for the variable productivity per hour worked there is no data available for Paraguay. For the other countries the same development as for the productivity per person can be observed, that is the productivity increased overall, in Uruguay especially, while Venezuela shows a decrease.

The following figure shows a summary of the development of the analyzed data, classified horizontally by country and vertically by the economic variables.

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[159] Based on Data from Conference Board.

Summary of economic Development					
	Brazil	Argentina	Uruguay	Paraguay	Venezuela
Exports	↑	↑	↑	↑	↓
Imports	↑	↑	↑	↑	↑
Balance of Trade	↓	↔	↔	↔	↓
Trade Volume	↑	↑	↑	↑	↑
GDP	↑	↑	↑	↑	↑
GDP per Capita	↑	↑	↑	↑	↑
Unemployment	↓	↓	↓	↓	↓
Inflation	↓	↓	↓	↓	↑
Consumption	↔	↓	↓	↑	↑
Productivity	↑	↑	↑	no data	↓

Table 9: Summary of economic Development[160]

4.3 Relationship between economic Variables

As a result of the examination in the previous chapter it can be stated, that exports and imports, and thus the trade volume, increase in a free trade environment. In this chapter it will be analyzed, if the development of the other examined variables is actually related to the increase in trade volume. Furthermore it will be determined, whether economic growth experienced in the analyzed countries is caused by that increase in the trade volume and what other variables influence that growth in GDP. In summary, the hypothesis, that free trade increases the trade volume, which in turn affects other economic variables and eventually leads to economic growth, will be confirmed or rejected.

4.3.1 Impacts of a changed Trade Volume

To determine the relationship between the trade volume and the other variables, simple linear regression analyses will be conducted with the data from the years 1991 to 2014. Specifically, the variable total trade volume will be regressed against one of the other previously describes variables in order to determine the relationship. In the models, the independent variable will be the total trade volume and its influence on the respective dependent variable will be estimated. As mentioned in the previous chapter, there is no data available for the variable productivity in Paraguay. Furthermore the analysis also includes Venezuela, however, as in the previous subchapter, the results for the country are considered less when making conclusions. Moreover, there are several restrictions concerning the results of the regression analyses. Problems of structural breaks, trends, unit roots, time lags or correlation

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[160] Own Creation.

over time are not considered which is why results may deviate from reality.

The objective is to get an idea about whether or not and to what degree the trade volume may explain the respective variables. For the regression analysis the software Eviews is used. All regression outputs are shown in the Tables 13-46 in the appendix. The following table shows the results of the regressions. The numbers are the adjusted r^2, depicted in percentage.

Summary of the Regression Analyses (Adjusted R^2)					
Independent Variable: Total Trade Volume					
Country / Variable	Brazil	Argentina	Uruguay	Paraguay	Venezuela
GDP	96.16%	84.03%	92.34%	97.13%	96.02%
GDP per Capita	92.87%	73.89%	91.80%	96,71%	95.05%
Unemployment	2.75%	26.05%	26.36%	20.79%	21.82%
Inflation	9.16%	-4.30%	17.02%	34.90%	0.98%
Consumption	9.94%	23.02%	51.60%	60.17%	1.71%
Labor per Person	77.61%	32.12%	87.65%	no data	-2.88%
Labor per Hour	84.77%	61.86%	87.33%	no data	-0.15%

Table 10: Summary of the Regression Analyses[161]

The table shows for each country, how many percent of the respective dependent variable can be explained by the country´s trade volume. The influence of variables with negative results is considered to be zero, since it does not make any sense that less than zero percent of a variable can be explained by trade volume.

It can be observed, that the total trade volume has a highly significant influence on the development of the GDP as well as the GDP per capita. The total trade volume explains a high fraction of the variation in GDP and GDP per capita. With the exception of Argentina, with 84% and 74% respectively, all the countries´r^2 is above the 90%, that is, more than 90% of the GDP and GDP per Capita can be explained by the trade volume. That number seems a little high, what might be due to the previously mentioned restrictions on the results. However, it shows that there is a significant relationship between the trade volume and the GDP and GDP per Capita.

For the variable Unemployment the influence is with an average of about 20% much lower. While Brazil with an r^2 of only 2,75% is the exception, all other countries show an r^2 of between 20% and 26%. These results are far less significant than for the var-

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[161] Own Creation.

iables GDP and GDP per Capita. However, the variables trade volume explains about 20% of the development of unemployment, which is still a considerable influence.

The variable inflation shows mixed results. While the influence of the trade volume on the inflation in Argentina and Venezuela is nearly zero, Brazil, Uruguay and especially Paraguay with 34% show a notable relationship between inflation and trade volume. This leads to the conclusion, that there might be a slight influence of the trade volume. However, other country specific factors that have a stronger influence on inflation might have impacted the development in the respective country more during the examined period of time and thus make it difficult to come to a general conclusion.

When looking at the results of the variable consumption, it can be observed, that the total trade volume explains a high fraction of the variation especially in Uruguay and Paraguay, with 51% and 60% respectively. While Argentina and Brazil still show a considerable relationship between the two variables, the effect of the trade volume on consumption is negligible in Venezuela. As is taken less into account than the other MERCOSUR members, it can be stated, that there is a significant influence of the trade volume on consumption, especially in the comparatively smaller and less developed countries Uruguay and Paraguay.

The variables labor per person and labor per hour, that represent the productivity, both show more or less the same result. While for the counties Brazil, Argentina and Uruguay the trade volume explains a notable part of the two variables, the relationship for Venezuela is zero. Similarly to the variable consumption, also at this point it can be argued, that do to the negligibility of Venezuela, it can be stated that the trade volume explains a significant part of the variation in productivity.

4.3.2 Determinants of economic Growth

To find out, whether or not an increased trade volume leads to economic growth, a model to explain the growth of GDP will be developed in this chapter. With the help of this model, it will be determined, how and to what degree exports and imports as well as other variables influence the growth of GDP.

Considered independent variables for the model are imports, exports, total trade vol-

ume, consumption, inflation, labor per hour worked, labor per person employed and unemployment. The variables GPD per Capita and trade balance are neglected because they are based on other, already used variables. The dependent variable will be the change of GDP. The data is collected for 24 years from 1991 to 2014 and for the countries Brazil, Argentina, Uruguay and Paraguay. Venezuela is not included since it is only a member of MERCOSUR for three years. Thus in total the dataset has 96 observations. Furthermore data for Paraguay will be fully included, even though the country was suspended from MERCOSUR for a year.

The first step is to make single linear regressions in order to determine the influence of the respective variables on the GDP. The individually most significant variables are imports and exports. However this does not mean that these variables need to be in the model and other variables cannot become significant in the model later. The next step is to run multiple regressions in order to try out different combinations of the variables to find some preferred models for further examinations. The goal is to find the models with the fewest independent variables and the highest explanatory power that at the same time also makes sense from an economic point of view. At the same time it is taken into account that all variables are significant, defined by p-value and t-statistic. Furthermore nonlinear functions, polynomial or logarithmic, and finally interactions between variables are tested.

The following table shows a summary of the best models found. The standard errors of the coefficients are shown in parentheses below and individual coefficients are significant at the *5% or **1% significance level.

The regression outputs of these models are furthermore depicted in the tables 46-51 in the appendix.

Summary of the best Models						
Dependent Variable: Change of Gross Domestic Product (US-Dollar)						
Regressor	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Imports		-2,259509* (1,033173)	-1,945893 (1,281424)			
Imports^2				-1,27E-11** (2,25E-12)	-1,30E-11** (2,15E-12)	
Exports	0,745466* (0,379089)	3,090290** (0,967061)	2,844974* (1,120082)			
Exports^2				1,76E-11** (2,75E-12)	1,77E-11** (3,45E-12)	
Change of Total Trade Volume						2958174** (0,587169)
Unemployment	-3,07E+09 (2,12E+09)		-4,58E+09* (2,27E+09)	-3,37E+09 (2,20E+09)		
Inflation					27398165* (13057815)	
Change of Inflation						-65103630** (18916440)
Year		-1,70E+09 (9,23E+08)	-1,80E+09 (1,02E+09)	-1,31E+09 (8,87E+08)		
Intercept	1,94E+10 (1,6E+10)	3,38E+12 (1,85E+12)	3,63E+12 (2,05E+12)	2,66E+12 (1,79E+12)	-6,23E+08 (7,24E+09)	2,03E+09 (8,67E+09)
SER	9,12E+10	9,10E+10	8,98E+10	8,75E+10	8,64E+10	5,92E+10
Adjusted R²	0,234309	0,218292	0,257409	0,294434	0,294111	0,669091

Table 11: Summary of the best Models[162]

After running a few linear single and multiple regressions, the variables that are significantly influencing the GDP are exports and imports. Also it can be stated that in certain models the variables unemployment and inflation can be significant.

The first model includes the variables exports and unemployment. The model shows an adjusted r² of about 23%, though the only included variable that is significant at a 5% level are exports.

The second model in comparison to the first model includes the variable import and excludes the variable unemployment, which slightly worsens the adjusted r², however all included variables are significant at least at a 5% level. Through additionally adding the variable years, the problem of trends can be solved and also the adjusted r² slightly improves. Moreover, the variable years is with a p-value of 0,06 still significant, even though not at a 5% or 1% level.

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[162] Own Creation.

In model three the variable unemployment is added compared to model 2, which leads to a significant increase in the r² compared to model one and two. The variables exports and unemployment are significant at a 5% level, while the other variables with p-values of 0,13 and 0,08 respectively are not highly insignificant.

In model four compared to the previous model the variables exports and imports are put into the power of two. This means that they are non-linear, confirmed when making the redundant variable test. As a result, a further increase in the adjusted r² can be observed. Furthermore the variables are significant at a 1% level, with the exception of unemployment, that with a p-value of 0,16 is only slightly insignificant. Including the variable years in this model leads to a slight improvement of the p-value of unemployment, though it also result in a moderately lower adjusted r². To solve the trend problem however, the variable years stays included.

Model five is similar to model four with the difference, that the variable inflation instead of unemployment is included. The adjusted r² is slightly below the one from model four, however, the variable inflation is significant at a 5% level, while exports and imports remain significant at a 1% level. The variable years though is excluded, because including it would results not only in a less significant variable inflation but also in a lower adjusted r².

Model six includes the variable change of total trade volume instead of exports and imports. Furthermore the variable change of inflation in included. This leads to a strong increase of the r² to almost 67% and both variables are significant at a 1% level. However the included variables show coefficients that do not make sense to be used in an economically meaningful model.

In summary it can be said, that the preferred model is model four. With an adjusted r² of almost 30% and a standard error of the regression of 8,64 it has a reasonable explanatory power and all included variables are significant. Although not all variables are significant at a 5% or even 1% level and also it is not the model with the highest r², model four is the model that makes the most sense considering the previously reviewed theory. Economically one would expect the exports to have a positive influence on the GDP, while imports and unemployment influence it in a negative way. The independent variables exports, imports and unemployment explain 30% of the

change of the GDP.

The estimated regression line is shown in the table below.

The estimated Regression Line
Change of GDP = 2,66 - 1,27 Imports + 1,76 Exports - 3,37 Unemployment - 1,31 Years (1,79)   (2,25)   (2,75)   (2,20)   (8,87)

Table 12: The estimated Regression Line[163]

The intercept is at 2,66. The exports have a positive coefficient of 1,76. That means for each one unit increase of exports the GDP will increase by 1,76. The imports have a coefficient of -1,27. That means for each unit increase of imports the GDP will decrease by 1,27. The variable unemployment has a coefficient of -3,37. That means for each one unit increase of unemployment the GDP will decrease by 3,37. Furthermore, according to model the GDP will decrease by 1,31 for each one unit increase of years, however, practically this influence can be neglected because the variable years in only included to prevent trend problems.

4.4 Comparison of Theory with Results of the Research

After reviewing the most important theory about international trade, the following results concerning the benefits of free trade can be summarized. It is important to remark, that merely the economic effects are analyzed and thus benefits like increased consumption possibilities, international migration or diversification of wealth are neglected.

Removing restrictions and creating a more liberal trade environment results in a quickly growing trade volume and hence free trade after all may cause greater growth.[164]

It can be stated, that in all examined countries, the exports as well as the imports, and thus the trade volume overall, have increased. An exception makes Venezuela that shows decreasing exports in recent years, however, as mentioned before, Venezuela, due to its short history in MERCOSUR, cannot be fully taken into account when making conclusions.

Based on comparative advantage, trade will increase total production and thus total

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[163] Own Creation.

[164] Cf. Krugman, Obstfeld and Melitz, 2010, p.268; Bhagwati, 2002, p.41-42.

economic output in the economy.[165] Furthermore, free trade increases economic growth through capital accumulation, incentives for innovation and knowledge spillovers.[166]

Actually, in all five analyzed countries, a more or less strong increase in GDP can be seen. Additionally a highly significant relationship between the total trade volume and the variation of GDP is observable.

The effects of this increase in GDP on the consumption, however, remains inconclusive, since in some countries the consumption expenditure rose, while in others shows a decline. Moreover the regression analysis shows mixed results concerning the influence of the trade volume on the consumption.

Through the trade restrictions, economic incentives of consumers and producers are distorted and thus cause losses for the economy. In turn, through free trade these distortions and losses are eliminated and national welfare rises, especially in developing countries.[167]

In reality, an increase in the income per person, measured by GDP per capita, can be observed in all the evaluated countries. Furthermore the regression analysis shows a significant influence of the trade volume on the GDP per capita.

Unemployment in the short-term may increase, but because jobs only move from one industry to another, after a time of adjustment, in the long run the net effect on employment should be approximately leveled out.[168]

Looking at the unemployment data of the MERCOSUR members, it can be observed, that the unemployment, as stated in theory, increased in the short run in all cases, but then later on actually even fell below the rate previous to the foundation of MERCOSUR. Moreover the regression showed that there is a considerable relationship between unemployment and total trade volume.

Higher competition leads to an increase in research and innovation and thus increases the amount of firms with high productivity and thus raises the efficiency of an

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[165] CF. Mankiw, (2011), p.54.

[166] Cf. World Trade Organization, 2008, p.61.

[167] Cf. Krugman, Obstfeld and Melitz, 2010, p.220.

[168] Cf. Gould, Ruffin, Woodbridge, 1993, p. 8-9; Irwin, 2002, p.70-71.

economy as a whole.[169]

As observed in the prior analysis, both productivity measures used, that is labor productivity per person employed as well as labor productivity per hour worked, increased, with the exception of Venezuela. Also in the regression analysis significant relationships between the trade volume and the two measures of productivity can be observed, with the exception of Venezuela that does not show any influence between the variables.

Additionally more Competition results in lower prices for consumers.[170]

Actually it can be stated that the inflation, measures by the GDP deflator, has significantly decreased in Brazil, Argentina Uruguay and Paraguay. The exception makes again Venezuela that showed an increase. The conducted regressions showed a rather low or even no relationship between inflation and the total trade volume.

After comparing the theory with the results of the research the following conclusions can be summarized. In the case of MERCOSUR, the free trade agreement led to an increase of exports and imports and thus the total trade volume rose. This increase in turn led to an increase of the GDP and the GDP per capita as well as a decrease in unemployment and inflation. Moreover, the productivity increased, whereas the expected increase in consumption remained absent. These conclusions summarize the general effects observed in the research. The impacts of the free trade agreement can be, as previously shown, more or less intensively observed in each county. This is due to the fact, that the trade volume only explains a part of the variation of the respective variable and many other factors have to be considered as well when explaining the development.

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[169] Cf. Krugman, Obstfeld and Melitz, 2010, p.220-222.

[170] Cf. Pettinger, n.d..

5 Conclusion

In the following, the results of the previous study will be summarized and a conclusion about the impacts of free trade agreements for the case of MERCOSUR will be made. In order to do that, the questions stated in the introduction will be answered.

After reviewing the most important and relevant literature about free trade, the following facts and advantages of a free trade agreement from an economical point of view can be summarized.

According to the theory, intentions and factors that cause international trade are differences in technology or endowments, economies of scale in production, access to a broader variety of goods, increase competition and reduce monopoly power, increase productivity and stimulate economic growth.[171]

Evidence shows, that usually the interplay of several different factors explains the pattern of international trade and the mix of factors depends on whether the trading partners´ industries are similar or different and whether the countries are developed or developing.[172]

Who gains from trade, producer or consumer, depends on whether a country becomes an importer or exporter after opening up to trade. However, overall the gains exceed the losses and thus make trade beneficial. [173]

Free trade as well as restrictive trade is considered to be better that autarky. Furthermore, free trade is more beneficial than restrictive trade.[174] The optimal restrictive trade policy only exists in theory and costs from restricting trade are large, even larger when considering the additional benefits from free trade.[175]

A more liberal trade environment results in a quickly growing trade volume, total production and economic output increase, the economy grows and national welfare ris-

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[171] Cf. World Trade Organization, 2008, p.27.

[172] Cf. World Trade Organization, 2008, p.xiv-xvi.

[173] Cf. Mankiw, (2011), p.182-186.

[174] Cf. World Trade Organization, 2008, p.27.

[175] Cf. Grossman, 1986, p.47-68; Cf. Krugman, Obstfeld and Melitz, 2010, p.220-222.

es.[176] Furthermore unemployment remains unchanged in the long run, whereas competition will increase productivity and decrease inflation.[177]

After comparing the theory with the results of the research the following conclusions can be made. In the case of MERCOSUR, the exports and imports and thus the total trade volume increased. Moreover the GDP and the GDP per capita and thus national welfare increased, whereas unemployment and inflation decreased. Additionally, the productivity increased, whereas an increase in consumption remained absent. These conclusions summarize the general effects observed in the research. The impacts of the free trade agreement can be, as previously shown, more or less intensively observed in each county.

The trade volume only explains a part of the variation of the respective variable and many other factors have to be considered as well when explaining the development. The total trade volume in case of MERCOSUR has a significant influence on GDP and GDP per Capita, while the effect on the other variables is less significant.

Furthermore the variables imports, exports and unemployment are the ones that significantly explain the growth of GDP and thus are included in the developed model. While imports and unemployment have a negative influence, exports are affecting the GDP positively.

The hypothesis that free trade increases the trade volume, which in turn affects other economic variables and eventually leads to economic growth, can under some restrictions be confirmed for the case of MERCOSUR.

These restrictions are the mentioned differences in some data, depending on how variables are defined by the publishing institution and also the econometric problems of structural breaks, unit roots, trends, time lags and correlation over time.

Overall it can be stated that since the introduction of MERCOSUR, not all variables

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[176] Cf. Krugman, Obstfeld and Melitz, 2010, p.220, 268; Bhagwati, 2002, p.41-42; Cf. World Trade Organization, 2008, p.61; CF. Mankiw, (2011), p.54.

[177] Cf. Gould, Ruffin, Woodbridge, 1993, p. 8-9; Irwin, 2002, p.70-71; Cf. Krugman, Obstfeld and Melitz, 2010, p.220-222; Cf. Pettinger, n.d..

developed as suggested by theory, however, the majority of the economic fundamentals in the member countries developed in a positive way.

In summary the introduction of MERCOSUR overall has had a positive impact on the member countries and thus has been a successful project so far.

However, the results apply for MERCOSUR only and the impacts cannot be generalized and transferred to other trade agreements. The economic development depends on various factors and impacts on economies of future trade agreements remain to be subject to further research.

Appendix

1 Tables and Figures

1.1 Equilibrium without Trade

The following figure shows the equilibrium without trade.
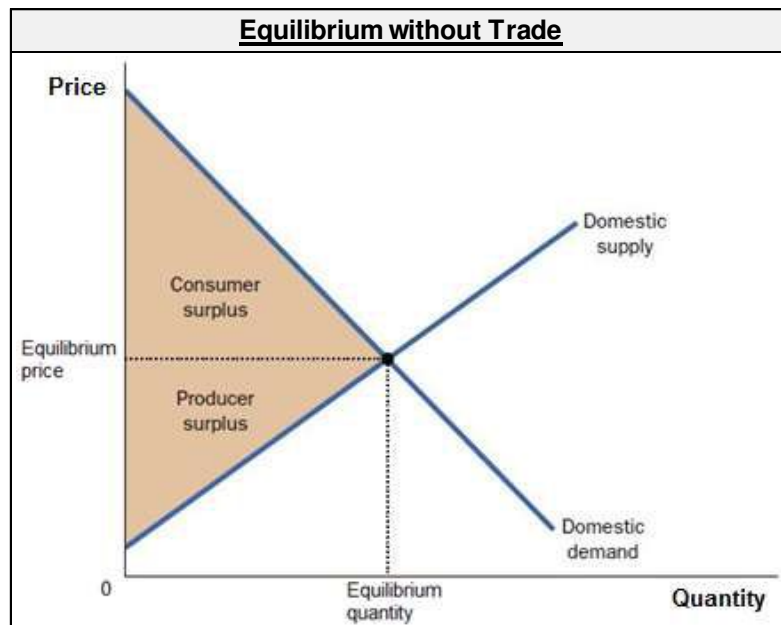
Figure 23: Equilibrium without Trade[178]

1.2 Gains and Losses for an Exporting Economy

The following figure shows the new equilibrium, when the domestic economy becomes an exporter after opening up to trade.
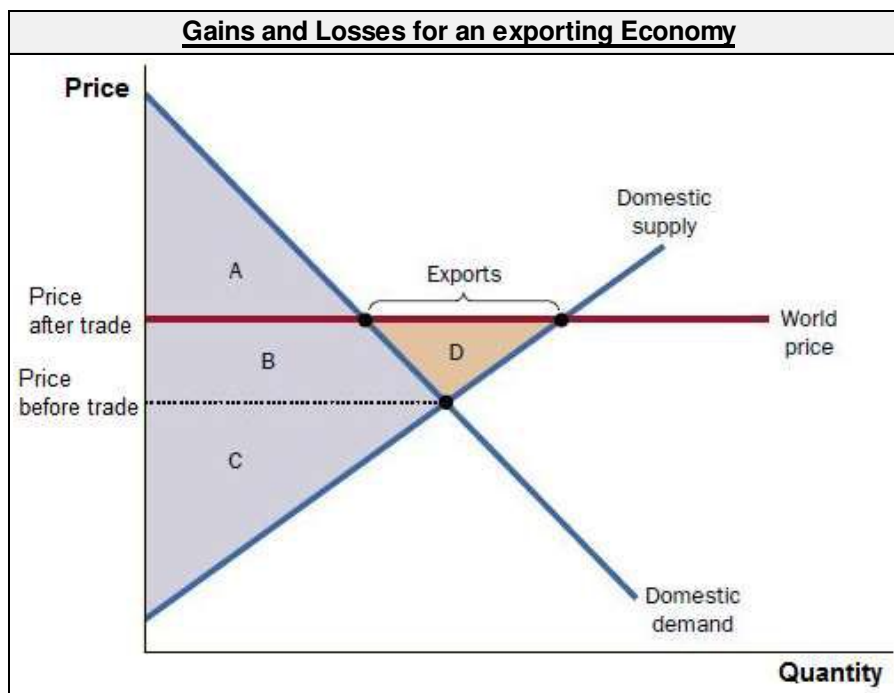
Figure 24: Gains and Losses for an exporting Economy[179]

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[178] Mankiw, (2011), p.181.

[179] Mankiw, (2011), p.184.

The gains and losses can be observed in the graph above, as the producer surplus increases from by the area B and D after trade is allowed, while the consume surplus decreases by the area B.[180]

1.3 Gains and Losses for an importing Economy

The following figure shows the new equilibrium, when the domestic economy becomes an importer after opening up to trade.
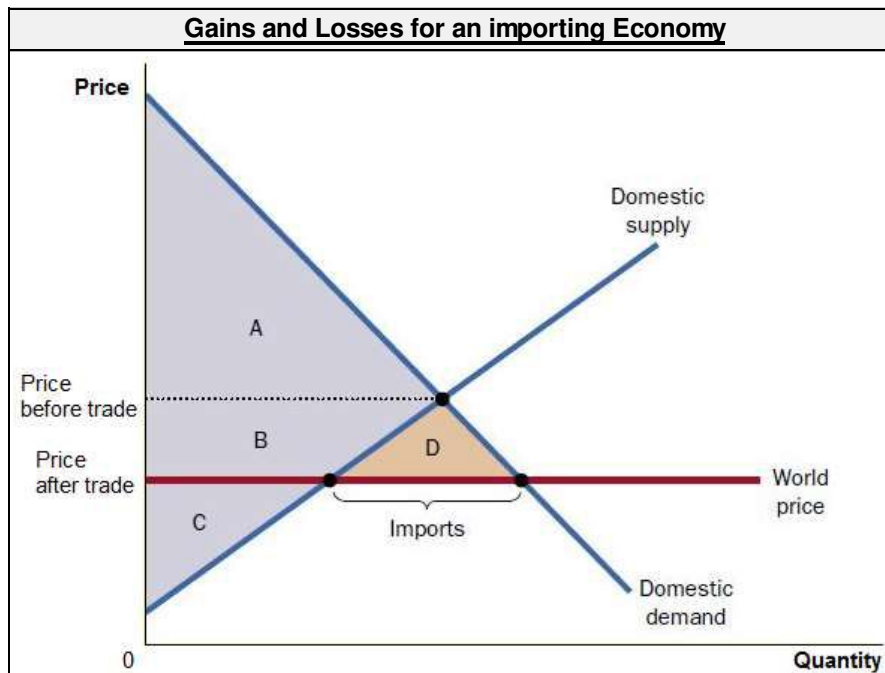
Figure 25: Gains and Losses for an Importing Economy[181]

The gains and losses can be observed in the graph above, as the producer surplus decreases to only the area C after trade is allowed, while the consume surplus increases by the area B and D.[182]

1.4 The Effects of a Tariff

The following figure shows the impacts of a tariff on the economy graphically.

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[180] Cf. Mankiw, 2011, p.182-184.

[181] Mankiw, (2011), p.186.

[182] Cf. Mankiw, 2011, p.184-186.
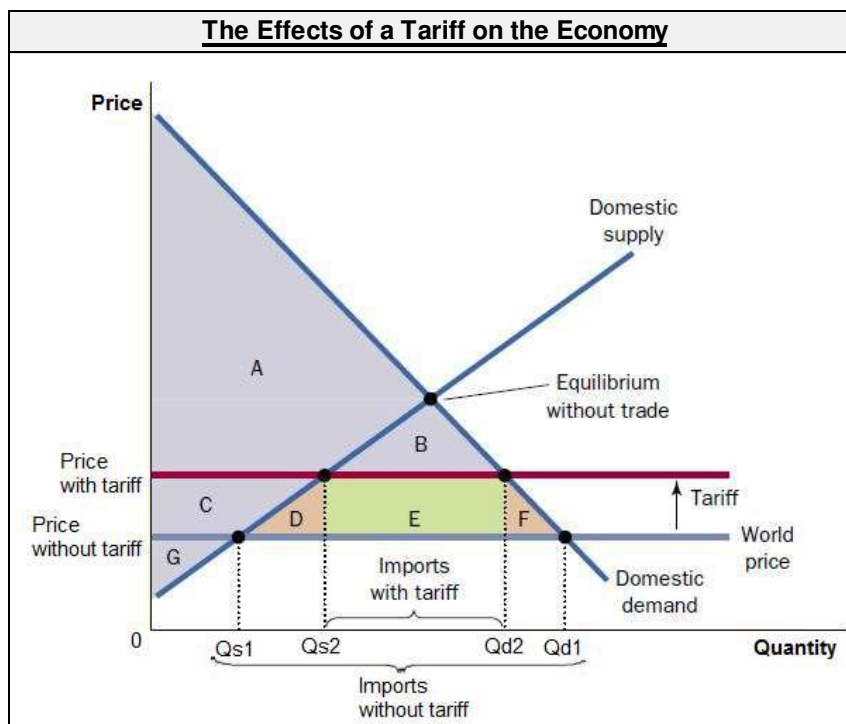
Figure 26: The Effects of a Tariff in the Economy[183]

As shown in the graphic above, after introduction of a tariff, the consumer surplus is reduced to only the areas A and B, while the producer surplus increases by the area C. Additionally with the revenue raises by the government appears a third party that also gains from imposing a tariff. The overall surplus, however, is reduced by the areas D and F that represent the deadweight loss arising from the tariff.[184]

1.5 The Effects of an Import Quota

The following figure shows the case of an import quota and its impacts on the economy.

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[183] Mankiw, (2011), p.188.

[184] Cf. Mankiw, (2011), p.186-188.
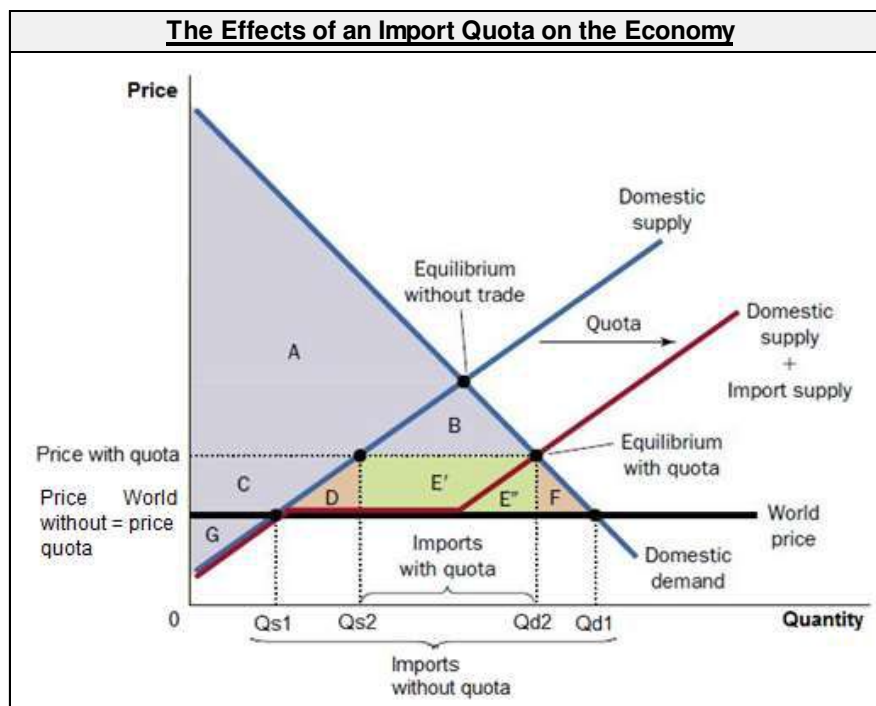
Figure 27: The Effects of an Import Quota in the Economy[185]

Before the import quota, the producer surplus equals area G and the consumer surplus equals all the rest of the existing areas. After introducing the import quota, the consumer surplus is reduced to the areas A and B, while the producer surplus increases to the areas G and C. The importers of the good make a surplus of the areas E´and E´´, as already stated due to the price difference. The total surplus is reduced by the areas D and F, again the so called deadweight loss.[186]

1.6 The Effects of an Export Subsidy

The following figure shows impacts of export subsidies on the economy.

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[185] Mankiw, (2011), p.190.

[186] Cf. Mankiw, (2011), p.189-190.
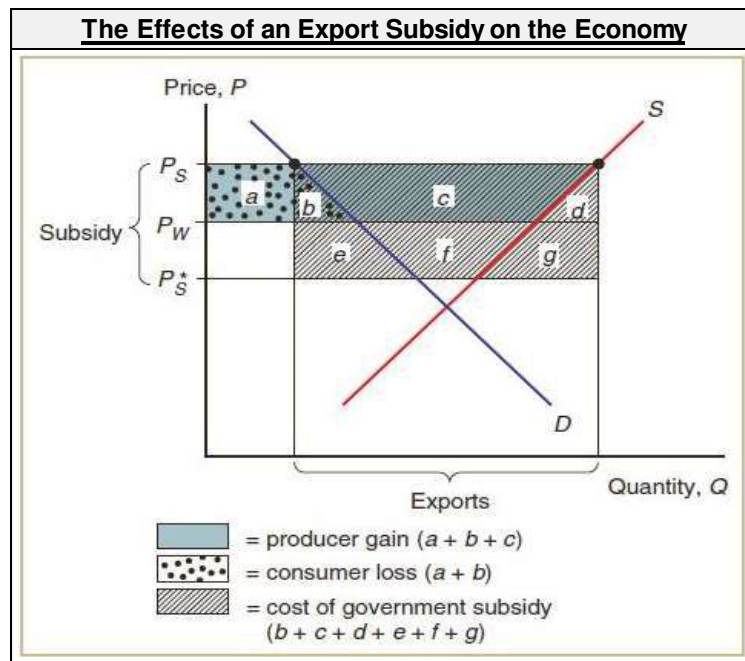
Figure 28: The Effects of an Export Subsidy on the Economy[187]

The figure shows, as already stated, that the domestic price increases from Pw to Ps, whereas the price in the importing country decreases from Pw to P*s. In the exporting country, the producers gain, while consumers and the government lose. The overall decrease in welfare is shown by the area b+d+e+f+g.[188]

1.7 The Optimum Tariff

The following figure shows the optimum tariff graphically.
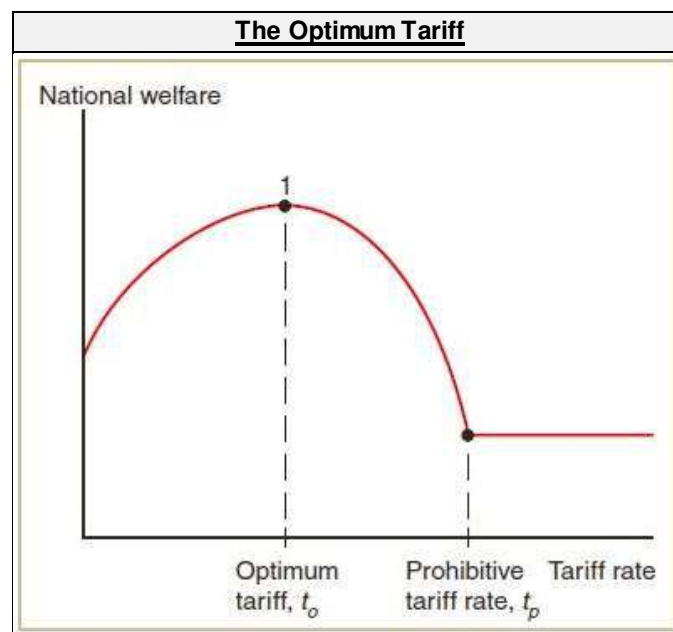
Figure 29: The Optimum Tariff[189]

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[187] Krugman, Obstfeld and Melitz, 2010, p.203.

[188] Cf. Krugman, Obstfeld and Melitz, 2010, p.204.

[189] Krugman, Obstfeld and Melitz, 2010, p.225.

As the tariff rate increases, the costs begin to increase more rapidly and eventually exceed the benefits and the curve turns downward, up until the point, where trade is completely prohibited. At that point, the country is left worse off and a further increase of the tariff has no effect, hence the curve turns into a horizontal line. The optimum tariff, where the national welfare reaches its maximum, is always positive but less that the rate that does not allow trade at all.[190]

1.8 The domestic Market Failure Argument

The following figure shows the case of the market failure argument graphically.
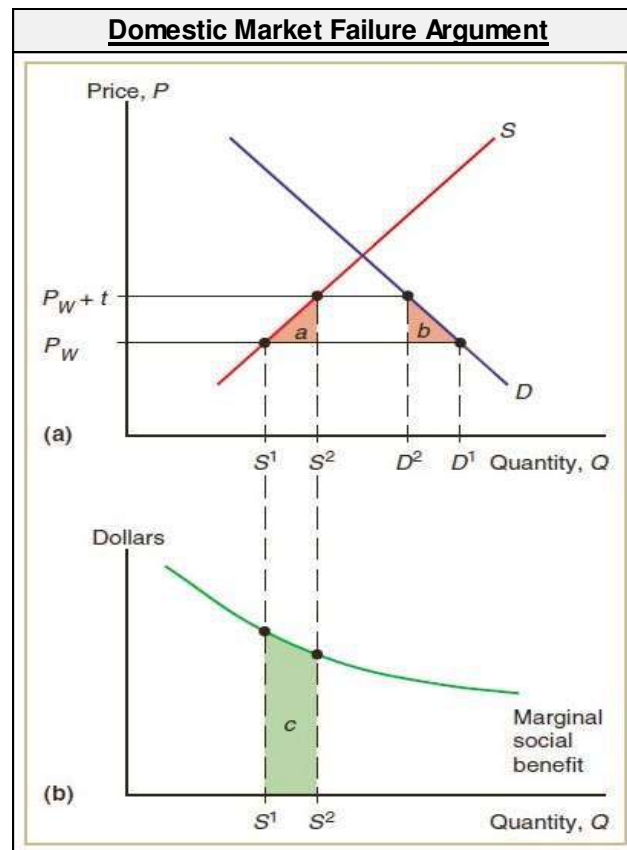
Figure 30: Domestic Market Failure Argument[191]

Figure A shows the traditional cost-benefit analysis of a tariff in a small country. Figure B shows the mentioned marginal benefit. If a country imposes a tariff, the price of goods increases and in turn production increases, whereas consumption decreases, resulting in one production distortion respectively and an overall reduced welfare. However, as shown in figure B, the increased supply causes a social benefit that similarly to the argumentation with the optimum tariff exceeds the costs up until a certain point and thus increases the overall welfare of a nation.[192]

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[190] Cf. Krugman, Obstfeld and Melitz, 2010, p.224-226.

[191] Krugman, Obstfeld and Melitz, 2010, p.227.

[192] Cf. Krugman, Obstfeld and Melitz, 2010, p.224-226.

1.9 Efficiency Increase with free Trade

The following figure shows again the case of a tariff.
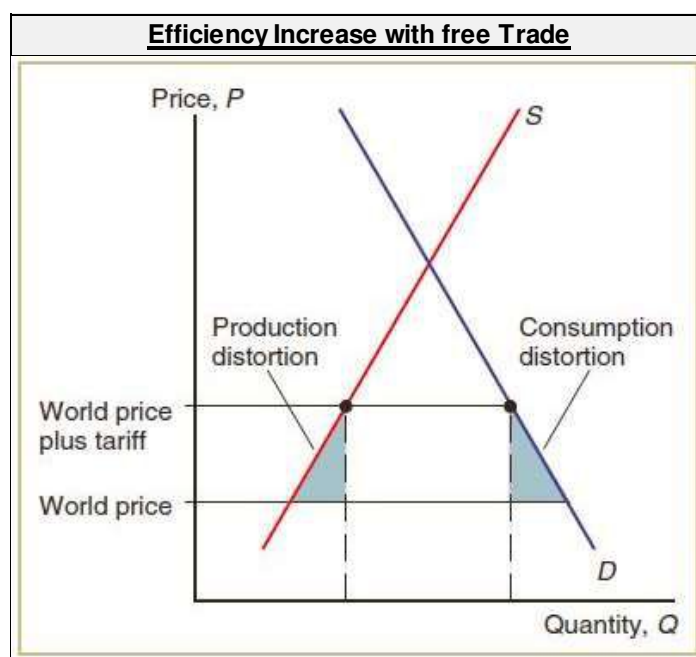
Figure 31: Efficiency Increase with free Trade[193]

1.10 Number of existing regional Trade Agreements

The following figure shows the number of regional trade agreements existing.
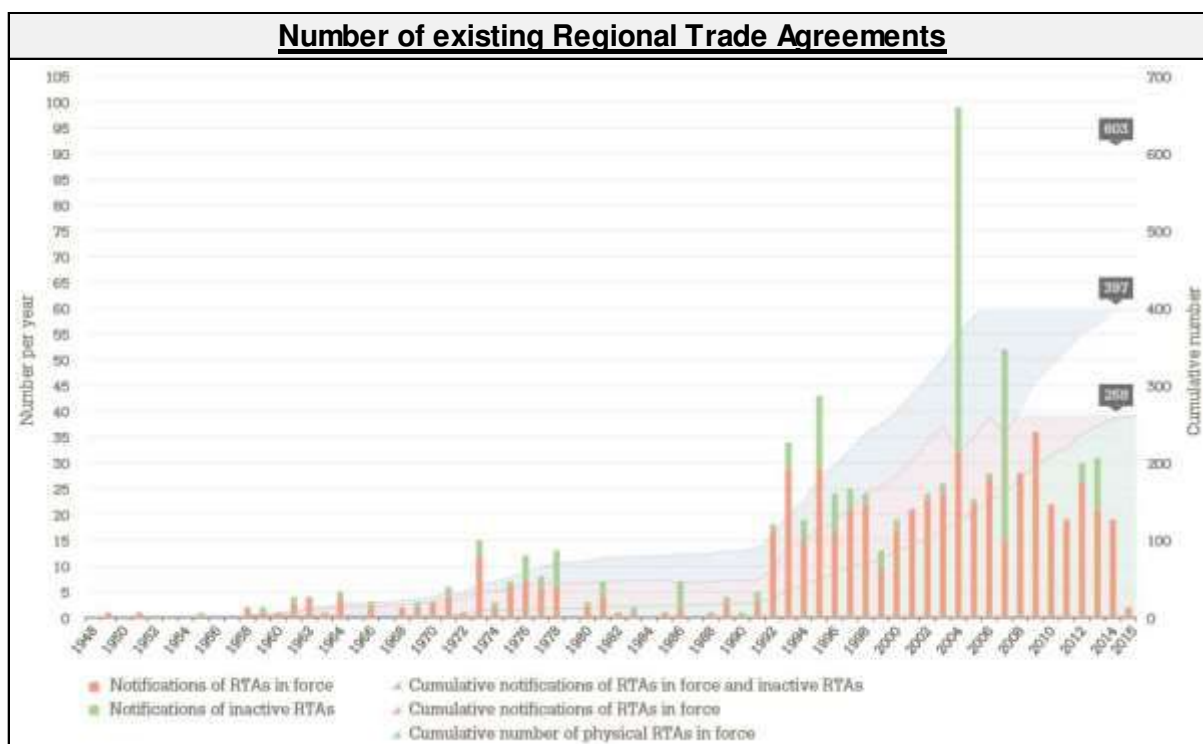
Figure 32: Number of existing Regional Trade Agreements[194]

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[193] Krugman, Obstfeld and Melitz, 2010, p.220.

[194] World Trade Organization, 2015, *Annual Report 2015,* p.76.

1.11 Regression Outputs

1.11.1 Single Linear Regressions Brazil

Dependent Variable: GDP_BRAZIL
Method: Least Squares
Date: 01/19/16   Time: 16:01
Sample: 1991 2014
Included observations: 24
White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.30E+11	4.73E+10	2.736880	0.0120
TOTAL_TRADE_VOLUME_BRAZI	3.763003	0.146335	25.71505	0.0000

R-squared	0.963271	Mean dependent var		1.14E+12
Adjusted R-squared	0.961601	S.D. dependent var		7.45E+11
S.E. of regression	1.46E+11	Akaike info criterion		54.33116
Sum squared resid	4.69E+23	Schwarz criterion		54.42933
Log likelihood	-649.9739	Hannan-Quinn criter.		54.35720
F-statistic	576.9742	Durbin-Watson stat		0.722283
Prob(F-statistic)	0.000000			

Table 13: GDP Brazil[195]

Dependent Variable: GDP_PER_CAPITA_BRAZIL
Method: Least Squares
Date: 01/20/16   Time: 13:51
Sample: 1991 2014
Included observations: 24
White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1542.901	328.1785	4.701409	0.0001
TOTAL_TRADE_VOLUME_BRAZI	1.70E-08	8.93E-10	19.04033	0.0000

R-squared	0.931843	Mean dependent var		6127.717
Adjusted R-squared	0.928745	S.D. dependent var		3420.958
S.E. of regression	913.1764	Akaike info criterion		16.55139
Sum squared resid	18345605	Schwarz criterion		16.64956
Log likelihood	-196.6167	Hannan-Quinn criter.		16.57744
F-statistic	300.7855	Durbin-Watson stat		0.611838
Prob(F-statistic)	0.000000			

Table 14: GDP per Capita Brazil[196]

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[195] Eviews, Workfile Brazil.

[196] Eviews, Workfile Brazil.

Dependent Variable: UNEMPLOYMENT_BRAZIL
Method: Least Squares
Date: 01/19/16   Time: 16:02
Sample (adjusted): 1991 2013
Included observations: 23 after adjustments
White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.269181	0.548961	15.06334	0.0000
TOTAL_TRADE_VOLUME_BRAZI	-1.98E-12	1.36E-12	-1.453603	0.1608
R-squared	0.071702	Mean dependent var		7.765217
Adjusted R-squared	0.027497	S.D. dependent var		1.360685
S.E. of regression	1.341847	Akaike info criterion		3.508912
Sum squared resid	37.81161	Schwarz criterion		3.607651
Log likelihood	-38.35249	Hannan-Quinn criter.		3.533745
F-statistic	1.622037	Durbin-Watson stat		0.228551
Prob(F-statistic)	0.216725			

Table 15: Unemployment Brazil[197]

Dependent Variable: INFLATION_BRAZIL
Method: Least Squares
Date: 01/19/16   Time: 16:02
Sample: 1991 2014
Included observations: 24
White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	561.0127	264.5408	2.120704	0.0455
TOTAL_TRADE_VOLUME_BRAZI	-1.16E-09	5.51E-10	-2.111730	0.0463
R-squared	0.131087	Mean dependent var		247.2917
Adjusted R-squared	0.091591	S.D. dependent var		624.1095
S.E. of regression	594.8418	Akaike info criterion		15.69412
Sum squared resid	7784408.	Schwarz criterion		15.79229
Log likelihood	-186.3295	Hannan-Quinn criter.		15.72017
F-statistic	3.318996	Durbin-Watson stat		0.825529
Prob(F-statistic)	0.082109			

Table 16: Inflation Brazil[198]

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[197] Eviews, Workfile Brazil.

[198] Eviews, Workfile Brazil.

Dependent Variable: CONSUMPTION_EXPENDITURE_
Method: Least Squares
Date: 01/19/16   Time: 16:03
Sample: 1991 2014
Included observations: 24
White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	62.97065	0.630259	99.91241	0.0000
TOTAL_TRADE_VOLUME_BRAZI	-3.42E-12	1.56E-12	-2.190084	0.0394
R-squared	0.138544	Mean dependent var		62.04755
Adjusted R-squared	0.099387	S.D. dependent var		1.786292
S.E. of regression	1.695203	Akaike info criterion		3.973137
Sum squared resid	63.22168	Schwarz criterion		4.071308
Log likelihood	-45.67765	Hannan-Quinn criter.		3.999182
F-statistic	3.538160	Durbin-Watson stat		0.471913
Prob(F-statistic)	0.073274			

Table 17: Consumption Brazil[199]

Dependent Variable: LABOR_PER_PERSON_EMPLOYE
Method: Least Squares
Date: 01/19/16   Time: 16:03
Sample: 1991 2014
Included observations: 24
White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	23541.45	425.8664	55.27897	0.0000
TOTAL_TRADE_VOLUME_BRAZI	9.20E-09	9.41E-10	9.775343	0.0000
R-squared	0.785845	Mean dependent var		26022.25
Adjusted R-squared	0.776111	S.D. dependent var		2015.675
S.E. of regression	953.7550	Akaike info criterion		16.63835
Sum squared resid	20012267	Schwarz criterion		16.73652
Log likelihood	-197.6602	Hannan-Quinn criter.		16.66439
F-statistic	80.72956	Durbin-Watson stat		0.322737
Prob(F-statistic)	0.000000			

Table 18: Labor per Person Brazil[200]

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[199] Eviews, Workfile Brazil.

[200] Eviews, Workfile Brazil.

Dependent Variable: LABOR_PER_HOUR_WORKED_BR
Method: Least Squares
Date: 01/19/16   Time: 16:03
Sample: 1991 2014
Included observations: 24
White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	12.60626	0.255925	49.25763	0.0000
TOTAL_TRADE_VOLUME_BRAZI	7.21E-12	5.87E-13	12.28383	0.0000

R-squared	0.854356	Mean dependent var		14.55148
Adjusted R-squared	0.847736	S.D. dependent var		1.515815
S.E. of regression	0.591486	Akaike info criterion		1.867299
Sum squared resid	7.696833	Schwarz criterion		1.965470
Log likelihood	-20.40759	Hannan-Quinn criter.		1.893344
F-statistic	129.0535	Durbin-Watson stat		0.494563
Prob(F-statistic)	0.000000			

Table 19: Labor per Hour Brazil[201]

1.11.2 Single Linear Regressions Argentina

Dependent Variable: GDP_ARGENTINA
Method: Least Squares
Date: 01/19/16   Time: 16:11
Sample: 1991 2014
Included observations: 24
White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.66E+10	2.42E+10	3.576593	0.0017
TOTAL_TRADE_VOLUME_ARG...	2.597677	0.232841	11.15644	0.0000

R-squared	0.847289	Mean dependent var		3.20E+11
Adjusted R-squared	0.840347	S.D. dependent var		1.44E+11
S.E. of regression	5.74E+10	Akaike info criterion		52.46522
Sum squared resid	7.26E+22	Schwarz criterion		52.56339
Log likelihood	-627.5827	Hannan-Quinn criter.		52.49127
F-statistic	122.0629	Durbin-Watson stat		0.425121
Prob(F-statistic)	0.000000			

Table 20: GDP Argentina[202]

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[201] Eviews, Workfile Brazil.

[202] Eviews, Workfile Argentina.

Dependent Variable: GDP_PER_CAPITA_ARGENTINA
Method: Least Squares
Date: 01/20/16   Time: 13:50
Sample: 1991 2014
Included observations: 24
White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3438.650	703.7479	4.886196	0.0001
TOTAL_TRADE_VOLUME_ARG...	5.32E-08	5.86E-09	9.076950	0.0000
R-squared	0.750279	Mean dependent var		8217.323
Adjusted R-squared	0.738928	S.D. dependent var		3128.266
S.E. of regression	1598.394	Akaike info criterion		17.67104
Sum squared resid	56207011	Schwarz criterion		17.76921
Log likelihood	-210.0525	Hannan-Quinn criter.		17.69709
F-statistic	66.09824	Durbin-Watson stat		0.371002
Prob(F-statistic)	0.000000			

Table 21: GDP per Capita Argentina[203]

Dependent Variable: UNEMPLOYMENT_ARGENTINA
Method: Least Squares
Date: 01/19/16   Time: 16:12
Sample (adjusted): 1991 2013
Included observations: 23 after adjustments
White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	15.60269	1.990794	7.837419	0.0000
TOTAL_TRADE_VOLUME_ARG...	-4.58E-11	1.49E-11	-3.082066	0.0057
R-squared	0.294074	Mean dependent var		11.63478
Adjusted R-squared	0.260459	S.D. dependent var		4.190531
S.E. of regression	3.603714	Akaike info criterion		5.484748
Sum squared resid	272.7218	Schwarz criterion		5.583487
Log likelihood	-61.07460	Hannan-Quinn criter.		5.509581
F-statistic	8.748170	Durbin-Watson stat		0.385251
Prob(F-statistic)	0.007512			

Table 22: Unemployment Argentina[204]

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[203] Eviews, Workfile Argentina.

[204] Eviews, Workfile Argentina.

Dependent Variable: INFLATION_ARGENTINA
Method: Least Squares
Date: 01/19/16   Time: 16:12
Sample: 1991 2014
Included observations: 24
White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	18.75893	17.33702	1.082016	0.2910
TOTAL_TRADE_VOLUME_ARG...	-2.56E-11	1.34E-10	-0.191846	0.8496
R-squared	0.002336	Mean dependent var		16.45833
Adjusted R-squared	-0.043012	S.D. dependent var		26.98789
S.E. of regression	27.56218	Akaike info criterion		9.550421
Sum squared resid	16712.82	Schwarz criterion		9.648592
Log likelihood	-112.6051	Hannan-Quinn criter.		9.576466
F-statistic	0.051523	Durbin-Watson stat		1.040343
Prob(F-statistic)	0.822531			

Table 23: Inflation Argentina[205]

Dependent Variable: CONSUMPTION_EXPENDITURE_
Method: Least Squares
Date: 01/19/16   Time: 16:12
Sample: 1991 2014
Included observations: 24
White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	72.53822	2.460340	29.48301	0.0000
TOTAL_TRADE_VOLUME_ARG...	-5.06E-11	1.88E-11	-2.694656	0.0132
R-squared	0.263690	Mean dependent var		67.99656
Adjusted R-squared	0.230221	S.D. dependent var		5.015055
S.E. of regression	4.400060	Akaike info criterion		5.880769
Sum squared resid	425.9316	Schwarz criterion		5.978940
Log likelihood	-68.56923	Hannan-Quinn criter.		5.906814
F-statistic	7.878719	Durbin-Watson stat		0.704418
Prob(F-statistic)	0.010273			

Table 24: Consumption Argentina[206]

---

[205] Eviews, Workfile Argentina.

[206] Eviews, Workfile Argentina.

Dependent Variable: LABOR_PER_PERSON_EMPLOYE
Method: Least Squares
Date: 01/19/16   Time: 16:13
Sample: 1991 2014
Included observations: 24
White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	34803.69	1040.593	33.44602	0.0000
TOTAL_TRADE_VOLUME_ARG...	3.06E-08	7.09E-09	4.315102	0.0003
R-squared	0.350697	Mean dependent var		37550.08
Adjusted R-squared	0.321184	S.D. dependent var		2629.686
S.E. of regression	2166.606	Akaike info criterion		18.27937
Sum squared resid	1.03E+08	Schwarz criterion		18.37754
Log likelihood	-217.3524	Hannan-Quinn criter.		18.30541
F-statistic	11.88251	Durbin-Watson stat		0.313650
Prob(F-statistic)	0.002298			

Table 25: Labor per Person Argentina[207]

Dependent Variable: LABOR_PER_HOUR_WORKED_AR
Method: Least Squares
Date: 01/19/16   Time: 16:13
Sample: 1991 2014
Included observations: 24
White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	18.89004	0.455621	41.45997	0.0000
TOTAL_TRADE_VOLUME_ARG...	2.11E-11	3.55E-12	5.965093	0.0000
R-squared	0.635153	Mean dependent var		20.78943
Adjusted R-squared	0.618569	S.D. dependent var		1.351396
S.E. of regression	0.834624	Akaike info criterion		2.555984
Sum squared resid	15.32513	Schwarz criterion		2.654155
Log likelihood	-28.67180	Hannan-Quinn criter.		2.582028
F-statistic	38.29926	Durbin-Watson stat		0.523851
Prob(F-statistic)	0.000003			

Table 26: Labor per Hour Argentina[208]

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[207] Eviews, Workfile Argentina.

[208] Eviews, Workfile Argentina.

1.11.3 Single Linear Regressions Uruguay

Dependent Variable: GDP_URUGUAY
Method: Least Squares
Date: 01/19/16   Time: 16:20
Sample: 1991 2014
Included observations: 24
White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.64E+09	1.29E+09	3.583772	0.0017
TOTAL_TRADE_VOLUME_URUGU	1.712127	0.093466	18.31819	0.0000

R-squared	0.926773	Mean dependent var		2.62E+10
Adjusted R-squared	0.923445	S.D. dependent var		1.43E+10
S.E. of regression	3.95E+09	Akaike info criterion		47.11234
Sum squared resid	3.44E+20	Schwarz criterion		47.21051
Log likelihood	-563.3481	Hannan-Quinn criter.		47.13838
F-statistic	278.4371	Durbin-Watson stat		0.404400
Prob(F-statistic)	0.000000			

Table 27: GDP Uruguay[209]

Dependent Variable: GDP_PER_CAPITA_URUGUAY
Method: Least Squares
Date: 01/20/16   Time: 13:52
Sample: 1991 2014
Included observations: 24
White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1656.076	389.3952	4.252943	0.0003
TOTAL_TRADE_VOLUME_URUGU	4.93E-07	2.70E-08	18.27048	0.0000

R-squared	0.921612	Mean dependent var		7871.303
Adjusted R-squared	0.918049	S.D. dependent var		4120.857
S.E. of regression	1179.684	Akaike info criterion		17.06354
Sum squared resid	30616405	Schwarz criterion		17.16171
Log likelihood	-202.7624	Hannan-Quinn criter.		17.08958
F-statistic	258.6541	Durbin-Watson stat		0.381245
Prob(F-statistic)	0.000000			

Table 28: GDP per Capita Uruguay[210]

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[209] Eviews, Workfile Uruguay.

[210] Eviews, Workfile Uruguay.

```
Dependent Variable: UNEMPLOYMENT_URUGUAY
Method: Least Squares
Date: 01/19/16   Time: 16:20
Sample (adjusted): 1991 2013
Included observations: 23 after adjustments
White heteroskedasticity-consistent standard errors & covariance
```

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.784699	0.506901	19.30297	0.0000
TOTAL_TRADE_VOLUME_URUGU	-1.10E-10	2.32E-11	-4.756697	0.0001
R-squared	0.297088	Mean dependent var		8.469565
Adjusted R-squared	0.263616	S.D. dependent var		1.511602
S.E. of regression	1.297148	Akaike info criterion		3.441155
Sum squared resid	35.33447	Schwarz criterion		3.539893
Log likelihood	-37.57328	Hannan-Quinn criter.		3.465987
F-statistic	8.875717	Durbin-Watson stat		1.293261
Prob(F-statistic)	0.007153			

Table 29: Unemployment Uruguay[211]

```
Dependent Variable: INFLATION_URUGUAY
Method: Least Squares
Date: 01/19/16   Time: 16:20
Sample: 1991 2014
Included observations: 24
White heteroskedasticity-consistent standard errors & covariance
```

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	36.61086	10.35098	3.536945	0.0019
TOTAL_TRADE_VOLUME_URUGU	-1.32E-09	5.18E-10	-2.539665	0.0187
R-squared	0.206250	Mean dependent var		20.00000
Adjusted R-squared	0.170170	S.D. dependent var		23.28089
S.E. of regression	21.20773	Akaike info criterion		9.026263
Sum squared resid	9894.888	Schwarz criterion		9.124435
Log likelihood	-106.3152	Hannan-Quinn criter.		9.052308
F-statistic	5.716535	Durbin-Watson stat		0.272361
Prob(F-statistic)	0.025794			

Table 30: Inflation Uruguay[212]

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[211] Eviews, Workfile Uruguay.

[212] Eviews, Workfile Uruguay.

```
Dependent Variable: CONSUMPTION_EXPENDITURE_
Method: Least Squares
Date: 01/19/16   Time: 16:21
Sample: 1991 2014
Included observations: 24
White heteroskedasticity-consistent standard errors & covariance
```

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	74.68764	0.879720	84.89931	0.0000
TOTAL_TRADE_VOLUME_URUGU	-2.96E-10	4.03E-11	-7.344130	0.0000
R-squared	0.537090	Mean dependent var		70.95743
Adjusted R-squared	0.516049	S.D. dependent var		3.239774
S.E. of regression	2.253800	Akaike info criterion		4.542768
Sum squared resid	111.7515	Schwarz criterion		4.640939
Log likelihood	-52.51322	Hannan-Quinn criter.		4.568813
F-statistic	25.52546	Durbin-Watson stat		0.583052
Prob(F-statistic)	0.000046			

Table 31: Consumption Uruguay[213]

```
Dependent Variable: LABOR_PER_PERSON_EMPLOYE
Method: Least Squares
Date: 01/19/16   Time: 16:21
Sample: 1991 2014
Included observations: 24
White heteroskedasticity-consistent standard errors & covariance
```

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	23278.65	837.5528	27.79365	0.0000
TOTAL_TRADE_VOLUME_URUGU	6.54E-07	4.57E-08	14.32142	0.0000
R-squared	0.881856	Mean dependent var		31532.28
Adjusted R-squared	0.876486	S.D. dependent var		5594.366
S.E. of regression	1966.118	Akaike info criterion		18.08516
Sum squared resid	85043618	Schwarz criterion		18.18334
Log likelihood	-215.0220	Hannan-Quinn criter.		18.11121
F-statistic	164.2132	Durbin-Watson stat		0.438373
Prob(F-statistic)	0.000000			

Table 32: Labor per Person Uruguay[214]

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[213] Eviews, Workfile Uruguay.

[214] Eviews, Workfile Uruguay.

```
Dependent Variable: LABOR_PER_HOUR_WORKED_UR
Method: Least Squares
Date: 01/19/16   Time: 16:21
Sample: 1991 2014
Included observations: 24
White heteroskedasticity-consistent standard errors & covariance
```

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	13.00698	0.603555	21.55062	0.0000
TOTAL_TRADE_VOLUME_URUGU	4.68E-10	3.22E-11	14.51603	0.0000
R-squared	0.878776	Mean dependent var		18.90563
Adjusted R-squared	0.873266	S.D. dependent var		4.005142
S.E. of regression	1.425821	Akaike info criterion		3.627028
Sum squared resid	44.72526	Schwarz criterion		3.725199
Log likelihood	-41.52434	Hannan-Quinn criter.		3.653073
F-statistic	159.4820	Durbin-Watson stat		0.427966
Prob(F-statistic)	0.000000			

Table 33: Labor per Hour Uruguay[215]

1.11.4 Single Linear Regressions Paraguay

```
Dependent Variable: GDP_PARAGUAY
Method: Least Squares
Date: 01/19/16   Time: 16:28
Sample: 1991 2014
Included observations: 24
White heteroskedasticity-consistent standard errors & covariance
```

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.57E+08	5.73E+08	-0.274814	0.7860
TOTAL_TRADE_VOLUME_PARAG	1.027033	0.051030	20.12593	0.0000
R-squared	0.972534	Mean dependent var		1.29E+10
Adjusted R-squared	0.971285	S.D. dependent var		7.61E+09
S.E. of regression	1.29E+09	Akaike info criterion		44.87367
Sum squared resid	3.66E+19	Schwarz criterion		44.97184
Log likelihood	-536.4841	Hannan-Quinn criter.		44.89972
F-statistic	778.9785	Durbin-Watson stat		0.722520
Prob(F-statistic)	0.000000			

Table 34: GDP Paraguay[216]

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[215] Eviews, Workfile Uruguay.

[216] Eviews, Workfile Paraguay.

Dependent Variable: GDP_PER_CAPITA_PARAGUAY
Method: Least Squares
Date: 01/20/16   Time: 13:57
Sample: 1991 2014
Included observations: 24
White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	438.6773	85.30356	5.142544	0.0000
TOTAL_TRADE_VOLUME_PARAG	1.43E-07	6.83E-09	20.90625	0.0000

R-squared	0.968545	Mean dependent var		2253.381
Adjusted R-squared	0.967115	S.D. dependent var		1060.552
S.E. of regression	192.3236	Akaike info criterion		13.43589
Sum squared resid	813744.0	Schwarz criterion		13.53406
Log likelihood	-159.2307	Hannan-Quinn criter.		13.46194
F-statistic	677.4013	Durbin-Watson stat		0.590886
Prob(F-statistic)	0.000000			

Table 35: GDP per Capita Paraguay[217]

Dependent Variable: UNEMPLOYMENT_PARAGUAY
Method: Least Squares
Date: 01/19/16   Time: 16:28
Sample (adjusted): 1991 2013
Included observations: 23 after adjustments
White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.478737	0.636648	11.74705	0.0000
TOTAL_TRADE_VOLUME_PARAG	-1.11E-10	3.32E-11	-3.332305	0.0032

R-squared	0.243863	Mean dependent var		6.139130
Adjusted R-squared	0.207857	S.D. dependent var		1.525760
S.E. of regression	1.357964	Akaike info criterion		3.532791
Sum squared resid	38.72537	Schwarz criterion		3.631529
Log likelihood	-38.62709	Hannan-Quinn criter.		3.557623
F-statistic	6.772759	Durbin-Watson stat		1.061912
Prob(F-statistic)	0.016626			

Table 36: Unemployment Paraguay[218]

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[217] Eviews, Workfile Paraguay.

[218] Eviews, Workfile Paraguay.

Dependent Variable: INFLATION_PARAGUAY
Method: Least Squares
Date: 01/19/16   Time: 16:28
Sample: 1991 2014
Included observations: 24
White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	15.57264	2.069320	7.525485	0.0000
TOTAL_TRADE_VOLUME_PARAG	-4.65E-10	1.12E-10	-4.159166	0.0004
R-squared	0.377330	Mean dependent var		9.666667
Adjusted R-squared	0.349027	S.D. dependent var		5.529892
S.E. of regression	4.461678	Akaike info criterion		5.908582
Sum squared resid	437.9446	Schwarz criterion		6.006754
Log likelihood	-68.90299	Hannan-Quinn criter.		5.934627
F-statistic	13.33171	Durbin-Watson stat		1.528409
Prob(F-statistic)	0.001406			

Table 37: Inflation Paraguay[219]

Dependent Variable: CONSUMPTION_EXPENDITURE_
Method: Least Squares
Date: 01/19/16   Time: 16:29
Sample: 1991 2014
Included observations: 24
White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	60.33558	0.981741	61.45774	0.0000
TOTAL_TRADE_VOLUME_PARAG	3.79E-10	6.41E-11	5.909363	0.0000
R-squared	0.619045	Mean dependent var		65.15417
Adjusted R-squared	0.601729	S.D. dependent var		3.522444
S.E. of regression	2.222971	Akaike info criterion		4.515221
Sum squared resid	108.7152	Schwarz criterion		4.613392
Log likelihood	-52.18266	Hannan-Quinn criter.		4.541266
F-statistic	35.74956	Durbin-Watson stat		1.235624
Prob(F-statistic)	0.000005			

Table 38: Consumption Paraguay[220]

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[219] Eviews, Workfile Paraguay.

[220] Eviews, Workfile Paraguay.

1.11.5 Single Linear Regressions Venezuela

Dependent Variable: GDP_VENEZUELA
Method: Least Squares
Date: 01/19/16   Time: 16:33
Sample (adjusted): 1991 2013
Included observations: 23 after adjustments
White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.06E+09	4.81E+09	0.220837	0.8274
TOTAL_TRADE_VOLUME_VENEZ	1.973231	0.082804	23.83011	0.0000

R-squared	0.961995	Mean dependent var		1.67E+11
Adjusted R-squared	0.960185	S.D. dependent var		1.20E+11
S.E. of regression	2.40E+10	Akaike info criterion		50.72560
Sum squared resid	1.21E+22	Schwarz criterion		50.82433
Log likelihood	-581.3444	Hannan-Quinn criter.		50.75043
F-statistic	531.5531	Durbin-Watson stat		1.221829
Prob(F-statistic)	0.000000			

Table 39: GDP Venezuela[221]

Dependent Variable: GDP_PER_CAPITA_VENEZUELA
Method: Least Squares
Date: 01/20/16   Time: 13:53
Sample (adjusted): 1991 2013
Included observations: 23 after adjustments
White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	949.1983	194.5717	4.878398	0.0001
TOTAL_TRADE_VOLUME_VENEZ	6.23E-08	3.21E-09	19.40610	0.0000

R-squared	0.952716	Mean dependent var		6185.173
Adjusted R-squared	0.950464	S.D. dependent var		3819.314
S.E. of regression	850.0522	Akaike info criterion		16.41141
Sum squared resid	15174365	Schwarz criterion		16.51015
Log likelihood	-186.7313	Hannan-Quinn criter.		16.43625
F-statistic	423.1220	Durbin-Watson stat		1.060973
Prob(F-statistic)	0.000000			

Table 40: GDP per Capita Venezuela[222]

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[221] Eviews, Workfile Paraguay.

[222] Eviews, Workfile Paraguay.

Dependent Variable: UNEMPLOYMENT_VENEZUELA
Method: Least Squares
Date: 01/19/16   Time: 16:34
Sample (adjusted): 1991 2013
Included observations: 23 after adjustments
White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	12.62868	1.139478	11.08287	0.0000
TOTAL_TRADE_VOLUME_VENEZ	-2.58E-11	7.50E-12	-3.439140	0.0025
R-squared	0.253753	Mean dependent var		10.46087
Adjusted R-squared	0.218218	S.D. dependent var		3.063975
S.E. of regression	2.709120	Akaike info criterion		4.914066
Sum squared resid	154.1259	Schwarz criterion		5.012804
Log likelihood	-54.51176	Hannan-Quinn criter.		4.938898
F-statistic	7.140825	Durbin-Watson stat		0.418005
Prob(F-statistic)	0.014260			

Table 41: Unemployment Venezuela[223]

Dependent Variable: INFLATION_VENEZUELA
Method: Least Squares
Date: 01/19/16   Time: 16:34
Sample (adjusted): 1991 2013
Included observations: 23 after adjustments
White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	40.34789	9.168825	4.400552	0.0002
TOTAL_TRADE_VOLUME_VENEZ	-8.74E-11	6.97E-11	-1.253759	0.2237
R-squared	0.054779	Mean dependent var		33.00000
Adjusted R-squared	0.009768	S.D. dependent var		22.35255
S.E. of regression	22.24311	Akaike info criterion		9.124883
Sum squared resid	10389.87	Schwarz criterion		9.223621
Log likelihood	-102.9362	Hannan-Quinn criter.		9.149715
F-statistic	1.217017	Durbin-Watson stat		1.617820
Prob(F-statistic)	0.282429			

Table 42: Inflation Venezuela[224]

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[223] Eviews, Workfile Paraguay.

[224] Eviews, Workfile Paraguay.

Dependent Variable: CONSUMPTION_EXPENDITURE_
Method: Least Squares
Date: 01/19/16   Time: 16:34
Sample (adjusted): 1991 2013
Included observations: 23 after adjustments
White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	60.88792	2.978960	20.43933	0.0000
TOTAL_TRADE_VOLUME_VENEZ	-3.26E-11	2.65E-11	-1.232569	0.2314

R-squared	0.061745	Mean dependent var	58.14470
Adjusted R-squared	0.017066	S.D. dependent var	7.860143
S.E. of regression	7.792784	Akaike info criterion	7.027215
Sum squared resid	1275.277	Schwarz criterion	7.125953
Log likelihood	-78.81297	Hannan-Quinn criter.	7.052047
F-statistic	1.381968	Durbin-Watson stat	0.412706
Prob(F-statistic)	0.252923		

Table 43: Consumption Venezuela[225]

Dependent Variable: LABOR_PER_PERSON_EMPLOYE
Method: Least Squares
Date: 01/19/16   Time: 16:35
Sample (adjusted): 1991 2013
Included observations: 23 after adjustments
White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	48869.48	1150.536	42.47538	0.0000
TOTAL_TRADE_VOLUME_VENEZ	-6.31E-09	7.99E-09	-0.790440	0.4381

R-squared	0.017987	Mean dependent var	48338.91
Adjusted R-squared	-0.028775	S.D. dependent var	2816.585
S.E. of regression	2856.822	Akaike info criterion	18.83575
Sum squared resid	1.71E+08	Schwarz criterion	18.93449
Log likelihood	-214.6111	Hannan-Quinn criter.	18.86058
F-statistic	0.384653	Durbin-Watson stat	0.559406
Prob(F-statistic)	0.541796		

Table 44: Labor per Person Venezuela[226]

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[225] Eviews, Workfile Paraguay.

[226] Eviews, Workfile Paraguay.

Dependent Variable: LABOR_PER_HOUR_WORKED_VE
Method: Least Squares
Date: 01/19/16   Time: 16:35
Sample (adjusted): 1991 2013
Included observations: 23 after adjustments
White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	25.43686	0.579404	43.90180	0.0000
TOTAL_TRADE_VOLUME_VENEZ	4.85E-12	3.94E-12	1.231336	0.2318
R-squared	0.044003	Mean dependent var		25.84482
Adjusted R-squared	-0.001521	S.D. dependent var		1.384660
S.E. of regression	1.385712	Akaike info criterion		3.573247
Sum squared resid	40.32417	Schwarz criterion		3.671986
Log likelihood	-39.09234	Hannan-Quinn criter.		3.598079
F-statistic	0.966599	Durbin-Watson stat		0.603428
Prob(F-statistic)	0.336722			

Table 45: Labor per Hour Venezuela[227]

1.11.6 GDP Models

Dependent Variable: DGDP
Method: Panel Least Squares
Date: 01/20/16   Time: 20:42
Sample (adjusted): 1992 2013
Periods included: 22
Cross-sections included: 4
Total panel (balanced) observations: 88
White diagonal standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.94E+10	1.60E+10	1.213848	0.2282
EXPORTS	0.745466	0.379089	1.966464	0.0525
UNEMPLOYMENT	-3.07E+09	2.12E+09	-1.449903	0.1508
R-squared	0.251911	Mean dependent var		2.82E+10
Adjusted R-squared	0.234309	S.D. dependent var		1.04E+11
S.E. of regression	9.12E+10	Akaike info criterion		53.34384
Sum squared resid	7.07E+23	Schwarz criterion		53.42830
Log likelihood	-2344.129	Hannan-Quinn criter.		53.37787
F-statistic	14.31144	Durbin-Watson stat		1.664472
Prob(F-statistic)	0.000004			

Table 46: Model 1[228]

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[227] Eviews, Workfile Paraguay.

[228] Eviews, Workfile Panel Data for GDP Model.

Dependent Variable: DGDP
Method: Panel Least Squares
Date: 01/20/16   Time: 20:42
Sample (adjusted): 1992 2014
Periods included: 23
Cross-sections included: 4
Total panel (balanced) observations: 92
White diagonal standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.38E+12	1.85E+12	1.829350	0.0707
IMPORTS	-2.259509	1.033173	-2.186961	0.0314
EXPORTS	3.090290	0.967061	3.195548	0.0019
YEAR	-1.70E+09	9.23E+08	-1.838474	0.0694

R-squared	0.244063	Mean dependent var		2.56E+10
Adjusted R-squared	0.218292	S.D. dependent var		1.03E+11
S.E. of regression	9.10E+10	Akaike info criterion		53.34799
Sum squared resid	7.28E+23	Schwarz criterion		53.45763
Log likelihood	-2450.007	Hannan-Quinn criter.		53.39224
F-statistic	9.470602	Durbin-Watson stat		1.794673
Prob(F-statistic)	0.000017			

Table 47: Model 2[229]

Dependent Variable: DGDP
Method: Panel Least Squares
Date: 01/20/16   Time: 20:43
Sample (adjusted): 1992 2013
Periods included: 22
Cross-sections included: 4
Total panel (balanced) observations: 88
White diagonal standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.63E+12	2.05E+12	1.771994	0.0801
IMPORTS	-1.945893	1.281424	-1.518539	0.1327
EXPORTS	2.844974	1.120082	2.539969	0.0130
UNEMPLOYMENT	-4.58E+09	2.27E+09	-2.019544	0.0467
YEAR	-1.80E+09	1.02E+09	-1.769509	0.0805

R-squared	0.291551	Mean dependent var		2.82E+10
Adjusted R-squared	0.257409	S.D. dependent var		1.04E+11
S.E. of regression	8.98E+10	Akaike info criterion		53.33485
Sum squared resid	6.69E+23	Schwarz criterion		53.47561
Log likelihood	-2341.734	Hannan-Quinn criter.		53.39156
F-statistic	8.539347	Durbin-Watson stat		1.888537
Prob(F-statistic)	0.000008			

Table 48: Model 3[230]

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[229] Eviews, Workfile Panel Data for GDP Model.

[230] Eviews, Workfile Panel Data for GDP Model.

Dependent Variable: DGDP
Method: Panel Least Squares
Date: 01/20/16   Time: 20:43
Sample (adjusted): 1992 2013
Periods included: 22
Cross-sections included: 4
Total panel (balanced) observations: 88
White diagonal standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.66E+12	1.79E+12	1.484748	0.1414
IMPORTS^2	-1.27E-11	2.25E-12	-5.640946	0.0000
EXPORTS^2	1.76E-11	2.75E-12	6.393725	0.0000
UNEMPLOYMENT	-3.37E+09	2.20E+09	-1.534992	0.1286
YEAR	-1.31E+09	8.87E+08	-1.478191	0.1431

R-squared	0.326874	Mean dependent var		2.82E+10
Adjusted R-squared	0.294434	S.D. dependent var		1.04E+11
S.E. of regression	8.75E+10	Akaike info criterion		53.28371
Sum squared resid	6.36E+23	Schwarz criterion		53.42447
Log likelihood	-2339.483	Hannan-Quinn criter.		53.34042
F-statistic	10.07631	Durbin-Watson stat		2.172299
Prob(F-statistic)	0.000001			

Table 49: Model 4[231]

Dependent Variable: DGDP
Method: Panel Least Squares
Date: 01/20/16   Time: 20:43
Sample (adjusted): 1992 2014
Periods included: 23
Cross-sections included: 4
Total panel (balanced) observations: 92
White diagonal standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-6.28E+08	7.24E+09	-0.086800	0.9310
IMPORTS^2	-1.30E-11	2.15E-12	-6.037595	0.0000
EXPORTS^2	1.77E-11	3.45E-12	5.142856	0.0000
INFLATION	27398165	13057815	2.098220	0.0388

R-squared	0.317383	Mean dependent var		2.56E+10
Adjusted R-squared	0.294111	S.D. dependent var		1.03E+11
S.E. of regression	8.64E+10	Akaike info criterion		53.24596
Sum squared resid	6.58E+23	Schwarz criterion		53.35561
Log likelihood	-2445.314	Hannan-Quinn criter.		53.29022
F-statistic	13.63851	Durbin-Watson stat		2.164491
Prob(F-statistic)	0.000000			

Table 50: Model 5[232]

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[231] Eviews, Workfile Panel Data for GDP Model.

[232] Eviews, Workfile Panel Data for GDP Model.

Dependent Variable: DGDP
Method: Panel Least Squares
Date: 01/20/16   Time: 20:44
Sample (adjusted): 1992 2014
Periods included: 23
Cross-sections included: 4
Total panel (balanced) observations: 92
White diagonal standard errors & covariance (d.f. corrected)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.03E+09	8.67E+09	0.234151	0.8154
DTRADE	2.958174	0.587169	5.038025	0.0000
DINFLATION	-65103630	18916440	-3.441643	0.0009

R-squared	0.676364	Mean dependent var	2.56E+10
Adjusted R-squared	0.669091	S.D. dependent var	1.03E+11
S.E. of regression	5.92E+10	Akaike info criterion	52.47791
Sum squared resid	3.12E+23	Schwarz criterion	52.56014
Log likelihood	-2410.984	Hannan-Quinn criter.	52.51110
F-statistic	93.00015	Durbin-Watson stat	1.861218
Prob(F-statistic)	0.000000		

Table 51: Model 6[233]

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[233] Eviews, Workfile Panel Data for GDP Model.

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