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Determinants of MERCOSUR Trade Patterns with Major Trade Partners and Asian Countries

- Multi-Country Gravity Model Analysis -

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Abstract

Determinants of MERCOSUR Trade Patterns with Major Trade Partners and Asian Countries

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The research will focus on a multi country gravity analysis between the member countries of the Southern Common Market, MERCOSUR, for its acronym in Spanish: Paraguay, Brazil, Argentina and Uruguay, its main trade partners, as well as Asian countries, including the 10 members of the Association of Southeast Asian Nations-ASEAN, and also South Korea, Japan and China, in order to study the determinants of trade flows and the trade potentials between them.

The first two chapters of the thesis contain information on the economic bloc background, the purpose of research, and the significance of the study, as well as giving the thesis a theoretical framework and an overview of the trade performance of the studied countries.

The last two chapters focus on the methodology and the applied empirical analysis through the multi gravity model. Panel data from a total of 20 selected countries for a period of 10 years between 2011 and 2020 has been used to apply the model in the SAS on demand for academics software.

The last chapter summarizes the findings of the research and conclusions.

Keywords: International trade; MERCOSUR, gravity model; Asian countries, Latin America

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Chapter 1. Introduction

1.1. Background

The Southern Common Market – MERCOSUR is a regional trade agreement created by the Treaty of Asuncion in 1991 and signed by Argentina, Brazil, Uruguay and Paraguay. Its purposes and principles were stated in the Article 1 of the Treaty of Asuncion, that aims that parties could establish a common market in the future, the signed of the treaty did not created the common market itself. Today, MERCOSUR is an imperfect customs union.

Through the signing of the Accession Protocol, Venezuela officially joined MERCOSUR in 2006, but it has been suspended from the bloc in 2019, due to the economic and social problems of the country and the breach of the commitments assumed at the time of accession. Currently, Bolivia is in the process of becoming a member too. Bolivia's MERCOSUR Accession Protocol was signed by all States Parties in 2015 and is now being included by their congresses.

Mercosur consists of a very heterogeneous group of countries, both in its demographic aspects and in relation to its macroeconomic variables, in which large differences are easily observed.

Table 1. 1 MERCOSUR

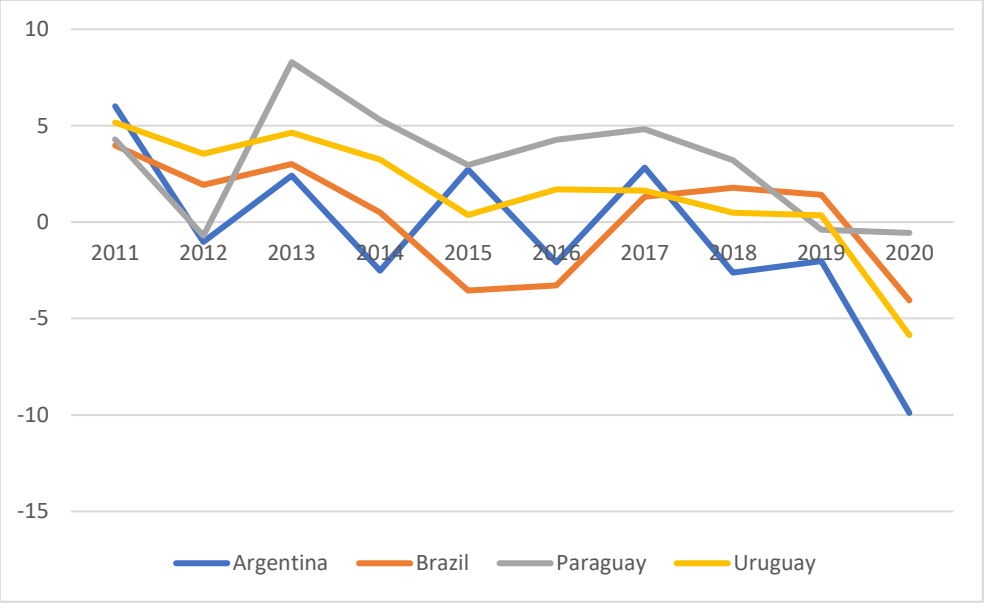
Country	Population	GDP (USD million)	GDP Per Capita (USD)
Argentina	45,376,763	389,288	8,579
Brazil	212,559,409	1,444,733	6,797
Paraguay	7,132,530	35,670	5,001
Uruguay	3,473,727	53,629	15,438
Total MERCOSUR	268,542,429	1,923,320	35,815

Source: World Bank Database

Together, the 4 countries make a population of 268,542,429 people. Of all of them, Brazil is the one with the largest population and, more importantly, the one with the largest GDP in Mercosur.

When it comes to the variation of the GDP growth in the last 10 years, it can clearly be seen the good performance of Paraguay compared to other MERCOSUR member countries, except for 2012, when the intense rains caused by the "El Niño" phenomenon negatively affected the agricultural sector and construction. The weaker dynamism in 2015 is mostly due to low growth among its major trading partners, particularly Brazil, as well as a drop in the price of soybeans and other commodities. In 2019, the country faced droughts that harmed agricultural and electricity production. Also, there were many rains and floods that had a negative effect on livestock production and the construction sector. Added to this, due to the devaluation of Argentina and Brazil currency, border trade and transportation were also affected.

Figure 1.1 Variation of GDP Growth-%



Source: World Bank Database

In terms of the well-being of its inhabitants, those in Uruguay have the best standard of living, since their GDP per capita is USD 15,438 much higher than the others.

All Mercosur countries are founding members of the World Trade

Organization – WTO, granting at least most-favored-nation (MFN) treatment[1] to all its trading partners. All countries have ratified the Trade Facilitation Agreement – TFA and are actively participating in other groups. The Cairns Group[2] is a group of interest due to negotiations on agricultural trade, as well as G20 where all countries are actively involved. In addition, during the trade facilitation agreement negotiation, the coordination of the group of landlocked developing countries was carried out by Paraguay. Argentina also participates in other groups such as NAMA 11 and the Friends of Fish group, as well as a co-sponsor of the Joint Proposal in intellectual property. Brazil take part in the BRICS[3] group of leading emerging economies. (WTO, 2021)

Paraguay and Uruguay were never involved in any dispute but they have participated as third parties. Brazil was involved in 5 disputes as petitioner and 2 as defendant. Argentina has been involved in 3 disputes as petitioner.

In all countries, foreign investors are welcomed and provided with national treatment with only few exceptions. Uruguay possess some restrictions in radio and television transmission, air and maritime cabotage, and fishing in its territorial seas. Paraguay is more cautious about land ownership in the borders. In certain sectors, Brazil possess several bans (postal services, nuclear energy) or boundaries (e.g. financial establishments, air transport, health services, rural property purchase, broadcasting, fishing, mining, and hydrocarbons exploration). Argentina limits the number of foreigners that can participate in the media and also restricts the purchase of lands. Fishing in Argentine seas and marine cabotage services are normally only available to Argentine citizens. (WTO, 2021)

1.2. Purpose of Research

Nowadays, quantitative research regarding trade policy and data

[1] In international trade agreements, the most favored nation clause establishes the automatic extension of any favorable treatment that will be granted or has already been granted to one party to all other parties in the same manner.

[2] The Cairns Group is an interest group of 19 agriculture exporting countries.

[3] BRICS is an acronym for the formidable coalition of the world's leading emerging market economies: Brazil, Russia, India, China, and South Africa. The purpose of the BRICS mechanism is to advance peace, security, development, and collaboration.

analytics have gain more importance. There is a new wave of trade openness because of globalization. As a result, it is critical for policymakers and other trade policy stakeholders to have access to extensive, trustworthy information and analysis on the effects of trade policies at various stages of the policy-making process. (Larch et al, 2016)

The idea of the research is to apply a multi country gravity model: Paraguay, Brazil, Argentina and Uruguay, members of the Southern Common Market, MERCOSUR for its acronym in Spanish, as well as Asian Countries, including the 10 members of the Association of Southeast Asian Nations-ASEAN[4] and also South Korea, Japan and China, as well as MERCOSUR main trade partners (United States, Germany and Netherlands). The analysis includes 20 countries in total, for the purpose of studying the determinants of trade flows and the trade potentials between them.

Regarding MERCOSUR, Venezuela is excluded from the analysis as it has been suspended from the bloc in 2019, since according to the provisions of the Ushuaia Protocol on Democratic Commitment in MERCOSUR, the full validity of democratic institutions is an essential condition for the development of the integration process. (MERCOSUR, 2021)

The aim of the research is to give special attention to Paraguay. The Paraguayan government is currently working having as guideline the Paraguay National Development Plan 2030, which is aligned with the United Nations' sustainable development goals. The strategic axes of the plan are the inclusive economic growth, the poverty reduction, the social development, and the incorporation of the nation in global markets. This research will contribute specifically with the incorporation of the nation in global markets, that relates with market opening and international presence of Paraguay in the world.

1.3 Significance of the Study

Countless study papers and articles that cover many elements of trade have utilized the gravity model. It's of special relevance to policymakers

[4] The following countries are members of the ASEAN: Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam

because it allows them to estimate the trade effects of a variety of trade-related policies, ranging from classic tariffs to new "behind-the-border" regulations. Data has also become more available for both developing and developed nations, and because of this, the gravity model has become the starting point for a wide range of policy-related research problems. (Shepherd, 2016)

Distance matters, in the past, it used to be a huge barrier in terms of trading across borders. Nowadays, thanks to the evolution of transportation and innovations in the area, it is possible to reduce transportation cost. Because of this, researchers have come up with an enormous interest whether to find if distance really matters. This is what is intended to discover in this research as well, especially considering that Paraguay is a landlocked country.

Currently, in the region there haven't been much empirical research about international trade and more specifically the gravity model. Regarding research and development expenditure as percentage of the GDP, Paraguay spends the less, only 0.15%, Uruguay 0.42% and Argentina 0.49%. Brazil is the only one that spends 1.16%, even more than the Latin American & Caribbean average, which is 0.67%. (World Bank, 2021). In the literature review section, the research that have been made are detailed.

This investigation will give an insight to policy makers in international trade area, of what it is possible to achieve applying a gravity model. In the future, the idea is to be able to replicate this model with other countries and also with MERCOSUR, whether to find out the success of the agreements that have been signed in the past. There is no such research about the implementation of trade agreements in Paraguay and MERCOSUR.

This research will be useful to find out the opportunities Paraguay has in terms of international trade. The main goal is to be able to make some trade policy proposals and recommendations to boost Paraguay's foreign trade, especially with Asian countries that still have a lower percentage of participation in compare to other countries' trade flows. It will also be essential to formulate the policies related to the increase and diversification of foreign markets.

Chapter 2. Framework of the Study

2.1 International Trade Theories and the Gravity Model

International trade is the exchange of goods and services between the inhabitants of two or more nations that gives rise to merchandise exits (exports) merchandise inflows (imports) from other countries. It is a broad concept as it encompasses the flow of international trade relations without referring to a specific country. In other words, “It is the set of commercial and financial movements, and in general all those operations, whatever their nature, that are carried out between nations, it is a universal phenomenon that various human communities participate.”(Cristobal, 1995)

According to Smith, mutually advantageous commerce, takes place on the basis of absolute advantage. When one nation is more efficient than the other in producing certain commodity, both nations benefit by specializing in the production of the commodity with which they have an absolute advantage and exchanging a portion of their output with the other nation for the commodity with which they have an absolute disadvantage. (Zhang, 2008)

David Ricardo is known for the theory of comparative advantage. Ricardo recognizes that market forces will assign the resources of a nation to those sectors where it is relatively more productive. In other words, a nation can import a good that could be the lowest-cost product, if it is still more productive in the production of other goods. In this way, countries will be able to export those others that their work produces relatively more efficiently and will import the goods that their work produces relatively more inefficiently. (Zhang, 2008)

In its most basic form, the Heckscher–Ohlin (H–O) model links bilateral trade flows between two nations to differences in their factor endowments. It is predicted that countries would specialize in the manufacture of commodities that require components that they have in abundance. As a result, they will choose to export certain items while importing ones that include

components with which they are under-equipped. (Florian et al, 2011)

According to Newton's Law of Universal Gravitation, any particle in the universe attracts any other particle through a force that is proportional to the product of their masses and inversely proportional to the square of their distance. Newton's Law of Gravity, when applied to international trade, states that, just as particles are attracted to one another in proportion to their sizes and proximity, countries trade in proportion to their respective market sizes and proximity. (Larch et al, 2016)

The gravity equation was originally used to analyze international trade flows by Tinbergen (1962) and Poyhonen (1963), respectively. Since then, the gravity model has grown in popularity as a tool for analyzing empirical international trade data. (Martinez, 2003)

The gravitational equation in its simplest form states that the potential of a country to offer (export) its products demanded (imported) by another depends on its own size measured by the gross domestic product (GDP), while the foreign demand for these products depend on the size of the GDP of the importing country. That is, the potential offers and demands of the trading partners can be measured by their respective GDPs. (Jacobo, 2005) The GDP is the key measure used to estimate a country's income and is extremely important when considering trade impacts.

The model also defines commerce between two nations as a function of their respective sizes, as measured by their populations, and the distance between their locations. Greater “masses” result in more attraction between the two countries and, thus, increased commerce, whereas greater distance leads in higher transportation costs and, hence, decreased trade flows.

The fundamental model of commerce between two nations $_i$ and $_j$ is as follows:

$$F_{ij} = \frac{M_i M_j}{D_{ij}}$$

F denotes trade flow in this formula, G is a constant, D denotes distance, and M denotes the economic dimensions of the nations under consideration, in other words, the Gross Domestic Product.

There is a large literature where it can be verified that factors other than mass and distance also affect trade, either positively or negatively. The standard gravitational formula can be enriched by incorporating a number of variables that increase or decrease bilateral trade. Among these additional variables, we can mention: being a bordering country, having the same language, the same currency, a legal environment, existence of tariff and non-tariff barriers, existence of trade agreements, existence of preferential treatment, among others. Some of these factors are considered in articles and utilized in the gravity model as dummy variables.

Likewise, there are variables, which numerous works have shown to have little significance when it comes to analyzing trade in a given time, such as price and exchange rate. (Balager, Martinez)

There are many theoretical contributions to the model, starting with the works of Anderson (1979), with models of international trade with product differentiation, and Bergstrand (1985, 1989), that considers monopolistic competition. Helpman (1987) introduces product differentiation and increasing economies of scale. Frankel et al. (1994) analyze the trade blocs in the Pacific, in the Asian Pacific, and their relationship with monetary policies, among others; Deardorff (1997) uses the model to test standard theories of international trade, specifically Heckscher-Ohlin model and Feenstra et al. (1998) derive a gravitational model assuming homogeneous goods with reciprocal dumping.

Gravity models have been a frequently used technique in economics since they were initially employed for trade flows, particularly to investigate the influence on the economy of regional integration agreements on trade. (Jacobo, 2005)

Employing a gravity model, Riera (2017) evaluated the Free Trade Agreement between Chile and Mercosur, it was undertaken to investigate the treaty's scope in terms of the formation and diversion of bilateral goods flows. The results showed that this policy failed to increase trade between them, exchanging 35% less than expected. This decrease was due to the presence of trade diversions from the countries part of the agreement to the rest of the world, which had a 36% higher exchange than expected, almost exactly offsetting the

results.

Lopez y Muñoz (2017) in a case study called “The gravity models in Latin America: Chile and Mexico” applied the gravity model to the Latin American environment, attempting to capture the impact of all trade agreements signed by Chile and Mexico by including various dummy variables based on the kind of agreement and its depth. It was discovered that the impact of these trade policy instruments varies by country, such as the relative weight of various agreements, and that transportation costs continues to be a determining factor. While there is no indication that Mexican exports have increased as a result of this policy, including North American Free Trade Agreement (NAFTA), the program has shown to be more effective in Chile.

In 2000, flows of commercial transactions between the European Union and Mercosur were researched, with an emphasis on intra-industry trade and the estimation of a gravity equation for bilateral commerce between member nations of both blocs. They analyzed bilateral trade flows from the exporting to the importing countries using, standard variable, as also GDP, GDP per capita and distance. They also used two dummies, one to determine whether the nations have a shared border and the other to find out if the countries belong to the same group (MERCOSUR or European Union). The findings indicate that income and per capita income of importing and exporting nations, as well as distance, are significant factors in explaining the amount of bilateral commerce between the investigated countries. (Balager, Martinez, 2000)

Similarly, in 2009, an investigation was carried out on the determinants of trade flows between MERCOSUR and the European Union in the manufacturing sector, for which a gravitational equation was applied between 16 countries for a period of 13 years. Apart from using the bilateral trade flows, GDP and population, they used two dummy variables. One of them, to know if the countries belong to a specific group, in this case MERCOSUR or the European Union, and another one to know whether or not the nations have a common language. As expected, the set of countries, the distance between them, the population, as well as other control variables, explain the bilateral trade flows of manufactures. (Jacobo, 2009)

More recently, in 2021, a gravity model was used to analyze the determinants of Paraguay's exports. The panel data technique was used for a period of 20 years. The results indicated that 54% of Paraguayan exports are explained by the variables included in the model, so the gravitational equation justifies the determinants of Paraguayan exports to the countries considered in the research. (Laino, 2021)

Also, in 2021, employing a gravitational model, the influence of the MERCOSUR Common External Tariff on Paraguay's international trade during the period 2000-2019 was studied. In this case, the mentioned tariff in the gravitational equation was used as a dummy variable. The study concluded that such a tariff could have a positive impact on Paraguay’s international trade. (Salcedo, Cabral, 2021)

2.2 Southern Common Market – MERCOSUR

Besides the member countries previously mentioned, part of MERCOSUR are also the so-called Associated States that currently are: Bolivia, Chile, Colombia, Ecuador, Guyana, Perú and Surinam. These countries become Associated States when they sign free trade agreements with MERCOSUR member countries under the umbrella of the Latin American Integration Association (ALADI, by its acronym in Spanish). The Associated States have the authorization and can be present at the meetings with MERCOSUR members. The Associated States are permitted to participate in MERCOSUR meetings dealing with issues of common interest.

Figure 2.1 MERCOSUR member countries

Source: Council of Foreign Relations

In the bloc structure, there are several relevant dependencies, such as:

- Council of the Common Market (CMC) it is the highest body in the bloc, it has the mission of ensure the adherence to the Treaty of Asunción and signed deals. It manages the integration process from a political standpoint. Its presidency is rotated in alphabetical order among the participating countries.
- Common Market Group (GMC), consists of officials from the Member States' Ministries of Foreign Affairs and Economy, as well as the Central Banks. It is in charge of the Bloc's day-to-day operations
- Mercosur Trade Commission (CCM), their responsibility is to administrate the policy instruments, in this case for example the external common tariff, which is the tariff that gods coming into Mercosur need to pay.

Other significant Mercosur committees include: The High Representative General of Mercosur (ARGM), the Fund for Structural Convergence of Mercosur (FOCEM), the Economic and Social Consultative Forum (FCES), the Institute of Public Policies on Human Rights of Mercosur (IPPDH), the Mercosur Social Institute (ISM), the Mercosur Parliament (PARLASUR), the Permanent Review Court (TPR), the Mercosur Social Participation Support Unit (UPS) and the Mercosur Secretariat.

MERCOSUR as a bloc has commercial agreements with India, Israel, Palestine and South Africa Custom Union. With the European Union, MERCOSUR have been negotiating for 20 years this agreement that was reached in June of 2019, after almost 20 years. It is undoubtedly one of the most significant trade accords ever signed on a worldwide scale. Tariffs on 93 percent of Mercosur exports are eliminated, and preferential treatment is granted to the remaining 70 percent of exports under the agreement. This agreement is in the process of being ratified, so that it can be implemented. With negotiations starting from 2017, MERCOSUR also began to meet with the European Free Trade Association-EFTA. Finally, negotiations concluded in august 2019 and it will grant to 97% of MERCOSUR's export offer, a preferential treatment. The formidable peculiarity is that it is in fact, the first time Switzerland and Norway have created any form of special treatment for MERCOSUR member states. (REDIEX, 2021)

Also, currently negotiations for future agreements are being made with Canada, Singapore and South Korea. Additionally, MERCOSUR constantly continues conversations with ASEAN, the Gulf Cooperation Council, the Eurasian Economic Union, Australia, Japan, Lebanon, Morocco, Pakistan, Tunisia, and Turkey, to see if negotiations can be started. (REDIEX, 2021)

As a MERCOSUR member country, Paraguay is connected to a global network of business pacts. Bolivia, Chile, Colombia, Cuba, México, Peru, and the Andean Nations Community have all signed Agreements of Partial Scope of Economic Complementation.

Free Trade Agreements Negotiations

MERCOSUR-South Korea

Since 2005, MERCOSUR and South Korea have been thinking about the possibility of negotiating an agreement, in that year, 2 meetings were held, one in Asuncion, Paraguay and the other in Seoul, Korea, to discuss a joint study. Finally, in 2017, both parties agreed on beginning negotiations. In Seoul, Korea, on May 25, 2018, MERCOSUR and South Korea began trade discussions. On September 2018, the first round of discussions was held in Montevideo, Uruguay. In 2019 the second, third and fourth round of negotiations were held, in Seoul, Montevideo Uruguay and Busan respectively. In 2020, the fifth round of negotiations took place in Montevideo Uruguay. The VI round of negotiations was in June 2021. Lastly, on august 2021 the VII round of negotiations took place, in the online mode. (SICE, 2021)

MERCOSUR- Singapore

On July 2018, MERCOSUR and Singapore began discussions for a free trade agreement. In Montevideo, Uruguay, in October 2018, the first round of trade negotiations came to an end. Other meetings took place on April 2019 in Argentina, and between March and October 2021. Recently, on February 25, 2022, the Third Round of Negotiations was held. (SICE, 2021)

MERCOSUR- ASEAN and MERCOSUR- Japan

According to the negotiation groups on the Ministry of Foreign Affairs and the Ministry of Industry and Commerce of Paraguay, there are discussions about pursuing trade negotiations with the country members of ASEAN, as well as with Japan, but nothing has really begun yet.

2.2.1 Overview of MERCOSUR intraregional trade

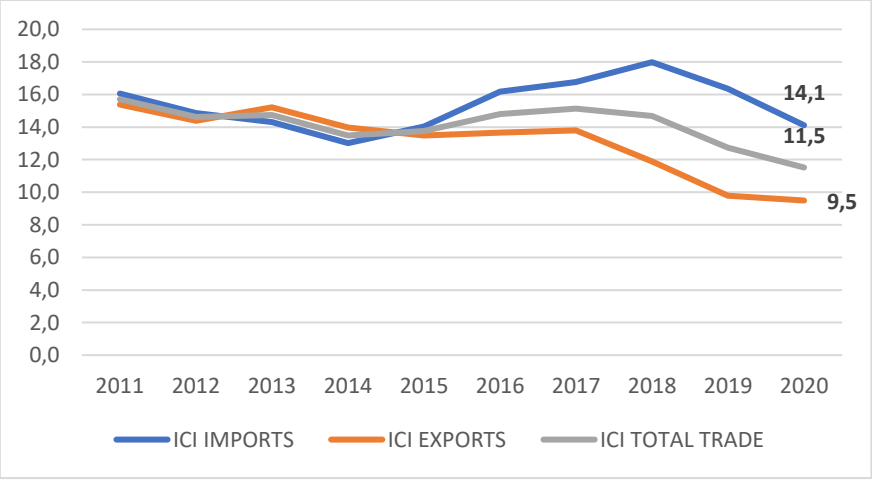
According to the CEPAL[5], the Intraregional Trade Index is one of the most popular indicators and one of the simplest to measure the importance of

[5] CEPAL, Economic Commission for Latin America and the Caribbean, by its acronym in Spanish

intraregional trade. In order to calculate this index, it is necessary to divide the total mutual trade of the MERCOSUR countries with the total trade that these nations have with the world. This calculation can be done on the side of exports, imports or total trade, thus having different results for each of the analyzes, depending on the need of the case. (CEPAL, 2008)

If the Intraregional Trade Index is measured by the import side, the intraregional trade in MERCOSUR reached 30,856.4 USD million in 2020, compared to 218,746.7 USD million of imports from the bloc to the world, this represents an index of 14.1%. In other words, imports within members of the bloc represents 14.1% of the total imports from the world. If the index is measured by the export side, the intraregional trade between MERCOSUR countries was 26,533.4 USD million, compared to 279,530.6 of export from the bloc to the world, representing an index of 9.5%. Regarding total trade, in 2020 MERCOSUR member countries totalize 57,389.8 USD million, compared to the total trade of MERCOSUR with the world of 498,277.2, representing an index of 11.5%.

Figure 2.2 Intraregional Trade Index MERCOSUR (2011-2020) -%



Source: UNCOMTRADE

Regarding imports in the year 2020, 19% of them are composed of

gods of chapter 87 of the Harmonized System Classification[6], “Vehicles other than railway or tramway rolling stock, parts and accessories”. This is explained by the Automotive Agreement that member countries have.[7]

Another chapter that can be highlighted is the number 27 “Mineral fuels and mineral oils” accounting 11.1%. The chapter 12 “Oilseeds and oleaginous fruits” represents 7.5% of the imports. Lastly, chapter 10 “Cereals” and chapter 84 “Machinery and mechanical appliances” accounts for 6.1% and 5.9% respectively.

When it comes to exports, of 2020, a similar pattern can be seen, chapter 87 “Vehicles other than railway or tramway rolling stock, parts and accessories” also has a present totaling 20.2% of the exports, chapter 27 “Mineral fuels and mineral oils” accounts for 8.5% of the exports, following chapter 12 “Oilseeds and oleaginous fruits” that represents 7.9%. Chapter 10 “Cereals” and chapter 84 “Machinery and mechanical appliances” accounts for 6.8 and 5 % respectively. As it can be seen, gods MERCOSUR member countries imports and exports are composed by the same category.

A slight decline of the intraregional trade can be seen starting in 2018. The biggest players within MERCOSUR are Brazil and Argentina. The reduction in intra-regional trade in recent years has to do first in part with the significant interruption in cross-border land trade between the countries. In addition, the trade policy measures imposed by Argentina have also contributed to this decline, considering that the Argentina-Brazil flow covers a large part of intra-MERCOSUR trade. The situation can also be explained by the decrease in domestic demand, the depreciation of the argentine currency[8] and the delicate economic situation in Argentina due to this. (ICEX, 2019)

Another important commercial measure imposed by Argentina was the increase in the processing time of prior import licenses, which, from 24 to

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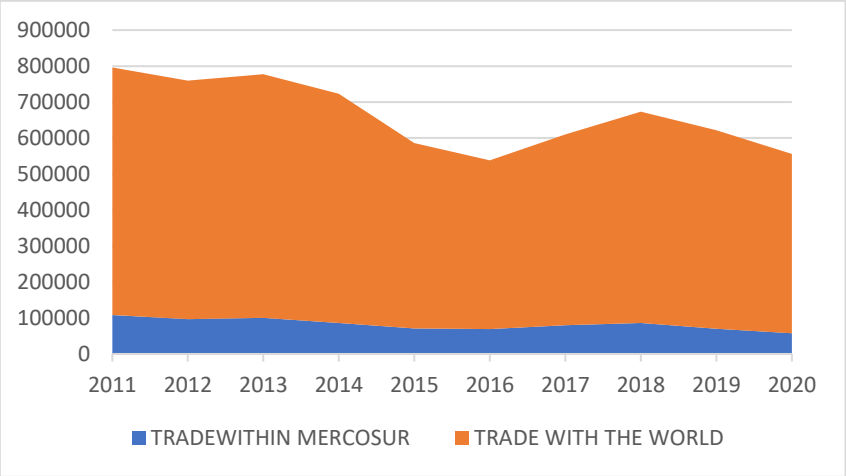
[6] The Harmonized System is a standardized and quantifiable technique for identifying products that are traded internationally. Customs authorities all over the world make use of it to identify products for the purposes of determining taxes and levies, as well as for compiling statistics.

[7] Automotive Agreements with Brazil and Argentina for Vehicles and auto parts

[8] The peso has been the official currency of Argentina since 1992, when it replaced the austral. Due to its parity with the dollar, it was also known as the convertible peso until the convertibility rule was amended in 2002.

72 hours, the new regulations stipulated that it could reach up to two months. Added to this, the increase in tariff lines subject to the prior import license regime added 300 products, totaling 1,500 tariff positions, among which electronic devices, electrical appliances, motorcycles and some wooden products stand out.This clearly demonstrates the government's increased involvement in matters of international trade. (La Nación, 2020)

Figure 2.3. Mercosur's Trade (2011-2020) – USD MILLION



Source: UNCOMTRADE

2.2.2 Overview of MERCOSUR extra regional trade with Asian Countries

When it comes to analyze the trade between MERCOSUR and the designated Asian countries for this research, a curious pattern can be seen, since from year 2011 to 2015, usually, MERCOSUR imports were dominating. Beginning in 2016, MERCOSUR countries started to export more to Asian countries.

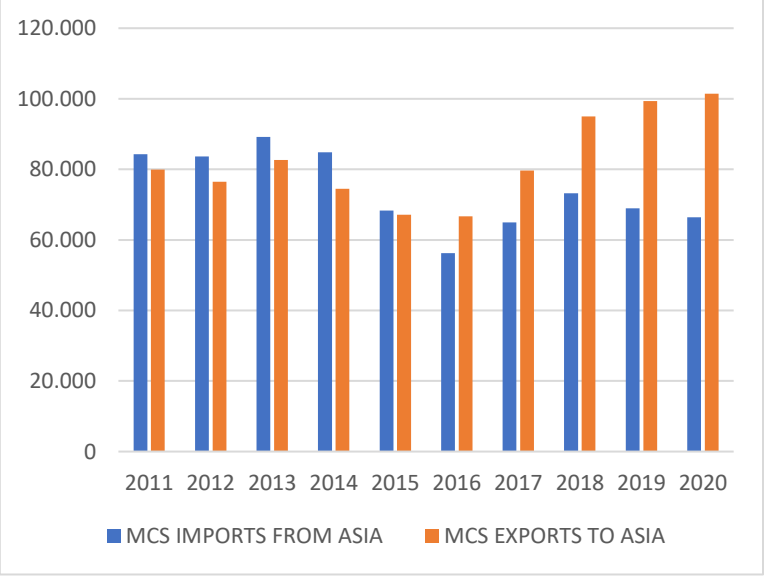
Compared to the trade to the world in 2020, 30% of what MERCOSUR imported was from Asia and 36% of export has as destination Asian countries.

In 2020, 29% of imports were from chapter 85 "Electrical machinery and equipment and parts", totalizing 66,389 USD million, following gods from chapter 84 "Machinery and mechanical appliances" with 16.5% of participation

equivalent to 11,002 USD million. Organic chemicals from chapter 29 accounted for 7.5% of the imports equivalent to 5,000 USD million. Other categories such as "Vehicles other than railway or tramway rolling stock, parts and accessories" from chapter 87, "Ships and boats" from chapter 89 accounts for 6.1% and 4.8% respectively.

Regarding exports, also in 2020, 24% of MERCOSUR exports to Asian countries corresponded to the category of the chapter 12 "Oilseeds and oleaginous fruits" with a value of 24,588 USD million, following gods from chapter 26 "Ores, slag and ash" with 22.4% of participation in export representing 22,797 USD million. Chapter 27 "Mineral fuels, mineral oils" were exported for 15,434 USD million accounting 15.2% of exports. Another important category is Chapter 02 "Meat and edible meat offal" that represents 15.2% of exports with a value of 10,841 USD million.

Figure 2.4. MERCOSUR's Trade with Asian Countries (2011-2020) – Million USD

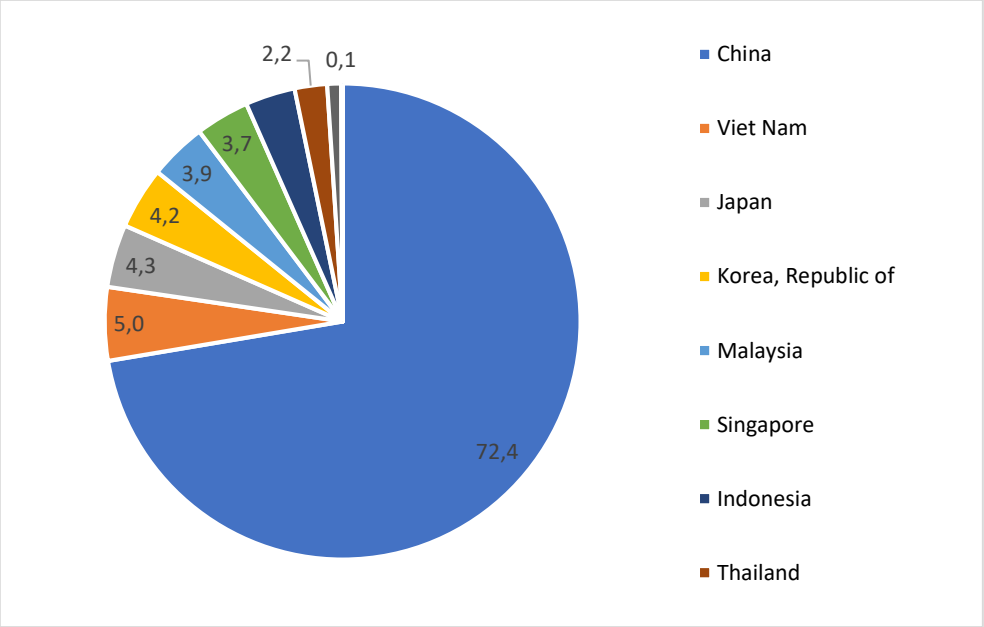


Source: UNCOMTRADE

Taking into consideration the 2020 statistics, 72.4% of the total exported from MERCOSUR countries to Asian countries, are sent to China. Other importing markets from Asia are Vietnam with 5%, Japan with 4.3% and

Republic of Korea with 4.2%. Brazil is the largest exported among all countries, exporting 82.4%, while Argentina, Uruguay and Paraguay exported 9.1%, 1.8% and 6.7% respectively. When it comes to the ranking of importers countries in MERCOSUR, Brazil imports 76.4/, Argentina 18.4% and Paraguay and Uruguay 2.96 and 2.18 respectively.

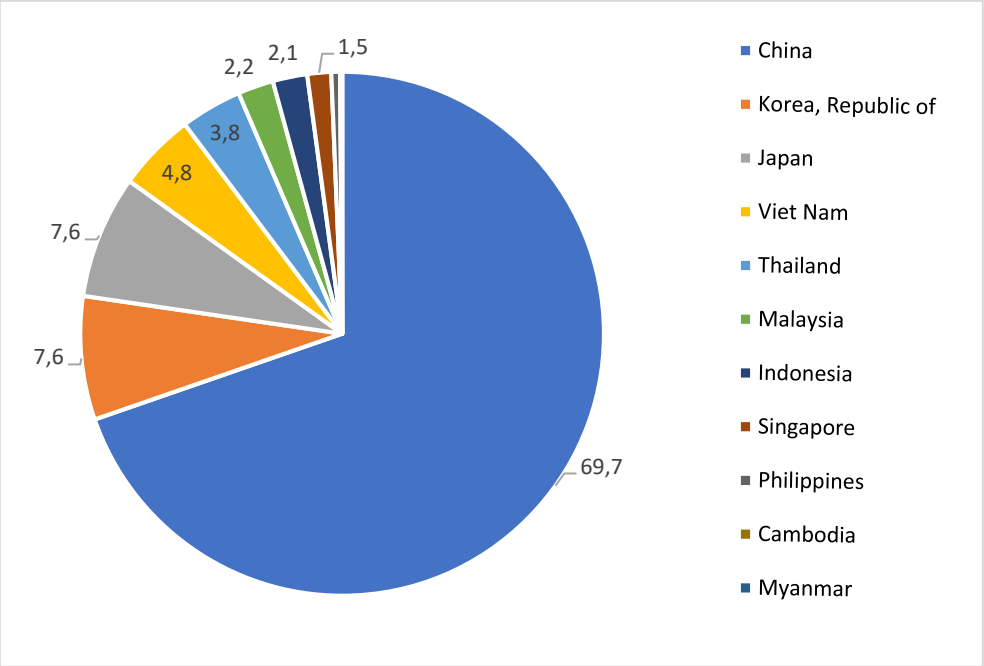
Figure 2.5. MERCOSUR Exports to Asian Countries (2020) – Percentage (%)



Source: UNComtrade

Regarding the list of the Asian supplying markets by products imported from MERCOSUR in 2020, we can see clearly again that China plays a major role, exporting to MERCOSUR, 69.7% of the Asian imports are from this country. After China, the Republic of Korea is the following exporting country with 7.6%, followed by Japan with also 7.6%. Other suppliers are Vietnam, Thailand and Malaysia with 4.8%, 3.8% and 2.2% respectively.

Figure 2.6. MERCOSUR Imports from Asian Countries (2020) – Percentage (%)



Source: UNComtrade

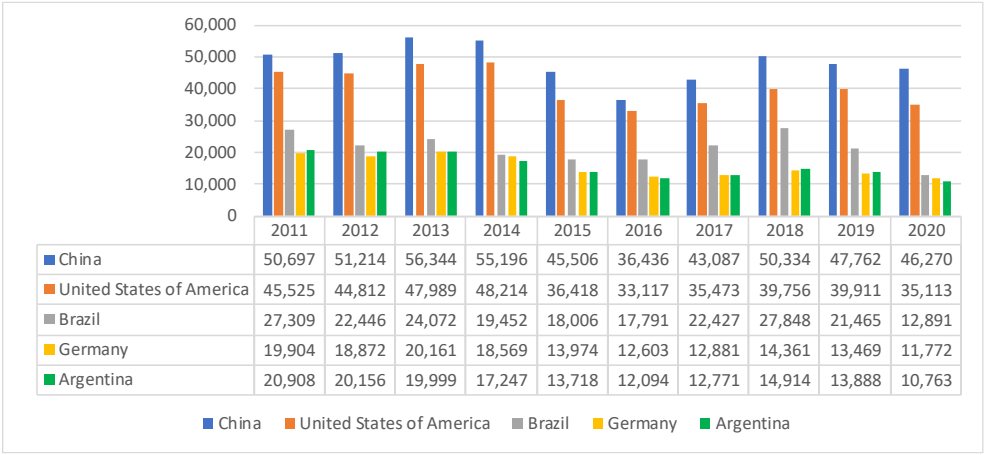
From the statistics, it can be seen that there is less trade volume with some Asian countries. First, from the export side, Philippines, Myanmar, Cambodia, Lao People's Democratic Republic and Brunei Darussalam, all together account for only 1% of exports from MERCOSUR. Secondly, from the import side, the same countries account for only 0.66% al together. In other words, MERCOSUR imports a not significant percentage from these countries.

2.2.3 Overview of MERCOSUR's trade with Major Trade Partners

Imports statistics in Figure 2.7 indicate the relevance of China and the United States in this relationship, MERCOSUR in 2020 imported 46,270 million USD and 35,113 million USD respectively. However, we can see a slight decline of imports from China through the years. But mainly, the trade pattern stays the same during the years and the countries do not change position

being the major trade partners of MERCOSUR in terms of imports.

Figure 2.7. MERCOSUR's Imports with Major Trade Partners (2011-2020) – Million USD



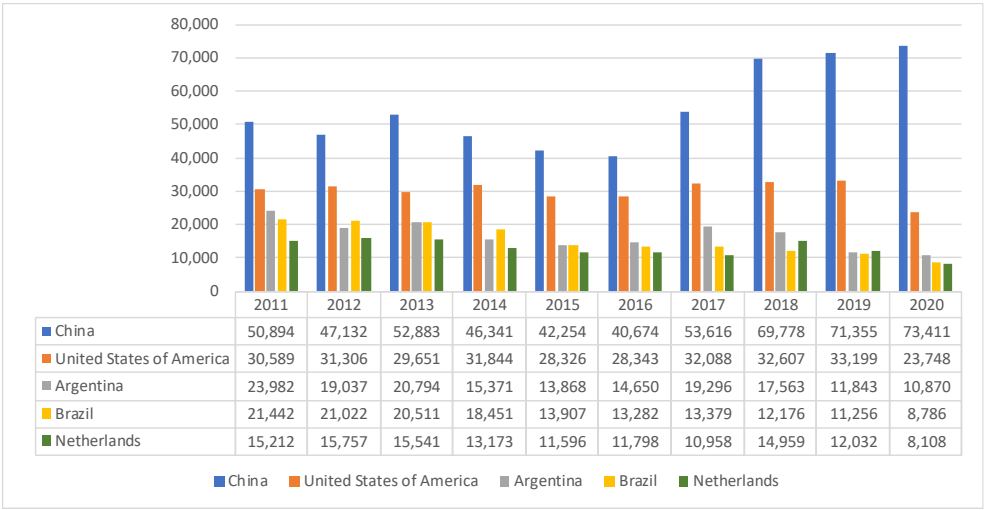
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
China	50,697	51,214	56,344	55,196	45,506	36,436	43,087	50,334	47,762	46,270
United States of America	45,525	44,812	47,989	48,214	36,418	33,117	35,473	39,756	39,911	35,113
Brazil	27,309	22,446	24,072	19,452	18,006	17,791	22,427	27,848	21,465	12,891
Germany	19,904	18,872	20,161	18,569	13,974	12,603	12,881	14,361	13,469	11,772
Argentina	20,908	20,156	19,999	17,247	13,718	12,094	12,771	14,914	13,888	10,763

Source: UNCOMTRADE

In 2020, 16% of what MERCOSUR imported from the main trade partners were products from chapter 84 "Machinery and mechanical appliances", totalizing 17,18 USD million, followed by gods from chapter 85 "Electrical machinery and equipment and parts", totalizing 16,671USD million, a total of 15% of the total. Chapter 27 "Mineral fuels, mineral oils" were imported for 10,683 USD million accounting 9.9% of imports. Lastly, the "Vehicles other than railway or tramway rolling stock, parts and accessories" from chapter 87 accounted for 7.9% totalizing 8,526 USD million.

On the other side, exports statistics in Figure 2.8 indicates the major partners are also China and the United States, followed by Argentina and Brazil, current members of MERCOSUR. It is noticeable the amount played in exports to China.

Figure 2.8. MERCOSUR's Exports with Major Trade Partners (2011-2020) – Million USD

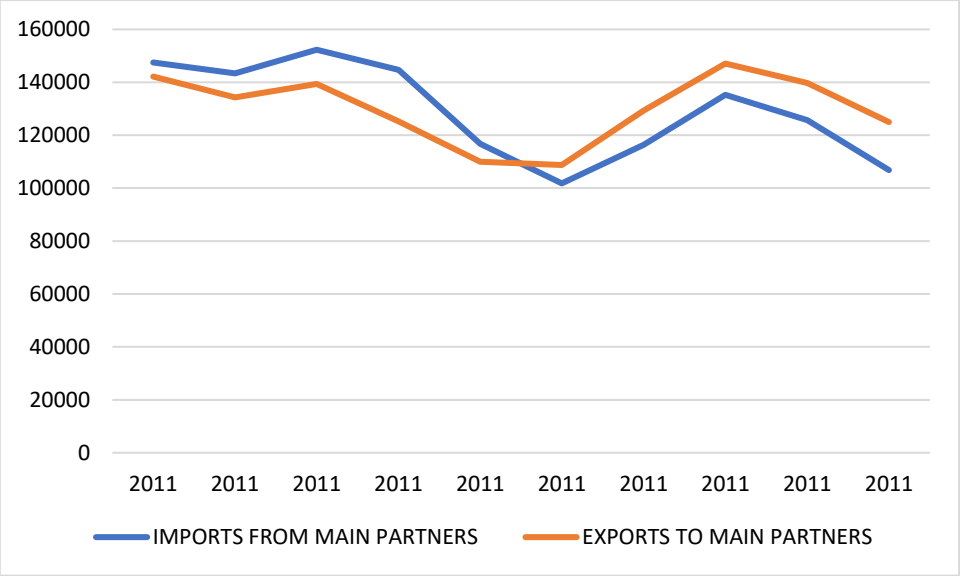


	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
China	50,894	47,132	52,883	46,341	42,254	40,674	53,616	69,778	71,355	73,411
United States of America	30,589	31,306	29,651	31,844	28,326	28,343	32,088	32,607	33,199	23,748
Argentina	23,982	19,037	20,794	15,371	13,868	14,650	19,296	17,563	11,843	10,870
Brazil	21,442	21,022	20,511	18,451	13,907	13,282	13,379	12,176	11,256	8,786
Netherlands	15,212	15,757	15,541	13,173	11,596	11,798	10,958	14,959	12,032	8,108

Source: UNCOMTRADE

Regarding the products of the year 2020, 21% of MERCOSUR exports to its main partners corresponded to the category of the chapter 12 "Oilseeds and oleaginous fruits" with a value of 26,677 USD million, following gods from chapter 26 "Ores, slag and ash" with 16% of participation in export representing 20,225 USD million. Chapter 27 "Mineral fuels, mineral oils" were exported for 16,721 USD million accounting 13.3% of exports. Another important category is Chapter 02 "Meat and edible meat offal" that represents 8.3% of exports with a value of 10,376 USD million.

Figure 2.9. MERCOSUR's Trade with Main Partners - USD Million



Source: UNCOMTRADE

2.3 Background of MERCOSUR member countries

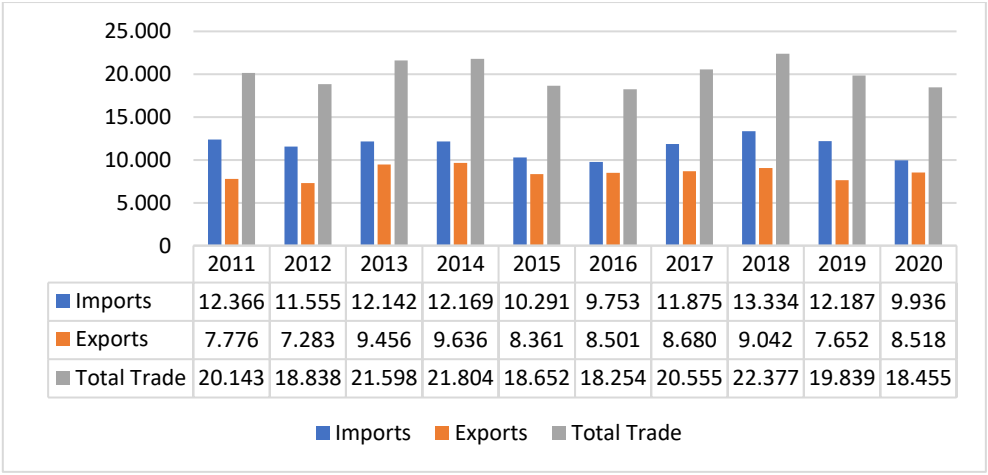
2.3.1 Background on Paraguay's Foreign Trade

International trade plays a crucial role in Paraguay's economy. According to the World Bank, Paraguay's trade as a percentage of GDP was 65% for 2020, compared to 46% in Latin America and 53% of the world. Additionally, to the trade agreements that Paraguay has as a member of MERCOSUR, it is also beneficiary by various developed countries with the Generalized System of Preference - GSP[9], such as Australia, Canada, Japan, Russian Federation, New Zealand, Switzerland, Turkey, Norway and USA. More recently, in 2016, Kazakhstan, Kyrgyz Republic and Armenia have granted GSP benefits to Paraguay. (WTO, 2021) Paraguay was excluded from

[9] The Generalized System of Preferences (GSP), which was established in 1971 under the auspices of the United Nations Conference on Trade and Development (UNCTAD), has contributed over the years to creating a favorable trading environment for developing nations. Armenia, Australia, Belarus, Canada, the European Union, Iceland, Japan, Kazakhstan, New Zealand, Norway, the Russian Federation, Switzerland, Turkey, the United Kingdom, and the United States of America offer GSP preferences.

the European Union GSP+ at the end of 2018, considering the upgrade from low-income country to medium-income country.

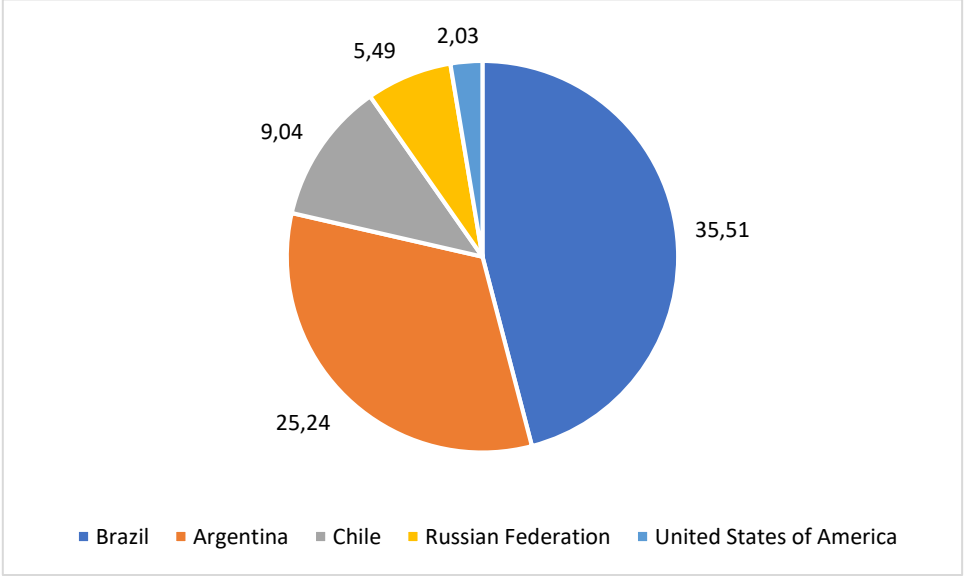
Figure 2.10. Paraguay's Foreign trade (2011-2020) – Million USD



	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Imports	12.366	11.555	12.142	12.169	10.291	9.753	11.875	13.334	12.187	9.936
Exports	7.776	7.283	9.456	9.636	8.361	8.501	8.680	9.042	7.652	8.518
Total Trade	20.143	18.838	21.598	21.804	18.652	18.254	20.555	22.377	19.839	18.455

Source: UNCOMTRADE

Figure 2.11Paraguay's Exports by Country (2020) – Million USD



Importers	%	USD mill.
Brazil	35.51	3,025
Argentina	25.24	2,150
Chile	9.04	770

	Russian Federation	5.49	468
	United States of America	2.03	173

Source: UNCOMTRADE

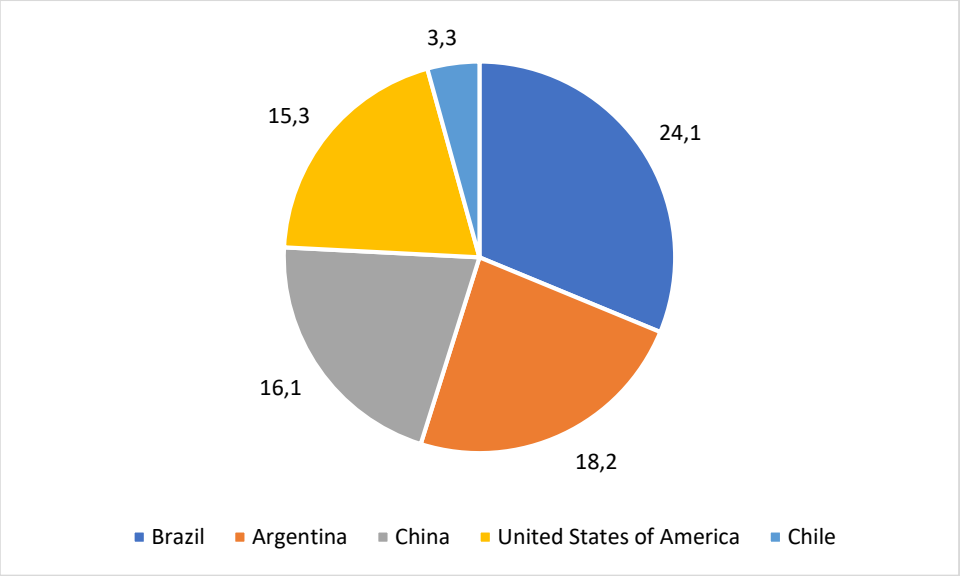
Paraguay's main destination countries for its exports in 2020 were: Brazil with a 35.5% of the total exports, totalizing 3,025 USD million; following Argentina with 25.2 % equivalent to 2,150 USD million after Chile with a 9% and 770 USD million. Extra zone partners are Russian Federation and United States of America with 5.49% and 2.03% of the total exports respectively. Other partners with less percentages are India and Israel with 1.94% and 1.47% respectively.

Table 2.1 Paraguay's Exports by product Top 10 (2020) – Million USD

Code	Product	USD mill.	%
1201	Soy beans	2,146.55	25.2
2716	Electrical energy	1,736.27	20.4
2304	Soy bean oil-cake	682.34	8.0
202	Frozen bovine meat	591.28	6.9
201	Refrigerated bovine meat	526.45	6.2
1507	Soy bean oil	416.79	4.9
1005	Maize	322.34	3.8
1006	Rice	295.01	3.5
8544	Wire cables	179.73	2.1
1207	Chia and sesame seeds	111.81	1.3
	Others	1,509.93	17.7
	Total	8,518.48	100.0

Source: UNCOMTRADE

Figure 2.12. Paraguay's Imports by Country (2020) – Million USD



Exporters	%	Value
Brazil	24.1	2,390.0
Argentina	18.2	1,807.6
China	16.1	1,603.8
United States of America	15.3	1,522.3
Chile	3.3	328.6

Source: UNCOMTRADE

In 2020, the imports of Paraguay were mainly from Brazil (2,390 USD million), Argentina (1,807 USD million), China (1,603 USD million), United States of America (1,522 USD million) and Chile (328 USD million). Other important partners are Uruguay, Germany and India with 271, 215 and 163 USD million respectively.

Table 2.2. Paraguay's Imports by product Top 10 (2020) – Million USD

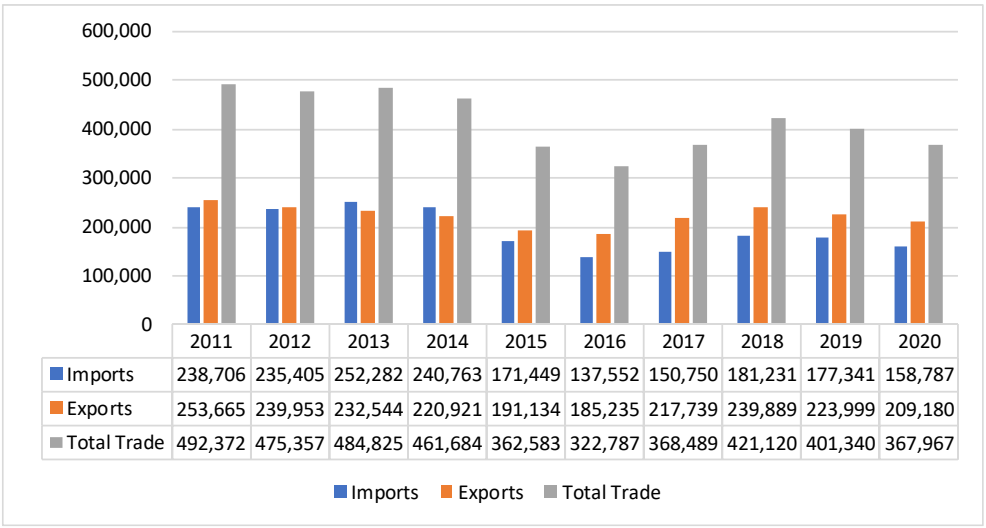
Code	Product	USD mill.	%
8517	Telephones	1,159.03	11.66
2710	Petroleum oils, not crude	1,143.92	11.51
8703	Cars (incl. station wagon)	410.61	4.13
3808	Insecticides, fungicides, herbicides	356.27	3.59
3105	Fertilizers	225.41	2.27
3004	Medicaments	161.94	1.63
4011	New pneumatic tires, of rubber	160.85	1.62
8704	Trucks, motor vehicles for the transport of goods	153.96	1.55
8471	Automatic data processing machines	145.89	1.47
2203	Beer	115.21	1.16
	Others	5,903.19	59.41
	Total	9,936.28	100

Source: UNCOMTRADE

2.3.2 Background on Brazil's Foreign Trade

According to the World Bank, Brazil's trade as a percentage of GDP was 32% for 2020. In addition to the agreements with MERCOSUR, Brazil also has preferential trade agreements under the umbrella of the Latin American Integration Association (ALADI) with Suriname, Colombia-Ecuador-Venezuela, Mexico and Guyana. (SICE, 2021)

Figure 2.13. Brazil's Foreign trade (2011-2020) – Million USD

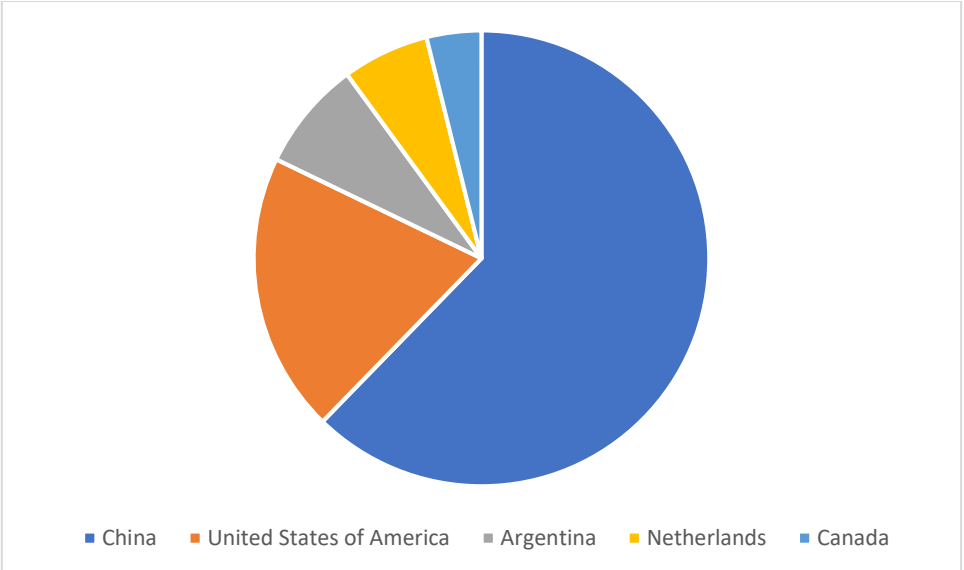


	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Imports	238,706	235,405	252,282	240,763	171,449	137,552	150,750	181,231	177,341	158,787
Exports	253,665	239,953	232,544	220,921	191,134	185,235	217,739	239,889	223,999	209,180
Total Trade	492,372	475,357	484,825	461,684	362,583	322,787	368,489	421,120	401,340	367,967

Source: UNCOMTRADE

In 2020, Brazil's exports mainly consisted of soybeans and iron ores, accounting for 13.66% and 12.22% of the total. Another important product is crude petroleum oils that accounted for 9.38% of the total. Other products are cane sugar, meat, soybean oil and maize.

Figure 2.14. Brazil's Exports by Country (2020) – Million USD



Importers	%	USD MILL.
China	32.4	67,788.1

	United States of America	10.3	21,615.7
	Argentina	4.1	8,488.7
	Netherlands	3.2	6,705.0
	Canada	2.0	4,229.9

Source: UNCOMTRADE

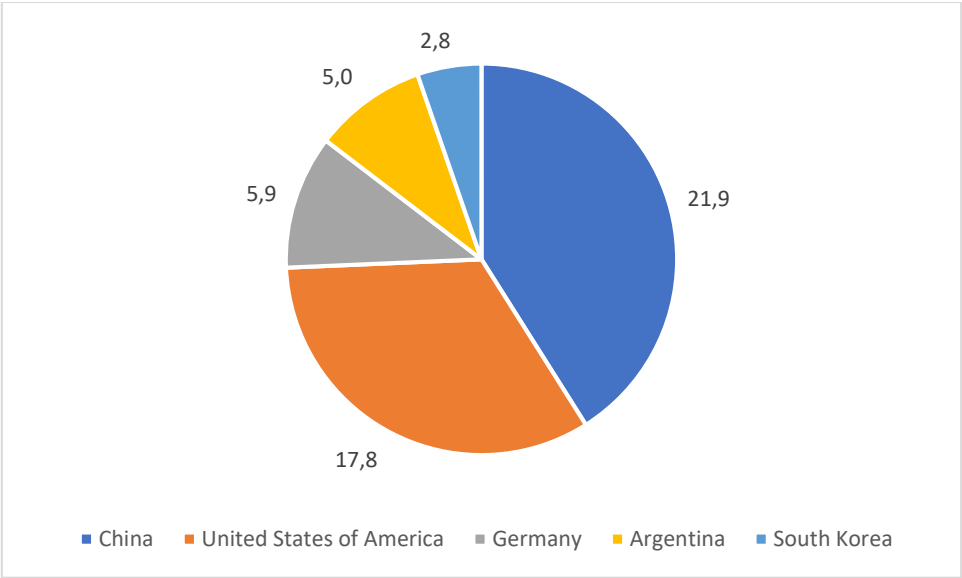
Table 2.3. Brazil's Exports by product Top 10 (2020) – Million USD

Code	Product	USD MILL.	%
1201	Soya beans, whether or not broken	28,564.1	13.66
2601	Iron ores & concentrates	25,789.2	12.33
2709	Crude petroleum oils	19,613.9	9.38
1701	Cane or beet sugar and chemically pure sucrose	8,744.2	4.18
202	Meat of bovine animals, frozen	6,679.1	3.19
2304	Soya-bean oil-cake and other solid residues	5,909.2	2.82
1005	Maize (corn)	5,853.0	2.80
4703	Chemical wood pulp, soda or sulphate}	5,688.7	2.72
207	Meat&edible offal of poltry meat	5,554.5	2.66
2710	Petroleum oils, not crude	5,058.4	2.42
	Others	91,725.8	43.85
	Total	209,180.2	100

Source: UNCOMTRADE

The main import items in 2020 were petroleum oils (4.65% of the total), vehicle parts (3.19%), telephones (2.82%) and electronic circuits (2.54%)

Figure 2.15. Brazil's Imports by Country (2020) – Million USD



Exporters	%	USD mill.
China	21.9	34,778.4
United States of America	17.8	28,207.1
Germany	5.9	9,369.1
Argentina	5.0	7,897.1
South Korea	2.8	4,496.9

Source: UNCOMTRADE

Table 2.4. Brazil's Imports by product Top 10 (2020) – Million USD

Code	Product	USD MILL.	%
2710	Petroleum oils, not crude	7,387.7	4.65
8708	Parts & access of motor vehicles	5,069.1	3.19
8517	Telephones	4,484.9	2.82
8542	Electronic integrated circuits and microassemblies	4,037.4	2.54
8905	Light vessel,dredger;floating dock;floating/submersible drill platform	3,834.3	2.41
3808	Insecticides, fungicides, herbicides	3,693.8	2.33
3002	Human & animal blood, vaccines, toxins	3,351.1	2.11

8411	Turbo-jets, turbo-propellers	3,322.2	2.09
3004	Medicaments	3,279.2	2.07
3104	Mineral or chemical fertilizers, potassic	2,617.6	1.65
	Others	117,709.4	74.13
	Total	158,786.8	100

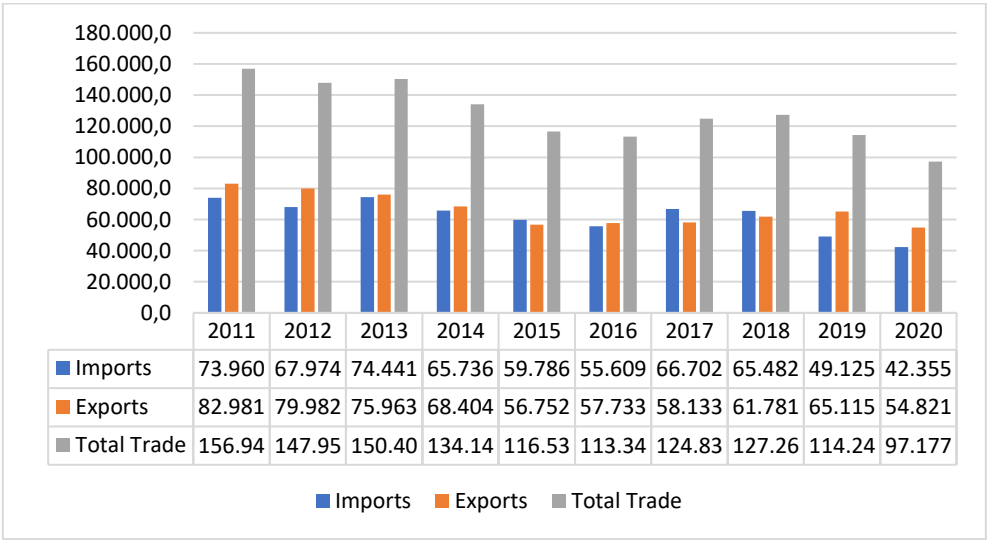
Source: UNCOMTRADE

2.3.3 Background on Argentina's Foreign Trade

According to the World Bank, Argentina's trade as a percentage of GDP was 30% for 2020, despite the decline in trade flows. The reduction in exports is mostly due to a worsening of the trade conditions, at the same time, the drop in imports is due to poor domestic demand of consumer and capital goods. (WTO, 2021)

One of Argentina's key goals in trade policy is to increase and diversify the country's exports, which is why the country's strategy attempts to integrate SMEs[10] into export activity and worldwide value chains, as well as promote social inclusion. (WTO, 2021)

Figure 2.16. Argentina's Foreign trade (2011-2020) – Million USD



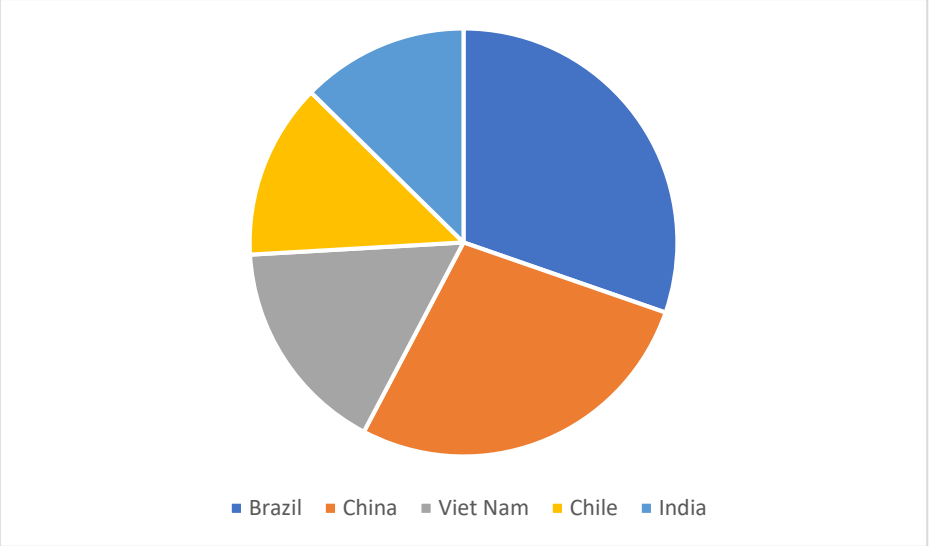
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Imports	73.960	67.974	74.441	65.736	59.786	55.609	66.702	65.482	49.125	42.355
Exports	82.981	79.982	75.963	68.404	56.752	57.733	58.133	61.781	65.115	54.821
Total Trade	156.94	147.95	150.40	134.14	116.53	113.34	124.83	127.26	114.24	97.177

Source: UNCOMTRADE

[10] Small and medium-sized enterprises (SMEs) are organizations with revenues, assets, or staff counts below a specified level. Each nation has its own definition of what a small or medium-sized business is (SME). Certain size requirements must be met, and often the industry in which the company operates is also considered.

Argentina's exports mainly consist of Soybean oil and commodities, that accounts for 14.24% and 11.13% of the 2020 total. Another important product is maize that accounted for 11.09% of the total. Other products that can be highlighted are soybeans, wheat, meat, gold and crude petroleum oils.

Figure 2.17. Argentina's Exports by Country (2020) – Million USD



Importers	%	USD MILL
Brazil	9.3	5,084.3
China	8.4	4,594.6
Viet Nam	5.0	2,746.2
Chile	4.1	2,226.8
India	3.9	2,118.1

Source: UNCOMTRADE

Table 2.5. Argentina's Exports by product Top 10 (2020) – Million USD

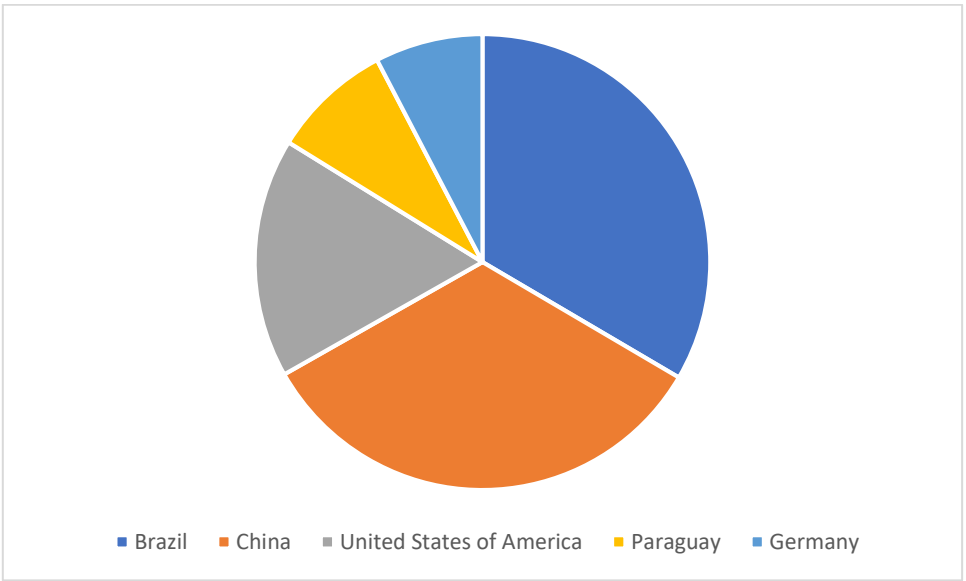
Code	Product	USD MILL.	%
2304	Soya-bean oil-cake	7,805.5	14.24
9999	Commodities not elsewhere specified	6,099.8	11.13
1005	Maize (corn)	6,078.0	11.09
1507	Soya-bean oil&its fractions	3,882.6	7.08
8704	Trucks, motor vehicles	2,456.7	4.48
1201	Soya beans, whether or not broken	2,343.1	4.27
1001	Wheat and meslin	2,117.4	3.86

202	Meat of bovine animals, frozen	2,064.0	3.76
7108	Gold	1,769.4	3.23
2709	Crude petroleum oils	1,076.8	1.96
	Others	19,128.3	34.89
	Total	54,821.6	100

Source: UNCOMTRADE

The main import items in 2020 were soybeans (4.68% of the total), vehicle parts (3.86%), cars (3.81%) and telephones (3.38%

Figure 2.18. Argentina's Imports by Country (2020) – Million USD



Exporters	%	USD mill.
Brazil	20.5	8,685.3
China	20.4	8,656.3
United States of America	10.4	4,414.1
Paraguay	5.2	2,217.9
Germany	4.7	1,988.0

Source: UNCOMTRADE

Table 2.6. Argentina's Imports by product Top 10 (2020) – Million USD

Code	Product	USD MILL.	%
1201	Soya beans, whether or not broken	1,982.4	4.68
8708	Parts & access of motor vehicles	1,634.5	3.86
8703	Cars (incl. station wagon)	1,615.0	3.81
8517	Telephones	1,431.7	3.38
2711	Petroleum gases	1,196.7	2.83
3004	Medicaments	1,065.9	2.52
3002	Human & animal blood; antisera, vaccines, toxins	904.7	2.14
8471	Automatic data processing machines	896.0	2.12
2710	Petroleum oils, not crude	876.4	2.07
3808	Insecticides, fungicides, herbicides	653.8	1.54
	Others	30,098.6	71.06
	Total	42,355.6	100

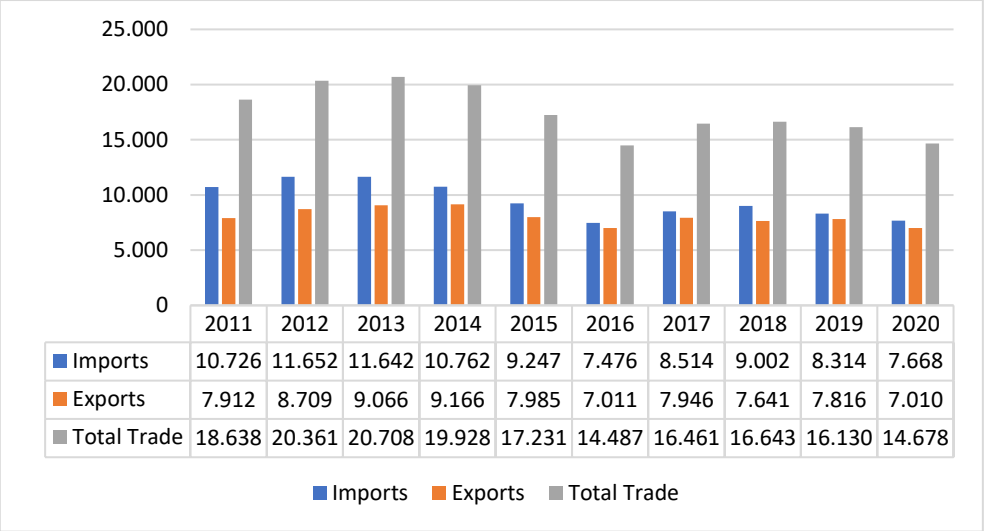
Source: UNCOMTRADE

2.3.4 Background on Uruguay's Foreign Trade

According to the World Bank, Uruguay's trade as a percentage of GDP was 46% for 2020. Uruguay also has preferential trade agreements under the umbrella of the Latin American Integration Association (ALADI) with Colombia-Ecuador-Venezuela. (SICE, 2021)

Uruguay's trade policy is intimately related to its MERCOSUR membership. One of the goals in terms of trade policy is to provide an adequate access to foreign markets. (WTO, 2018)

Figure 2.19. Uruguay's Foreign trade (2011-2020) – Million USD

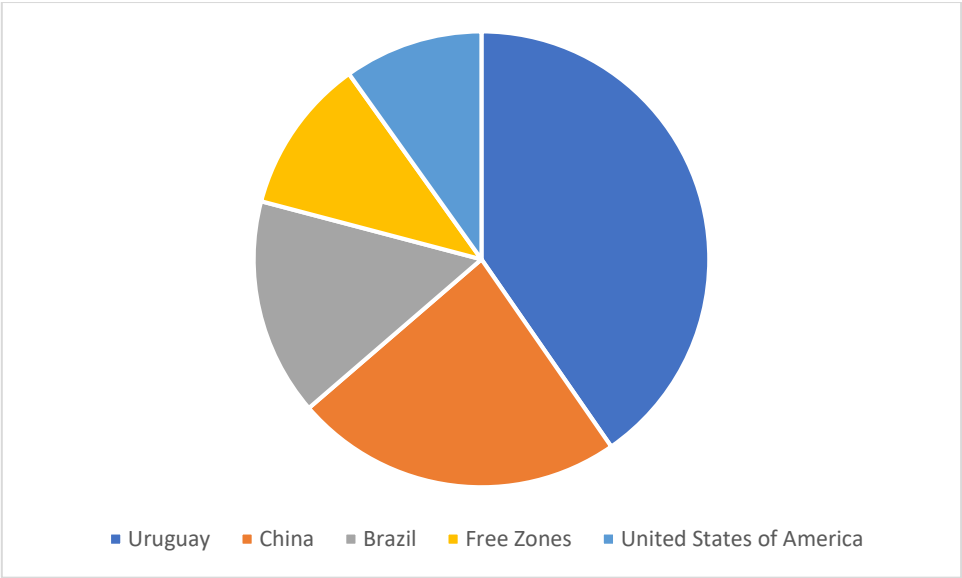


	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Imports	10.726	11.652	11.642	10.762	9.247	7.476	8.514	9.002	8.314	7.668
Exports	7.912	8.709	9.066	9.166	7.985	7.011	7.946	7.641	7.816	7.010
Total Trade	18.638	20.361	20.708	19.928	17.231	14.487	16.461	16.643	16.130	14.678

Source: UNCOMTRADE

Uruguay's exports mainly consist of commodities, in the majority food, wood and agricultural raw materials. Meat of bovine animals and wood accounts for 18.41% and 11.07% of the 2020 total. Another important product is soy beans that accounted for 10.75% of the total. Other products that highlights Uruguay's exports are milk, rice, malt, plastic packing goods, edible offals and cheese.

Figure 2.20. Uruguay's Exports by Country (2020) – Million USD



Importers	%	USD MILL.
Uruguay	25.0	1,754.6
China	14.5	1,014.6
Brazil	9.6	670.3
Free Zones	6.8	479.4
United States of America	6.1	429.5

Source: UNCOMTRADE

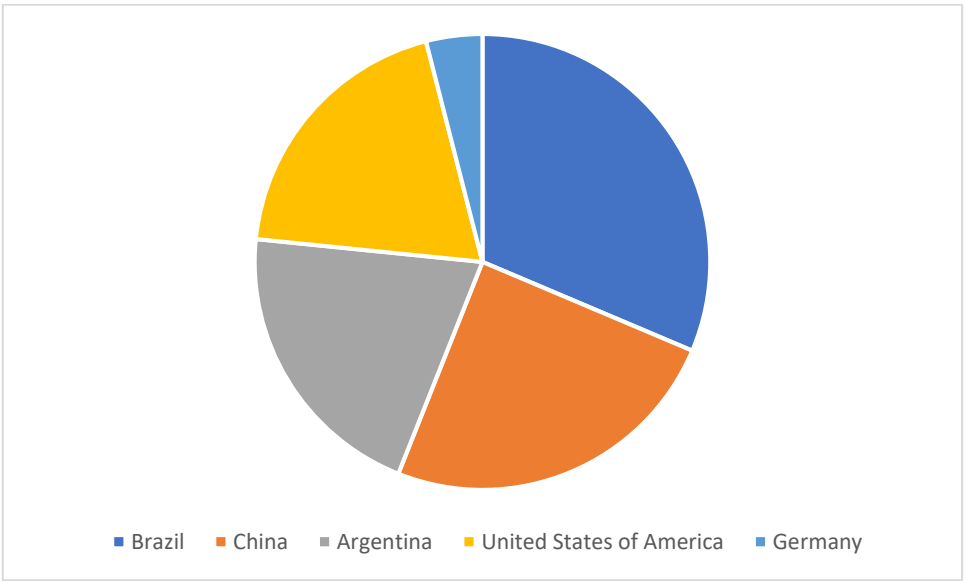
Table 2.7. Uruguay's Exports by product Top 10 (2020) – Million USD

Code	Product	USD MILL.	%
202	Meat of bovine animals, frozen	1,290.5	18.41
4403	Wood in the rough	776.3	11.07
1201	Soya beans, whether or not broken	753.8	10.75
402	Milk and cream	471.0	6.72
1006	Rice	468.9	6.69
201	Meat of bovine animals, fresh or chilled	288.0	4.11
1107	Malt, whether or not roasted	199.4	2.84
3923	Plastic packing goods	128.1	1.83
206	Edible offal of red meat	124.1	1.77
406	Cheese and curd	107.8	1.54
	Others	2,402.3	34.27
	Total	7,010.2	100

Source: UNCOMTRADE

The main import items in 2020 were crude petroleum oils (9.54% of the total), telephones (3.29%), cars (3.23%) and insecticides (2.06%)

Figure 2.21. Uruguay's Imports by Country (2020) – Million USD



Exporters	%	USD Mill.
Brazil	20.4	1,566.5
China	16.1	1,231.2
Argentina	13.4	1,027.7
United States of America	12.6	969.2
Germany	2.6	199.286

Source: UNCOMTRADE

Table 2.8. Uruguay's Imports by product Top 10 (2020) – Million USD

Code	Product	USD MILL.	%
2709	Crude petroleum oils	731.6	9.54
8517	Telephones	252.6	3.29
8703	Cars (incl. station wagon)	247.9	3.23
3808	Insecticides, fungicides, herbicides	158.2	2.06
3004	Medicaments	154.1	2.01
8704	Trucks, motor vehicles for the transport of goods	149.3	1.95
201	Meat of bovine animals, fresh or chilled	115.0	1.50

8471	Automatic data processing machines	108.4	1.41
3102	Mineral or chemical fertilizers, nitrogenous	103.3	1.35
3907	Polyacetal,o polyether,epoxide resin,polycarbonate,etc,in primary form	99.7	1.30
	Others	5,547.8	72.35
	Total	7,667.9	100

Source: UNCOMTRADE

Chapter 3. Methodology

3.1 Research Method

The research was mainly conducted through empiric and quantitative methods, specifically the gravity model approach. Data from 10 years was used, from 2011 to 2020 on a sample of 20 countries. Empirical observation through literature review was done to acquire knowledge of previous research and to carefully select the variables of the study. To conduct the gravity model, a multiple regression was done. Multiple regression is a multivariate statistical approach for assessing three or more variables that is commonly utilized.

This research used secondary data that was collected mainly from international organizations sources, such as the International Monetary Fund, UNCOMTRADE, Trademap from the International Trade Centre, World Trade Organization, World Bank. In addition, Paraguayan sources such as the Customs Directorate, Paraguayan Central Bank, National Statistics Institute, between others were used as well.

3.2 Research Question

The research was focus on a multi country gravity analysis. To conduct the research, the main following question was answered:

- What are the main factors that positively and negatively influence Mercosur's countries intraregional and extra regional trade?

3.3 Variables

The necessary data used in the research are the ones which are also the dependent, independent and dummy variables.

Dependent variable

Bilateral trade flows by value (in US dollars) was collected from the UN COMTRADE database.

Independent variables

Gross Domestic Product (GDP): was collected from the World Development Indicators of the World Bank. According to their definition, "GDP at purchaser's prices is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. Data are in current U.S." (World Bank, 2021)

Population: was also collected from the World Development Indicators of the World Bank. According to their definition "Total population is based on the de facto definition of population, which counts all residents regardless of legal status or citizenship. The values shown are midyear estimates" (World Bank, 2021)

Distance between countries. in kilometers between the capital of the countries was utilized. This data was collected from the Centre d'Etude Perspectives et d'Information International (CPII). CPII has an extensive database with valuable data needed for gravity models, information from various sources is collected and harmonized.

Trade value of previous year: In most circumstances, the amount of international commerce between two nations is considered as being highly dependent on the preceding year's trade volume. In order to capture the time series effect, this lagged dependent variable was added. This variable was obtained from the UN COMTRADE database as well.

Bilateral Inflows of Foreign Direct Investment. According to the International Monetary Fund (IMF) definition, "Foreign direct investment are the net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor". This variable was collected from different sources, starting with the Paraguayan, Brazilian, Argentinian and Uruguayan Central Banks. In addition, other international sources were needed, such as the Investment Map from the International Trade Centre, the Export-Import Bank of Korea, Central Bank of Philippines, State Bank of Vietnam, the United States Bureau of Economics and the Direct Investment Coordinated Survey from the

International Monetary Fund (IMF).

Dummy variables

Existence of Trade Agreements or Trade Preferences: The database of the World Trade Organization, MERCOSUR, the Foreign Trade Information System of the Organization of American States and the ASEAN web site were utilized to find this information. Preferential trade agreements and unilateral concessions, such as the generalized systems of preferences were taken into account.

Landlocked country: the List of Landlocked Developing Countries from the United Nations Conference on Trade and Development was utilized.

Chapter 4. Empirical Analysis

4.1. Gravity Model Equation

The gravitational equation, in its simplest form, includes the Gross Domestic Product (GDP), as well as the population and the distance between countries.

The gravity model assumes a positive and significant coefficient when analyzing the Gross Domestic Product, the economies become bigger and they start to trade more intensively. On the other hand, a negative coefficient is expected on the distance side. The more far away countries are located from each other, the less trade they would have between them. The traditional gravity model reflects the dependency of a country's GDP on bilateral trade and the distance between them. However, in practice, there are other additional factors that might impact trade volumes between countries. In this regard, for this analysis, the gravity equation was extended to an augmented model.

In this research other variables are added to the equation, which are: population, foreign direct investment, and bilateral trade of the previous year. Also, 2 dummies variables are included. One of them, Agreement or Trade Preference and the status if a country is landlocked or not.

The following equation is presented:

log(trade(t) ij) = β 0 + β 1 *log(GDP i *GPD j) + β 2 *log(population i *population j) + β 3 *log(distance ij) + β 4 *trade(t-1) ij + β 5 *FDI ij + β 6 *agreement ij + β 7 *landlocked + ε ij

Where:

- **ij** are trade partner countries
- **t** corresponds to year
- **log(trade(t) ij)** is the bilateral trade flow between countries
- **β 0** is the intercept
- ***log(GDP i *GPD j)** is the Gross Domestic Product of trade partners
- ***log(population i *population j)** Population of trade partners

- ***log(distance ij)** is the distance between trade partners
- ***trade(t-1) ij** is the previous year trade volume of the trade partners
- ***FDI ij** is the bilateral foreign direct investment between countries
- ***agreement ij** is a dummy variable that it is equal to 1 if there is a trade agreement or tariff preference between the countries and adopts the value of 0 if it does not exist.
- ***landlocked** it is a dummy variable, that adopts the value of 1 if one of the trade countries does not have a maritime coastline and adopts the value of 0 if one of the countries does have it. The value of 2 is given in the case of both partner countries are landlocked
- ε ij is random error
- β 1, β 2, β 3, β 4, β 5, β 6, β 7 are coefficients

The greater the country's GDP, the larger its domestic market and the greater the number of imports it has drawn. Even more importantly, it has a big manufacturing capacity and is boosting its exports based on its comparative advantage. All of this is expected to contribute to a rise in bilateral trade volumes, which will have a favorable impact on the predicted coefficient β 1.

The population variable serves as a proxy for a country's economic size, more precisely its domestic market size. Nations with a big population have a high demand for the commodity, which may be interpreted as a reason for these countries' high export levels. According to the experts, countries with a higher population are more inclined to trade than those with a smaller population. As a result, the projected coefficient β 2 should be positive.

Geographical distance between nations is represented by a trade barrier variable that quantifies the distance between two countries, hinting as a resistance element to commerce between countries. The coefficient of distance in the gravity model hypothesis suggests that commerce with nearby nations is rising at a higher rate than trade with countries that are a long distance away. In this context, Coefficient β 3 will likely be negative.

Trade exchanges established in the preceding year should have a favorable effect on future bilateral trade as well. In this context, a positive sign is projected for the coefficient β 4 of bilateral trade value from the previous

year.

Regarding coefficient β 5, a positive relation is expected, due to the complementarity between trade and foreign direct investment.

Agreement between nations is supposed to boost trade, so for coefficient β 6 a positive result is expected.

The fact of a country being landlocked could reflect the obstacles facing to trade internationally, that's why a negative result could be derived from coefficient β 7.

Using the equation above stated, the regression analysis and the result were analyzed. For computing, the SAS on demand for academics software was used. In order to apply the model, a panel data was prepared and created with the most trustworthy possible sources. They consist of 20 selected countries in a period of 10 years (2011-2020). For the purpose of computing, members of ASEAN countries were grouped as one country all together. Additionally, because of the utilization of the lagged dependent variable, the times series length is 9 years.

4.2. Regression results

Applying the panel data into Gravity Model and run SAS on demand for academics, the following result observed:

Table 4.1. Regression Results

Parameter Estimates

Variable	Estimate	Standard Error	t Value	Pr > |t|
Intercept	-14.986	4.537	-3.30	0.001***
ln_gdp	0.318	0.047	6.74	<.0001***
ln_pop	0.129	0.114	1.13	0.2606
ln_dist	-0.398	0.267	-1.49	0.1368
ln_trade2	0.586	0.036	16.37	<.0001***
ln_fdi	-0.026	0.005	-4.95	<.0001***
agreement	0.001	0.581	0.00	0.9993

landlocked	-0.030	0.680	-0.04	0.9648

Note: p < 0.1 : *, p < 0.05 : **, p < 0.01 : ***

Model Description

Estimation Method	random effect
Number of Cross Sections	55
Time Series Length	9
Total of observations	495

Fit Statistics

SSE	5.8217	**DFE**	412
MSE	0.0141	**Root MSE**	0.1189
R-Square	0.5965		

Hausman Test for Random Effects

Coefficients	**DF**	**m Value**	**Pr > m**
4	4	3.22	0.5218

4.2.1 Discussion of results

The Hausman test was carried out. This test is also referred to as a model misspecification test. Model misspecification is a situation in which the model created with regression analysis is incorrect. It fails to account for all that should be accounted for. Incorrectly defined models may contain biased coefficients and error terms, as well as biased parameter estimations. It was important to conduct this test because it allowed me to decide whether to use a fixed effects model or a random effects model in the panel data analysis. According to its null hypothesis, the random effects model is supposed to be best suited. The alternate hypothesis chooses the fixed effects model. Since the p-value of the Hausman test is larger than 0.05, I could not reject the null hypothesis, meaning that the random effect model is better than the fixed effect model. Also, it is important to notice that there are some time-invariant

variables. For this reason, the random effect model is better than the fixed effect model. The coefficients of the variables are likely to be calculated more precisely.

The number of cross sections is 55, in a 9-year time series, which gives a total of 495 observations. That is enough to provide a good indication of the size of the data set.

The R Square result is 0.5965, which indicates a good quality model. The accuracy of the regression equation selection is high. As we can see, in 59% of the cases when X changes leads to changes in Y. In other words, the independent variables explain fifty nine percent of the changes in the dependent variable.

As a result, it can be said that the factors effectively explain the bilateral trade between the analyzed countries. The regression results correctly classify the variables affecting bilateral trade between partners and are highly useful for examining the trade flows between them. According to the regression coefficients, the following extended equation for the gravity model is as follows:

log(trade(t) ij) = -14 + 0.3 *log (GDP i *GPD j) + 0.1 *log(population i *population j) – 0.3 *log(distance ij) + 0.5 *trade(t-1) ij - 0.02 *FDI ij + 0.001 *agreement ij – 0.03 *landlocked

The statistically significant variables are GDP, trade(t-1) and FDI. The remaining variables of population, distance, agreement, and landlocked country are not statistically significant considering this set of data and results.

The above equation can be explained as follows:

- The volume of trade between partners increases by 0.3 percent, when the GDP of the partner countries increases by 1 percent.
- Trade flows increase by 0.5%, if the trade volume of previous year between partner countries increases by 1 percent.
- If the foreign direct investment increases by 1%, trade decreases by 0.02%, negatively impacting trade flows.
- The trade flow increases by 0.1 percent, if the population between

trading countries increases by 1 percent.

- If the distance increases by 1%, trade decreases by 0.3%

The population of the partner countries and the distance between them do not affect the trade volume. Although the coefficient for distance was negative as expected, it is not significant.

Also, the agreement between partners and the fact that there might be landlocked countries between them do not affect the trade volume. Contrary to what was predicted, these two variables are not significant.

When thinking about some explanations for the observed outcome, an interesting feature is the result of foreign direct investment. For this data set, the coefficient tells us that the FDI would actually decrease the trade flows. According to research, the link between FDI and international commerce is frequently complimentary rather than competing. It is commonly believed that inbound FDI has a net beneficial effect on a country's exports. This is because of the transfer of knowledge and new goods for export, as well as the facilitation of access to foreign markets. FDI also enables the transfer of intangible assets such as skills and technological knowledge that cannot be transferred through trade.

Despite these links, it is also possible that inbound FDI may have a detrimental effect on a country's exports if the investment is limited to the domestic market, that could be the case for explanation in this situation. As an example, major FDI inflows in Paraguay in 2020, came from Brazil with 75 USD million, following the Netherlands with 7.13 USD million, Germany with 5.44 million, and the United States with 3.51 USD million, followed by Asian countries like Japan, China, and South Korea with 3.21 USD million, 1.6 USD million, and 0.79 USD million, respectively. Three Asian countries, as well as MERCOSUR's major trade partners, are present in the top 10 FDI inflow countries of origin, which is clearly a big deal. (BCP, 2021)

The gravity model that was done confirms that the economic mass of the countries is important and that also, of course, distance has a negative impact on trade, but for this data set, fortunately, it is not significant. For example, if we look at the trade between MERCOSUR and Asian countries, in

2020, 30% of MERCOSUR imports were from Asian countries and 36% of exports had as destination the countries of Asia. This illustrates how distance can be overcome with other factors. As an example, Japan currently grants Paraguay the Generalized System of Preferences – GSP to a certain number of gods, so Paraguay is able to export some of its products with a reduced or 0% tariff. Mostly, Paraguay exports to Japan sesame and chia seeds, taking advantage of this system. (UNComtrade, 2021)

Another variable that was significantly important was the trade of the previous year. This conclusion implies that nations' prior trading experience with each other (or, in this example, one year prior) has a favorable effect on the trade value under study.

Landlocked countries confront plenty of challenging issues. They are at a considerable economic disadvantage relative to the rest of the globe because of their geographical isolation, lack of immediate access to the open ocean, and high shipping and transit expenses. In this dataset, Paraguay and Laos are landlocked countries.

The Paraguay-Paraná waterway is a 3,400-kilometer-long natural river transit corridor that runs via the Paraná and Paraguay rivers and provides continuous passage between Argentina, Brazil, Bolivia, Paraguay, and Uruguay. The waterway is part of a large water system known as “Cuenca del Plata,” which covers an area of little over three million square kilometers and empties into the Rio de la Plata.

Currently, the river transports manufactured goods, cereals, oilseeds, oils and byproducts, ore, minerals, steel, and petroleum. Paraguay, on the other hand, need considerable infrastructure expenditures to improve its share of the canal in order to maximize the benefits of its strategic location.

Regarding the agreement variable which is not significant, could be because in this dataset, China is included. There could be a reason for the agreement variable not to be significant, due to the nonexistence of diplomatic relations between Paraguay and China. The case of Paraguay is that China does not allow us to have diplomatic relationships because we recognize Taiwan as a country and maintain strong diplomatic relationships with them.

Contradictory, one of the major import origins of Paraguayan imports is China. With this happening, it can clearly be seen that the trade agreement between these nations does not matter, for this particular case, just as an example.

That being said, I strongly believe in the advantages of trade agreements. Free trade agreements abolish and lower tariffs, as well as assist in overcoming barriers that might otherwise impede the flow of products and even services, boost investment, and enhance the laws governing intellectual property, e-commerce, and government procurement. Even though for this data set this variable was not significant, I strongly believe in always encouraging new deals.

4.3 Descriptive Statistics

Correlation analysis between the dependent and independent variables was conducted. The results are as follows:

Table 4.2. Correlation Results

6 With Variables:	Distance, GDP, population, FDI, agreement, landlocked
1 Variable:	trade

Pearson Correlation Coefficients, N = 550

	trade
distance	-0.313
GDP	0.78216
population	0.725
FDI	0.27974
agreement	0.37837
landlocked	-0.27729

According to the correlation results, the distance and being a landlocked country is negative correlated to the dependent variable trade. That means as distance increases, bilateral trade between two countries decreases, since it makes logistic more expensive and time consuming. In addition, landlocked countries have no access to maritime ports that adversely affects the

bilateral trade. On the other hand, GDP, population, FDI and agreement are positively correlated to bilateral trade. Especially the GDP and populations has more profound positive impact on bilateral trade compared to FDI and agreement as indicated in Table 11 correlation coefficient values.

4.4 Policy Implications

The most important variable of the gravity model, the GDP, regarding the economic mass of a country, turned out to be significant, demonstrating the validity of the model. It is crucial that governments can encourage economic growth and this could be possible by a number of ways.

First of all, job creation, that could also be achieved by encouraging investments that could potentially offer more jobs. Increasing productivity of goods and service are also important increase the return on investment for the companies.

Especially in Latin American region, the economy is characterized by agriculture and services. Most of the contribution to the GDP is made by small and medium enterprises. That is why it is extremely important to continue to support entrepreneurs and small businesses. Government should create and foster an entrepreneurial environment, making people aware of the importance of work to improve the living standards.

The government is advised to raise awareness in society about the importance of not only working as an employee for others, but also about the importance and potential of starting their own business to improve their lives. For this, it is important that the state works to arrange loans that small enterprises can access to finance their own business. A way to encourage innovation in small businesses is by also giving more attention to social innovation and gender equality, in order to achieve the sustainable development goals at the same time.

According to various authors, trade has been an important key factor of the Korean Development experience (Van Hoa, 2004). According to Han (1991), studies done around the end of the past century pointed that "… Korea's export expansion strategy contributed significantly to the overall expansion of

the economy. An estimate shows that export growth accounted for less than 10 percent of real GNP growth before 1960. Its contribution rose during the 1960s, reaching over 20 percent in the first half of the 1970s. By the latter half of that decade, about a third of national growth could be attributed to the expansion of exports".

The experiences of Korean developmental state serve as lessons to other countries to try to follow Korea's steps in achieving economic growth, of course, always taking in consideration the adaptation to the determined country, according to its own situations.

It should not be forgotten that distance plays a key role in trade. For this reason, logistics is crucial. There is a need to work on a logistic plan that can come up with a set of projects that needs to be prioritize by the public and private sector, that could potentially strengthen the infrastructure.

Logistics is also related to the fact that there are some landlocked countries. Although nowadays there are a lot of improvements on transportation systems, governments should be aware of this and work in initiatives to modernize the sector, improving infrastructure, that will drive into competitiveness and cost reduction, and more importantly, increase trade.

Logistics and transportation systems improvement is also connected with trade facilitation issues that the World Trade Organization-WTO member have under the Trade Facilitation Agreement [11]. There are commitments countries should fulfill, such as time reduction and transparency in bureaucratic processes that are required for import and export, the implementation of single windows, among others.

Logistics and trade facilitation are also related to Foreign Direct Investment, a country is likely to be able to attract more investment if the conditions and infrastructure of logistics are outstanding.

Transit freedom is particularly important for landlocked countries. Landlocked countries incur greater trade costs as a result of their lack of direct

[11] On February 22, 2017, the Trade Facilitation Agreement (TFA) came into force. It only applies to WTO members who have ratified the agreement. In accordance with Article X:3 of the Marrakesh Agreement Establishing the World Trade Organization, for each member that accepts the TFA after its entrance into force, it will take effect immediately upon acceptance.

access to the sea, making it more difficult for them to retain competitiveness in both commerce and investment. Freedom of transit is critical for landlocked countries' integration into the international economy and economic development, allowing them to make the transition from landlocked to “land-linked” status. Therefore, finding a solution on the way to increase the opportunity for access to ports should be devised. This may include agreements with countries having access to the ports, based on mutual benefits. It can be renting ports, which some countries are doing to increase their trade activities.

Negotiations of agreements should be encouraged. After the pandemic, a lot of trade negotiations were stopped and never continued. Agreements such as MERCOSUR-Korea, MERCOSUR-ASEAN can boost the region economic growth by increasing trade between them and diversifying the export offer.

On the other hand, Korea enthusiastically pursues RTAs[12] with its most important trade partners. More recently, it has signed the Regional Comprehensive Economic Partnership (RCEP) Agreement in November 2020, that has not been ratified yet. In 2018, it signed an RTA with Central American countries: Costa Rica, El Salvador, Honduras, Nicaragua, and Panama. In August 2019, Korea signed an RTA with the United Kingdom that entered into force recently on 1 January 2021. Negotiations with Israel finalized in 2019 but there is no signature yet. Korea signed an RTA with Indonesia in 2020 but hasn’t been ratified either. (WTO, 2021).

South Korea has led the race toward bilateral FTAs[13] since its first cross-Pacific free trade deal with Chile in 2003. It is the only country that has concluded bilateral FTAs with three major economies among its top five trading partners: China, the U.S., the EU, and ASEAN.

The Trans-Pacific Partnership (TPP) began as an expansion of P4[14] and was signed in 2016 by 12 countries including the P4, Australia, Canada, Japan, Malaysia, Mexico, Peru, the U.S., and Vietnam. It never entered into force as a result of the withdrawal of the United States in 2017. The remaining

[12] Regional trade agreements

[13] Free Trade Agreements

[14] Brunei Darussalam, Chile, Singapore, and New Zealand's Trans-Pacific Strategic Economic Partnership (P4) is the first free trade agreement uniting Asia, the Pacific, and the Americas.

11 members decided to revive the TPP without the U.S. participation and an agreement was reached in 2018 to create the Comprehensive and Progressive TPP (CPTPP). As of 2021, the CPTPP has entered into force except in Peru, where the deliberation of ratification has been suspended at the Senate. There are potential future members which are the U.S., South Korea, Taiwan, the U.K., Colombia, Indonesia, Thailand, and China.

Why is this agreement important, especially to one of the countries of analysis, South Korea? First, the CPTPP would offer a lot of economic benefits. It is a comprehensive agreement with high standards that will eliminate most trade tariffs, liberalize hard-to-reach non-tariff barriers, and establish new norms for digital trade, state-owned companies, intellectual property, and other areas. In a shaky global trading system, these principles are extremely vital. It will also reduce tariffs and also non-tariffs barriers with Malaysia, Japan, Vietnam, Mexico and others, the result will be that Korea can become a strengthen leader in the Asian supply chains. (Brookings & Petri, Plummer, 2021).

It should not be forgotten that the business climate in countries are important to encourage foreign direct investment. The strategy for investment promotion should be at the top of the government agenda.

Investments bring along a series of benefits, especially regarding economic development, increasing job opportunities and enhancing the export capacities of recipient countries.

In this research, it has also been demonstrated that the trade of the previous year, affects positively the dependent variable. In this regard, it should be noticed the importance of the relationships of the sellers and buyers. The seller, being the exporter and the buyer, being the importer. Opening new markets is challenging. The recovery of lost markets is almost impossible. Permanence in established markets requires constant quality and continuous compliance.

Exporting is a learning process. A good monitoring and evaluation allow to take advantage of the past experiences. That’s why is crucial for the government to continue supporting exporting companies, through projects that

allow them develop products in compliance with international standards. Product quality plays a key role for maintaining commercial relationships with a buyer. All government should focus on supporting companies so they can be able to have experience and expand their offer to new countries and markets.

4.5 Limitation of the analysis

One of the first limitations for this study was to design an augmented gravity model. There were a lot of difficulties when finding other interesting variables to include, besides the standard model.

There is a lot of literature that includes the Global Value Chain[15] variable in the model. In the case of Latin American countries, most of them are not in the trade in value added data base of the Organization for Economic Cooperation and Development-OECD, so there is no available data in this regard. This very interesting variable could not be included on the research due to the lack of statistical availability.

Another example, the trade cost, a famous independent variable to be included in any gravity model, there were missing values for several countries, surprisingly not only for Latin America, but also for Netherlands or Japan. At the end, I had to exclude the trade cost variable from the research due to the impossibility of working with missing values.

Another possibility of independent variable was to include trade facilitation information, the same thing happened with the data availability, there were a lot of missing values for several of the intended countries to analyze, so again the impossibility of working with missing values was present. At the end, this variable was excluded from the analysis.

Another limitation of this study was that the initial idea was to analyze a 20-year period. This was not possible to achieve. When looking of other options to do an augmented gravity model I found the Foreign Direct Investment information, which was mostly available, but not for 20 years. The

[15] Global value chains (GVCs) relate to international production sharing, a phenomenon characterized by the division of production into activities and tasks performed in different nations.

necessary data could be collected for 10 years from many different sources.

Collecting data for the FDI variable was very challenging, there is available data from international organizations, but some countries do not have all the necessary years available. The solution was to find directly in every country Central Bank, which are the institutions who mostly take care of investment statistics. This data collection took most of the time of the research, but fortunately it was achieved.

4.6 Suggestions for future analysis

In order to deepen the analysis regarding trade and foreign direct investment, further research is suggested about the determinants of foreign direct investment. These determinants can comprise a bundle of criteria including trade openness, the size and growth of the economy, human capital, infrastructure, and economic and political stability. One country can be attractive for investors due to many reasons and research to find out how important trade is, needs to be done.

FDI studies can be justified from different points of view. One is from an economic point of view, which looks at how attracting investment flows makes a big difference in how countries grow. There are also theoretical and philosophical approaches that talk about the benefits of FDI, such as the creation of new ideas, the transfer of knowledge, the attraction of new technology, and the creation of new jobs.

The impact of non-trade barriers[16] on trade is huge, so another possibility of research could be regarding this topic, especially with more years included in the data set, to also have some insights on the importance of tariffication.

The incorporation of more policy variables in gravity models is a topic of great significance. The issue with policy variables, however, is their potential endogeneity. Since endogeneity can add significant bias into the model's results

[16] A nontariff barrier is a method of restricting commerce using trade barriers that are not tariffs. Nontariff barriers include quotas, embargoes, sanctions, and taxes. As part of their political or economic strategy, a number of nations frequently employ nontariff barriers to limit their commerce with other nations.

and so influence policy conclusions, it is crucial that the variables to work with are well decided.

The gravity model allows researchers to analyze other variables that could influence trade. Many other topics such as inequality, environment or gender equality can be analyzed. Of course, everything depends on the data availability. Having all these available options demonstrates the flexibility and adaptation the gravity model has.

Gravity can provide an early signal of changes in trade flows linked with a specific policy shift. However, in order to replicate the influence of the policy change on other development indicators, a separate dataset and model are required, with gravity findings perhaps serving as an input.

It is suggested to perform future research, having the gravity model as a section of the study, combined with other methodologies to find meaningful policy outcomes.

Chapter 5. Conclusions

5.1 Gravity Model conclusions

Applied policy scholars are especially interested in the gravity model, which serves as the usual starting point for many empirical work in international trade.

The gravity equation is widely regarded as the engine of international business when it comes to describing international commerce trends.

It is intuitively appealing, has a strong theoretical foundation, and, with increasing data availability and computational capacity, appears to be a suitable empirical model for shedding light on the drivers of trade.

The gravity model suggests that trade value is favorably related to the economic sizes of the two nations and negatively related to their distance. In other words, bilateral trade volume grows in direct proportion to the economic size of the nations and declines in direct proportion to their geographical distance.

The results that were obtained above discovered that trade value strongly depend on trade partner's economic size (GDP), FDI and the existence of previous year bilateral trade value.

GDP has a considerable positive influence on the value of bilateral trade. As a result, trade flows between two countries are determined by the economic scale of their trading partners. The classical gravity model's theory was confirmed: the larger the economy of a trading partner, the larger the amount of bilateral commerce with that trade partner.

Regarding FDI, further research needs to be done, since the determinants of it can vary a lot, for example financial and fiscal incentives, market size, human capital, production costs, economic stability, among others.

The outcome of this empirical analysis explains that trade between partners is heavily affected by gravity model variables. Countries tend to trade more with closer and large countries.

Between the group of countries that were studied, it can be concluded that definitely the mass of the economy matters a lot, the population doesn't

have a significant effect.

Most importantly, as projected, the coefficient for distance was negative, but not significant. This demonstrates that nowadays distance is not a major problem, there are other factors that influence international trade.

The gravity model is no longer only an intuitive means of summing up the link between commerce, economic scale, and geographic distance.

5.2 Policy Implications Conclusions

In the framework of evidence-based policymaking, it is essential for applied researchers to concentrate on issues where gravity modeling provides a comparative advantage. Utilizing statistics to analyze the sensitivity of trade to specific trade cost factors, including policy, is Gravity's comparative advantage. Insofar as policy data are available, they may be integrated with the gravity model to offer important information on the expected response of trade flows to changes.

Gravity model is an excellent starting point for empirical work in international trade, including applied policy research, but there are other additional models and methodologies that also play a role. Given data restrictions, it is the analyst's responsibility to select the most appropriate tool for answering a question in a robust and relevant manner. If these considerations are taken into account, the gravity model can be a valuable instrument for applied trade policy researchers.

The gravity model is highly adaptable to shifting conditions and policy agendas. It continues to give useful policy insights and is likely to remain the workhorse of the applied international trade literature for the foreseeable future.

There are already a number of structural gravity models that give solid micro-foundations for gravity-like models. Therefore, it is essential that studies based on the gravity model make clear reference to theory and incorporate as many of its insights as feasible. Policy conclusions are only as reliable as the underlying model, and it is becoming increasingly important to employ a theory-consistent gravity model to persuade readers that model results are significant.

In conclusion, the application of gravity models can tell us a lot of insights that will be valuable for implementing and validating different kinds of policy issues.

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Appendix
Bilateral Trade Flows

Paraguay Imports (USD million)

Exporters	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Brazil	3,045	2,672	3,075	3,277	2,625	2,423	2,774	3,112	2,635	2,390
Argentina	1,377	1,370	1,331	1,259	2,086	1,856	2,170	2,659	2,267	1,808
China	3,662	3,184	3,434	3,078	1,701	1,462	2,076	2,149	1,924	1,604
United States of America	737	1,055	945	1,157	1,155	1,430	1,901	1,886	2,347	1,522
Uruguay	184	145	148	127	217	216	277	390	326	272
Germany	224	207	236	275	204	206	240	251	235	216
Korea, Republic of	252	301	255	286	257	195	204	212	176	139
Japan	395	311	278	263	94	106	110	133	109	90
Netherlands	151	263	317	520	79	76	125	122	57	66
Vietnam	14	11	11	27	46	25	40	33	60	58
Thailand	80	74	73	53	32	32	26	45	32	25
Singapore	18	74	46	40	19	16	13	9	31	25
Indonesia	28	16	18	20	12	8	12	17	21	13
Malaysia	41	32	66	21	8	13	8	9	6	7
Philippines	2	2	2	11	0	1	2	1	1	1
Cambodia	1	1	2	3	1	1	1	1	1	1
Lao People's Democratic Republic	0	0	0	0	0	0	0	0	0	0
Brunei Darussalam	0	0	0	0	0	0	0	0	0	0
Myanmar	0	0	0	0	0	0	0	0	0	0

Source: UNComtrade

Paraguay Exports (USD million)

Importers	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Brazil	2,500	2,877	2,850	2,956	2,642	3,013	2,775	2,809	2,527	3,025
Argentina	692	546	688	654	676	856	1,255	2,188	1,742	2,150
United States of America	111	156	256	207	152	143	119	122	163	173
Uruguay	84	108	185	182	259	173	286	145	113	114
Japan	52	29	84	105	79	40	41	31	30	60
Netherlands	92	38	75	430	135	78	82	157	116	56
Germany	575	434	335	105	286	199	185	44	35	35
Thailand	22	12	42	149	26	61	12	27	45	33
Myanmar	0	0	0	0	10	8	14	4	3	32
Korea, Republic of	107	32	52	61	37	60	98	30	85	25
Vietnam	80	60	40	66	72	152	85	97	68	24
Indonesia	31	23	115	29	21	46	15	86	25	21
China	30	42	57	49	30	21	28	26	11	14
Singapore	1	1	1	1	2	4	7	1	1	2
Malaysia	43	60	52	55	42	14	9	0	1	2
Philippines	0	0	1	1	5	0	0	0	0	0
Cambodia	0	0	0	0	0	0	0	0	0	0
Brunei Darussalam	0	0	0	0	0	0	0	0	0	0
Lao People's Democratic Republic	0	0	0	0	0	0	0	0	0	0

Source: UNComtrade

Argentina Imports (USD million)

Exporters	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Brazil	22,181	17,677	19,161	14,341	13,006	13,597	17,869	15,698	10,159	8,685
China	10,573	9,901	11,312	10,776	11,749	10,467	12,310	12,079	9,259	8,656
United States of America	7,810	8,476	8,069	9,107	7,706	6,985	7,535	7,716	6,274	4,414
Paraguay	515	451	531	499	409	711	1,086	2,177	1,647	2,218
Germany	3,646	3,698	3,892	3,533	3,127	3,053	3,228	3,351	2,766	1,988
Thailand	696	861	946	816	814	1,132	1,259	1,329	1,184	999
Vietnam	190	156	200	197	329	350	622	637	658	754
Japan	1,415	1,498	1,521	1,376	1,224	953	1,058	1,082	895	724
Uruguay	606	517	519	464	407	466	483	496	436	375
Korea, Republic of	1,145	1,137	1,240	917	1,071	886	836	643	502	365
Netherlands	435	1,130	1,075	782	452	429	490	532	447	323
Malaysia	434	448	490	402	355	292	317	291	264	271
Indonesia	373	344	381	300	315	276	346	345	292	233
Singapore	169	147	123	191	114	157	117	104	156	120
Philippines	79	88	105	97	93	102	136	131	103	86
Cambodia	14	12	15	7	13	15	16	23	21	21
Myanmar	11	7	8	6	7	11	6	8	5	4
Lao People's Democratic Republic	0	0	0	0	0	0	0	1	1	0
Brunei Darussalam	0	0	0	0	0	0	0	0	0	0

Source: UNComtrade

Argentina Exports (USD million)

Importers	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Brazil	17,317	16,457	15,949	13,883	10,081	9,028	9,298	8,169	7,606	5,084
China	6,033	5,068	5,512	4,460	5,174	4,425	4,319	3,847	6,325	4,595
Vietnam	680	801	1,185	1,550	1,801	2,546	2,272	2,071	2,749	2,746
United States of America	4,301	4,023	4,182	4,082	3,423	4,483	4,460	2,887	2,876	1,529
Indonesia	1,367	1,549	1,469	1,240	1,079	1,243	1,073	1,221	1,579	1,263
Netherlands	2,549	2,204	1,913	1,575	1,206	1,171	1,375	1,524	1,607	1,209
Malaysia	974	994	963	941	839	1,000	867	909	868	757
Uruguay	1,984	1,868	1,753	1,563	1,225	1,130	1,151	918	836	585
Korea, Republic of	973	1,382	1,002	485	583	860	505	176	713	461
Paraguay	1,367	1,368	1,299	1,215	1,054	980	1,130	969	728	424
Germany	2,486	1,970	1,637	1,537	1,342	1,272	1,160	663	660	361
Thailand	518	683	925	620	397	572	526	481	542	180
Japan	843	1,207	1,392	748	572	663	632	206	225	128
Philippines	601	302	419	664	284	358	255	300	282	105
Singapore	62	48	114	140	144	52	38	32	20	32
Cambodia	15	14	16	15	10	17	15	11	14	4
Lao People's Democratic Republic	0	0	0	0	0	0	0	0	0	0
Brunei Darussalam	0	0	3	6	12	7	7	0	8	0
Myanmar	0	1	3	5	15	8	5	1	1	0

Source: UNComtrade

Brazil Imports (USD million)

Exporters	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
China	35,023	36,467	39,632	39,352	30,719	23,364	27,321	34,730	35,270	34,778
United States of America	35,868	34,235	37,962	36,939	26,761	24,074	25,086	29,350	30,413	28,207
Germany	15,777	14,719	15,739	14,325	10,380	9,131	9,227	10,557	10,280	9,369
Argentina	17,490	16,998	16,977	14,574	10,285	9,084	9,435	11,051	10,552	7,897
Korea, Republic of	10,734	9,629	9,991	8,945	5,421	5,449	5,240	5,381	4,706	4,497
Japan	8,235	8,043	7,363	6,156	4,877	3,566	3,763	4,356	4,094	4,191
Paraguay	2,467	2,827	2,902	2,934	884	1,223	1,133	1,157	1,303	2,972
Vietnam	694	863	1,201	1,660	1,789	1,601	2,186	2,321	2,523	2,348
Thailand	2,531	2,675	2,511	2,324	1,673	1,344	1,568	1,650	1,535	1,478
Netherlands	2,357	3,221	2,451	3,292	2,469	1,786	1,900	1,691	2,138	1,385
Malaysia	2,364	2,154	2,286	1,958	1,537	1,185	1,434	1,531	1,269	1,170
Indonesia	2,008	1,823	1,696	1,894	1,375	1,225	1,351	1,331	1,293	1,140
Uruguay	1,818	1,881	1,820	1,989	1,217	1,284	1,324	1,160	1,114	1,112
Singapore	853	891	1,123	826	632	426	646	646	633	824
Philippines	308	320	341	309	254	195	248	271	267	266
Cambodia	19	21	41	34	40	24	31	41	50	37
Myanmar	1	1	1	2	2	2	4	7	14	12
Lao People's Democratic Republic	3	2	1	1	0	1	1	2	2	1
Brunei Darussalam	0	0	0	1	1	0	0	0	0	0

Source: UNComtrade

Brazil Exports (USD million)

Importers	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
China	44,305	41,226	46,023	40,612	35,608	35,134	47,488	64,206	62,872	67,788
United States of America	25,915	26,795	24,857	27,134	24,216	23,275	27,046	29,133	29,702	21,616
Argentina	22,701	17,987	19,613	14,277	12,800	13,418	17,619	14,951	9,724	8,489
Netherlands	12,423	13,386	13,350	10,984	10,044	10,323	9,252	13,068	10,086	6,705
Japan	9,472	7,955	7,964	6,717	4,845	4,604	5,263	4,334	5,409	4,127
Germany	9,038	7,275	6,551	6,627	5,179	4,861	4,911	5,215	4,716	4,124
Korea, Republic of	4,693	4,491	4,719	3,831	3,122	2,881	3,077	3,437	3,426	3,762
Singapore	1,744	2,268	1,905	2,481	2,045	2,828	2,735	3,573	2,850	3,671
Malaysia	1,619	1,573	1,372	1,548	1,830	1,842	2,490	2,010	2,793	3,203
Vietnam	794	817	1,192	1,592	2,124	1,399	1,733	1,932	2,038	2,264
Paraguay	2,967	2,617	2,997	3,194	2,473	2,221	2,646	2,945	2,455	2,153
Indonesia	1,718	2,002	1,999	2,246	2,181	2,204	1,772	1,494	1,715	2,147
Thailand	1,818	2,065	1,654	1,865	1,749	1,715	1,789	1,894	1,663	2,000
Uruguay	2,174	2,184	2,071	2,945	2,727	2,744	2,348	3,009	2,479	1,762
Philippines	576	777	880	698	729	436	443	662	595	835
Myanmar	25	17	13	35	40	185	145	41	55	40
Cambodia	6	4	3	14	4	6	6	9	19	22
Lao People's Democratic Republic	0.273	0.633	0.379	0.104	0.206	0.695	1.563	2.781	1.62	0.969
Brunei Darussalam	0.678	1.092	2.153	0.815	1.346	0.592	0.744	0.909	1.926	0.748

Source: UNComtrade

Uruguay Imports (USD million)

Exporters	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Brazil	2,082	2,097	1,836	1,833	1,697	1,471	1,649	1,654	1,652	1,566
China	1,439	1,662	1,965	1,989	1,337	1,142	1,380	1,376	1,310	1,231
Argentina	2,004	1,741	1,656	1,385	1,317	1,123	1,135	1,175	1,027	1,028
United States of America	1,109	1,047	1,012	1,011	796	629	951	804	878	969
Germany	258	248	294	437	264	214	186	201	188	199
Paraguay	83	79	126	132	118	100	107	148	109	107
Netherlands	125	106	60	47	61	73	82	108	78	63
Korea, Republic of	204	177	220	215	187	96	94	94	105	57
Vietnam	28	26	29	39	22	36	48	28	32	49
Japan	96	102	94	79	59	46	50	46	50	34
Indonesia	49	41	28	56	32	25	26	31	29	30
Thailand	37	31	38	34	23	18	18	18	13	16
Malaysia	41	95	47	31	21	12	29	13	12	14
Philippines	4	6	9	11	8	9	13	18	10	8
Singapore	14	8	71	8	7	5	14	9	11	7
Cambodia	2	3	4	3	1	0	1	2	2	2
Myanmar	0.13	0.2	0.2	0.1	0.14	0.12	0.21	0.15	0.34	0.84
Lao People's Democratic Republic	0.03	0.03	0.02	0.03	0	0	0	0	0	0.01
Brunei Darussalam	0	0.01	0	0	0	0.01	0	0	0	0

Source: UNComtrade

Uruguay Exports (USD million)

Importers	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
China	526	796	1,291	1,220	1,442	1,095	1,781	1,700	2,147	1,015
Brazil	1,625	1,688	1,712	1,612	1,184	1,242	1,305	1,197	1,116	670
United States of America	262	331	356	421	536	443	463	466	459	429
Argentina	588	504	493	440	392	377	422	423	377	231
Netherlands	148	128	204	185	211	226	250	211	223	138
Paraguay	192	146	153	135	119	123	121	142	121	86
Germany	302	256	315	296	274	245	202	164	127	67
Thailand	45	44	34	34	48	43	30	42	48	24
Vietnam	35	44	49	82	56	42	35	42	33	21
Japan	10	10	12	13	13	10	9	11	28	21
Korea, Republic of	28	21	24	26	21	31	17	16	9	14
Philippines	22	18	20	21	17	11	14	20	19	10
Indonesia	13	9	11	21	8	8	7	6	15	5
Singapore	20	19	11	10	17	5	11	9	16	4
Malaysia	3	8	3	15	20	13	9	3	3	4
Cambodia	0	1	2	1	0	0	0	1	2	2
Myanmar	0.29	0.47	0.37	0.46	0.81	0.99	0.16	0.48	0.81	0.21
Brunei Darussalam	0.61	0.42	0.25	0.18	0.09	0.1	0.21	0.08	0.13	0.12
Lao People's Democratic Republic	0	0	0	0.07	0	0	0	0	0	0

Source: UNComtrade

South Korea Imports (USD million)

Exporters	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
China	86,431	80,782	83,037	90,072	90,237	86,962	97,857	106,479	107,220	108,870
United States of America	44,815	43,652	41,764	45,532	44,215	43,396	50,901	59,086	62,103	57,768
Japan	68,320	64,363	60,016	53,776	45,854	47,454	55,134	54,605	47,575	46,025
Germany	16,962	17,645	19,333	21,286	20,952	18,917	19,747	20,852	19,939	20,671
Netherlands	4,425	3,994	4,213	4,580	4,343	4,228	6,142	6,892	4,196	6,230
Viet Nam	5,084	5,719	7,170	7,989	9,803	12,495	16,176	19,632	21,071	20,579
Malaysia	10,468	9,796	11,097	11,101	8,615	7,505	8,715	10,206	9,281	8,894
Singapore	8,967	9,676	10,366	11,307	7,944	6,806	8,904	7,978	6,659	8,445
Indonesia	17,216	15,676	13,188	12,271	8,853	8,281	9,571	11,160	8,816	7,594
Thailand	5,413	5,353	5,230	5,345	4,854	4,561	5,202	5,581	5,318	5,196
Philippines	3,571	3,284	3,705	3,333	3,251	3,228	3,703	3,569	3,656	3,086
Myanmar	299	351	488	580	506	459	463	536	595	465
Brunei Darussalam	2,010	1,983	1,935	1,292	967	711	795	610	408	215
Lao People's Democratic Republic	4	11	12	18	28	23	27	30	39	44
Cambodia	87	126	136	194	217	239	261	314	336	318
Brazil	6,343	6,085	5,572	4,906	4,059	3,443	3,701	3,904	4,297	4,237
Uruguay	75	98	121	73	84	81	115	132	134	116
Paraguay	52	106	75	73	20	104	99	46	80	84
Argentina	1,048	1,428	1,195	501	699	833	607	406	864	894

Source: UNComtrade

South Korea Exports (USD million)

Importers	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
China	134,185	134,322	145,837	145,328	137,140	124,433	142,115	162,158	136,213	132,555
United States of America	56,421	58,807	62,330	70,598	70,130	66,758	68,855	73,060	73,627	74,440
Japan	39,679	38,796	34,694	32,248	25,596	24,357	26,827	30,574	28,412	25,093
Germany	9,501	7,510	7,908	7,573	6,222	6,446	8,484	9,372	8,688	9,576
Netherlands	4,627	5,059	5,516	5,303	4,024	3,819	4,649	4,776	4,243	4,143
Viet Nam	13,465	15,946	21,088	22,333	27,773	32,651	47,749	48,629	48,178	48,543
Singapore	20,839	22,888	22,280	23,906	15,022	12,459	11,649	11,850	12,769	9,826
Malaysia	6,275	7,723	8,590	7,588	7,739	7,532	8,046	8,983	8,846	9,077
Philippines	7,339	8,211	8,783	10,047	8,332	7,277	10,595	12,061	8,363	7,127
Thailand	8,459	8,212	8,074	7,600	6,363	6,482	7,469	8,507	7,805	6,853
Indonesia	13,564	13,955	11,574	11,417	7,875	6,603	8,411	8,868	7,650	6,317
Myanmar	667	1,331	706	801	660	761	573	534	632	610
Cambodia	451	593	615	655	653	573	604	661	697	567
Brunei Darussalam	588	112	102	290	272	67	64	62	74	82
Lao People's Democratic Republic	154	165	187	156	170	126	92	84	75	50
Uruguay	217	184	387	255	193	100	115	122	121	75
Brazil	11,821	10,286	9,689	8,922	5,495	4,457	5,505	4,884	4,809	3,945
Argentina	1,081	973	1,075	754	1,047	796	837	536	342	336
Paraguay	200	160	203	224	225	124	146	151	111	87

Source: UNComtrade

Japan Imports (USD million)

Exporters	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
China	183,882	188,500	180,978	181,294	160,501	156,849	164,587	173,815	169,236	163,761
United States of America	76,267	78,216	71,959	73,045	68,293	69,352	73,972	83,668	81,259	71,703
Germany	23,311	24,714	23,830	24,122	20,276	22,064	23,425	25,989	24,936	21,221
Netherlands	5,717	4,914	4,509	4,295	2,706	2,366	2,396	3,193	3,174	3,110
Korea, Republic of	39,811	40,532	35,822	33,385	26,807	25,067	28,111	32,149	29,629	26,591
Thailand	24,529	23,636	22,039	21,740	20,421	20,177	22,738	25,087	25,363	23,765
Viet Nam	11,552	15,084	14,233	15,417	15,125	16,269	18,538	21,145	22,477	22,042
Malaysia	30,463	32,856	29,745	29,181	21,557	17,367	19,276	18,937	17,653	15,931
Indonesia	34,109	32,293	28,882	25,673	19,813	18,249	19,889	21,604	18,148	15,407
Philippines	8,943	9,344	9,246	10,176	8,905	9,043	9,773	10,435	10,570	9,309
Singapore	8,677	8,768	7,456	7,884	7,912	7,479	8,528	9,745	7,804	8,550
Brunei Darussalam	5,705	5,991	4,742	4,012	2,499	1,753	1,718	2,272	2,479	1,745
Cambodia	308	404	583	772	968	1,207	1,262	1,608	1,730	1,620
Myanmar	590	672	759	861	864	937	1,066	1,281	1,414	1,305
Lao People's Democratic Republic	97	124	107	115	97	115	149	156	159	129
Paraguay	64	36	79	133	92	42	59	58	31	70
Uruguay	99	98	77	71	61	58	49	12	28	36
Brazil	12,673	11,932	11,136	9,686	7,466	6,751	7,170	6,894	7,975	7,505
Argentina	1,082	1,250	1,848	912	787	755	726	672	577	517

Source: UNComtrade

Japan Exports (USD million)

Importers	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
China	162,035	144,185	129,401	126,361	109,324	113,946	132,760	144,046	134,720	141,322
United States of America	127,675	142,085	134,540	130,773	126,388	130,718	135,071	140,656	140,469	118,724
Korea, Republic of	66,174	61,528	56,513	51,520	44,052	46,282	53,277	52,479	46,283	44,658
Germany	23,503	20,796	18,959	19,055	16,237	17,671	18,943	20,891	20,233	17,593
Netherlands	17,946	16,156	13,908	13,049	11,598	11,827	12,438	12,716	11,916	10,906
Thailand	37,532	43,708	35,946	31,349	27,990	27,426	29,427	32,273	30,195	25,514
Singapore	27,253	23,294	20,980	21,013	19,860	19,862	22,652	23,410	20,174	17,695
Viet Nam	9,592	10,740	10,550	11,830	12,543	13,004	15,051	16,434	16,489	17,110
Malaysia	18,790	17,699	15,240	14,133	12,004	12,152	12,761	13,941	13,296	12,588
Indonesia	17,737	20,279	17,032	14,735	11,539	11,339	13,394	15,792	13,986	9,200
Philippines	11,229	11,849	9,681	9,878	9,490	10,356	11,127	11,273	10,658	8,812
Cambodia	206	234	210	256	302	307	358	422	562	485
Lao People's Democratic Republic	78	138	121	139	105	116	116	133	96	147
Myanmar	503	1,257	1,057	1,189	1,065	1,037	881	693	652	604
Brunei Darussalam	143	188	152	107	120	84	85	99	133	103
Paraguay	119	70	63	67	70	78	86	105	91	68
Uruguay	101	103	116	85	78	56	63	64	53	41
Argentina	977	1,135	1,112	1,057	799	632	737	739	664	541
Brazil	6,207	5,926	5,660	4,725	3,931	2,795	3,392	4,000	3,764	2,956

Source: UNComtrade

China Imports (USD million)

Exporters	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Japan	194,568	177,832	162,246	162,921	143,093	145,771	165,495	180,402	171,523	174,868
Korea, Republic of	162,717	168,728	183,073	190,109	174,564	159,169	177,524	204,566	173,553	172,756
United States of America	123,124	133,766	153,395	160,065	150,544	135,047	154,840	156,004	123,236	135,997
Netherlands	8,661	8,704	9,825	9,340	8,808	9,753	11,228	12,314	11,196	12,787
Germany	92,726	91,933	94,157	105,013	87,689	86,119	96,933	106,257	105,037	105,261
Viet Nam	11,117	16,229	16,892	19,906	25,128	37,217	50,374	64,087	64,078	78,475
Malaysia	62,137	58,305	60,153	55,652	53,258	49,118	53,961	63,322	71,630	74,733
Thailand	39,040	38,551	38,523	38,332	37,221	38,686	41,806	44,919	46,135	48,098
Indonesia	31,337	31,936	31,424	24,485	19,815	21,345	28,517	34,155	33,993	37,369
Singapore	28,140	28,530	30,065	30,829	27,558	25,939	34,134	33,638	35,230	31,551
Philippines	17,992	19,643	18,182	20,984	19,020	17,369	19,149	20,596	20,170	19,307
Lao People's Democratic Republic	828	788	1,010	1,778	1,316	1,347	1,567	2,030	2,160	2,063
Cambodia	184	215	364	483	666	830	1,005	1,377	1,444	1,498
Myanmar	1,680	1,298	2,857	15,601	5,301	4,153	4,529	4,719	6,382	6,342
Brunei Darussalam	567	373	90	190	97	226	352	248	451	1,436
Paraguay	44	48	61	56	42	22	33	40	17	14
Brazil	52,387	52,281	54,299	51,653	44,339	45,603	58,477	77,142	79,204	84,084
Argentina	6,257	6,561	6,086	5,247	5,714	5,122	4,733	3,519	7,392	6,805
Uruguay	1,413	1,911	2,466	2,629	2,411	1,949	2,650	2,559	2,968	2,363

Source: UNComtrade

China Exports (USD million)

Importers	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
United States of America	325,011	352,438	369,064	397,099	410,805	388,145	431,664	479,702	418,584	452,577
Japan	148,269	151,627	150,133	149,391	135,897	129,450	137,369	147,235	143,224	142,642
Netherlands	59,500	58,899	60,315	64,929	59,633	57,747	67,325	73,124	73,945	79,010
Korea, Republic of	82,920	87,674	91,165	100,333	101,475	94,660	102,834	109,029	110,985	112,504
Germany	76,400	69,213	67,343	72,703	69,217	65,769	71,224	77,909	79,706	86,824
Singapore	35,570	40,750	45,832	48,911	53,139	45,803	45,668	49,818	54,964	57,540
Malaysia	27,886	36,526	45,931	46,353	44,192	38,542	41,999	45,848	52,482	56,428
Thailand	25,695	31,197	32,718	34,289	38,311	37,653	38,781	42,974	45,620	50,526
Philippines	14,255	16,732	19,868	23,474	26,693	30,114	32,117	35,111	40,759	41,839
Indonesia	29,221	34,285	36,930	39,060	34,375	32,376	34,806	43,246	45,685	41,004
Viet Nam	29,092	34,213	48,586	63,730	66,381	61,585	72,117	84,016	98,004	113,814
Myanmar	4,821	5,674	7,339	9,368	9,430	8,255	9,025	10,568	12,331	12,551
Cambodia	2,315	2,708	3,410	3,275	3,770	3,964	4,795	6,023	8,001	8,057
Lao People's Democratic Republic	476	937	1,723	1,839	1,212	1,006	1,420	1,456	1,788	1,495
Brunei Darussalam	744	1,252	1,704	1,747	1,412	568	653	1,598	650	466
Paraguay	1,248	1,336	1,357	1,396	1,273	1,163	1,561	1,671	1,431	1,217
Argentina	8,503	7,869	8,750	7,680	8,890	7,233	9,068	8,418	6,883	7,087
Uruguay	2,002	2,413	2,324	2,458	1,959	1,787	2,160	2,071	1,950	1,704
Brazil	31,837	33,414	35,895	34,890	27,429	22,064	29,078	33,732	35,477	34,956

Source: UNComtrade

Germany Imports (USD million)

Exporters	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
China	112,601	102,393	100,313	107,580	101,947	104,015	115,184	125,101	123,166	134,141
Netherlands	102,778	99,543	106,236	107,890	88,068	86,331	94,549	104,530	97,396	88,393
United States of America	69,261	67,205	66,571	67,527	66,428	64,142	69,868	76,179	79,840	77,286
Japan	34,885	29,962	27,492	26,501	22,378	24,267	25,897	28,017	26,756	24,451
Korea, Republic of	13,546	10,970	10,754	10,662	8,525	8,566	12,829	14,317	13,761	12,886
Viet Nam	5,643	6,650	7,541	8,092	8,924	9,745	10,888	11,552	10,884	11,787
Malaysia	8,812	7,042	7,485	8,241	7,780	8,453	9,791	10,568	9,741	9,571
Thailand	5,835	5,412	5,794	6,279	5,606	5,947	6,761	7,222	6,698	6,423
Singapore	6,764	6,550	6,460	6,692	6,508	5,930	7,370	7,781	6,444	5,513
Indonesia	6,005	5,211	4,833	4,939	4,376	4,259	4,447	4,496	3,980	4,046
Philippines	2,835	2,985	3,178	3,672	3,338	3,153	4,069	4,341	4,477	3,839
Cambodia	730	880	1,145	1,296	1,369	1,504	1,750	1,986	1,910	1,773
Myanmar	85	56	73		219	354	630	1,012	1,168	1,273
Lao People's Democratic Republic	88	80	98	7	83	83	90	109	121	120
Brunei Darussalam	3	5	2	11,937	1	1	1	2	1	2
Brazil	15,527	13,506	11,724	318	9,332	8,815	8,773	8,848	7,876	6,956
Uruguay	616	491	504	197	294	395	316	348	346	231
Paraguay	312	380	313	2,153	166	102	112	66	53	45
Argentina	3,171	2,549	2,236		1,695	1,661	1,439	1,545	1,211	1,075

Source: UNComtrade

Germany Exports (USD million)

Importers	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
United States of America	103,181	112,269	119,126	127,776	126,090	118,236	126,254	133,897	132,858	118,373
China	90,643	86,103	89,316	99,201	79,029	84,116	97,506	109,780	107,451	109,741
Netherlands	93,448	87,343	90,492	93,046	81,552	82,838	90,021	99,550	92,774	89,063
Korea, Republic of	16,348	17,277	19,263	20,826	19,818	19,060	19,741	20,416	19,316	20,278
Japan	21,397	22,237	22,872	22,779	18,826	20,253	22,092	24,118	23,137	19,855
Singapore	9,032	8,483	8,482	8,424	7,322	7,427	7,827	9,423	8,182	6,993
Malaysia	6,076	6,396	6,393	6,404	5,322	5,260	5,679	6,117	6,235	5,296
Thailand	4,506	5,454	5,266	5,221	4,471	4,872	5,297	5,982	5,618	4,783
Viet Nam	2,526	2,541	2,463	2,633	2,528	2,880	3,952	4,813	4,812	3,394
Indonesia	2,982	4,140	4,164	3,937	2,943	2,678	3,046	3,389	3,097	2,396
Philippines	1,742	1,996	2,317	2,708	2,376	2,268	2,300	3,032	2,791	2,190
Cambodia	47	58	76	97	133	163	282	155	158	169
Myanmar	60	136	168	175	163	158	133	144	169	160
Brunei Darussalam	482	66	74	178	167	74	58	130	76	72
Lao People's Democratic Republic	39	154	53	115	45	35	34	35	24	57
Brazil	15,628	15,152	15,134	13,946	10,938	9,441	9,587	11,166	11,367	9,658
Uruguay	398	524	478	560	496	375	282	269	267	280
Paraguay	165	163	165	169	160	153	194	208	192	165
Argentina	3,749	3,512	3,770	3,267	2,938	2,848	3,342	3,449	2,681	2,115

Source: UNComtrade

Netherlands Imports (USD million)

Exporters	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Germany	84,792	79,489	84,312	83,355	72,793	73,922	83,979	91,644	87,905	85,522
China	42,957	41,013	42,219	47,037	35,955	35,980	40,791	46,277	48,169	51,228
United States of America	32,782	33,945	35,350	36,222	33,340	33,469	34,912	39,915	41,773	39,139
Japan	14,053	12,766	11,191	11,059	7,902	7,715	8,729	9,254	9,071	8,446
Korea, Republic of	2,730	3,147	3,799	4,225	2,941	3,291	3,790	4,136	4,094	4,720
Thailand	3,689	3,130	3,330	3,873	2,553	2,793	3,265	3,875	3,952	3,644
Indonesia	3,192	3,620	3,545	3,325	2,775	2,633	3,434	3,364	3,058	2,859
Malaysia	7,760	7,384	7,920	8,585	7,399	7,070	7,555	8,015	8,069	8,286
Philippines	1,380	1,287	1,333	1,572	1,196	1,302	1,614	1,746	1,519	1,531
Cambodia	76	87	113	158	185	248	347	426	476	423
Singapore	3,687	4,477	3,543	3,555	2,188	2,878	4,132	4,585	5,019	4,730
Myanmar	9	14	7	26	38	76	126	173	247	244
Viet Nam	1,585	2,060	2,512	2,676	4,693	5,611	5,991	5,893	6,404	6,942
Lao People's Democratic Republic	15	39	38	41	15	13	8	10	17	19
Brunei Darussalam	1	4	2	1	0	1	1	1	1	12
Brazil	7,809	7,254	7,717	6,165	4,801	4,665	4,574	4,348	4,319	4,492
Paraguay	369	273	270	316	39	44	26	75	32	35
Argentina	2,231	2,403	1,744	1,554	1,263	1,172	1,257	1,480	1,421	1,547
Uruguay	161	171	254	367	526	566	566	551	535	408

Source: UNComtrade

Netherlands Exports (USD million)

Importers	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Germany	137,941	136,462	141,981	138,757	109,258	107,319	120,674	133,412	128,002	121,984
United States of America	27,353	26,087	22,427	25,230	20,001	19,528	22,343	27,233	29,804	27,675
China	9,316	9,833	10,241	10,521	9,458	10,698	12,786	13,858	14,317	16,126
Korea, Republic of	5,080	4,333	4,665	4,980	4,605	4,004	6,729	7,134	4,899	7,427
Japan	4,750	4,552	4,221	4,410	3,834	3,679	4,194	5,216	5,071	5,455
Singapore	4,041	5,363	4,982	4,644	4,411	5,362	6,049	6,225	4,066	3,075
Malaysia	943	1,142	1,109	1,234	1,237	1,290	1,581	1,306	1,249	1,197
Thailand	1,230	1,344	1,218	1,239	1,184	1,197	1,244	1,306	1,200	1,088
Viet Nam	726	737	752	719	886	908	963	1,257	1,144	1,085
Indonesia	757	808	1,063	907	788	1,045	981	942	912	790
Philippines	418	426	493	568	481	539	556	618	622	602
Myanmar	6	7	14	25	21	29	34	46	51	67
Cambodia	14	15	15	23	31	24	33	42	31	35
Brunei Darussalam	20	22	39	24	34	30	52	34	48	30
Lao People's Democratic	2	2	6	3	3	4	5	4	4	7
East Asia	8,156	9,866	9,691	9,386	9,074	10,429	11,497	11,780	9,326	7,976
Brazil	3,174	3,963	2,912	3,742	2,991	3,633	2,786	2,930	3,056	2,490
Argentina	692	937	1,353	1,131	753	789	892	1,031	832	645
Paraguay	62	36	69	79	76	67	71	72	71	137
Uruguay	222	116	101	122	96	100	139	140	114	109

Source: UNComtrade

United States Imports (USD million)

Exporters	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
China	417,340	444,386	459,108	486,296	504,042	481,370	525,749	562,700	470,951	456,449
Japan	132,559	150,447	142,137	137,504	135,106	135,071	139,725	145,685	146,922	122,471
Germany	100,676	111,298	116,406	125,532	127,254	116,288	119,968	128,335	129,912	117,361
Korea, Republic of	58,606	60,998	64,611	71,745	74,065	71,888	73,421	76,184	79,939	78,359
Netherlands	24,950	22,898	19,925	21,581	17,657	16,677	18,463	25,287	30,753	28,141
Singapore	19,368	20,463	18,102	16,652	18,527	18,063	19,620	26,791	26,690	31,126
Indonesia	19,991	18,845	19,770	20,314	20,659	20,127	21,148	21,817	21,144	21,275
Philippines	9,481	9,910	9,605	10,495	10,613	10,374	11,958	12,932	13,074	11,497
Cambodia	2,807	2,800	2,871	2,951	3,147	2,916	3,172	3,952	5,552	6,868
Thailand	25,751	26,992	27,071	28,027	29,618	30,464	32,214	33,017	34,754	39,232
Myanmar	0	0	31	96	150	253	379	511	853	1,074
Malaysia	26,490	26,653	27,995	31,113	34,721	37,309	38,099	40,127	41,440	45,298
Lao People's Democratic Republic	60	26	32	35	48	57	99	146	153	107
Viet Nam	18,457	21,371	25,904	32,011	39,688	43,748	48,422	51,261	69,159	83,184
Brunei Darussalam	26	89	18	33	20	14	23	102	44	90
Brazil	32,839	33,255	28,658	31,607	28,524	27,047	30,563	32,395	32,164	24,508
Argentina	4,735	4,576	4,870	4,454	4,187	4,911	5,001	5,033	5,134	4,411
Uruguay	304	372	442	477	629	558	608	532	542	586
Paraguay	119	205	291	210	174	159	134	138	173	161

Source: UNComtrade

United States Exports (USD million)

Importers	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
China	104,121	110,517	121,721	123,676	115,873	115,595	129,997	120,289	106,448	124,485
Japan	65,792	69,972	65,214	66,826	62,388	63,247	67,603	75,149	74,497	63,756
Korea, Republic of	43,461	42,283	41,686	44,471	43,484	42,262	48,356	56,310	56,504	50,965
Germany	48,939	48,372	46,863	49,028	49,979	49,569	53,965	57,758	60,069	57,433
Netherlands	43,413	40,617	42,505	43,067	40,212	39,645	41,500	48,560	51,000	45,305
Singapore	31,262	30,499	30,622	30,205	28,481	26,816	29,649	32,881	31,194	26,929
Malaysia	14,263	12,815	13,004	13,068	12,278	11,774	12,872	12,952	13,188	12,296
Thailand	10,930	10,888	11,797	11,810	11,229	10,501	11,033	12,521	13,303	11,277
Viet Nam	4,315	4,623	5,036	5,734	7,101	10,098	8,134	9,676	10,822	9,912
Indonesia	7,421	7,998	9,097	8,284	7,118	6,024	6,864	8,171	7,731	7,396
Philippines	7,728	8,087	8,404	8,453	7,903	8,194	8,451	8,716	8,641	7,739
Cambodia	187	226	241	328	391	361	400	446	514	344
Myanmar	49	66	146	93	227	196	211	261	347	339
Brunei Darussalam	184	158	558	549	133	614	121	266	288	120
Lao People's Democratic Republic	26	33	24	28	25	31	26	16	17	25
Brazil	43,019	43,771	44,093	42,428	31,641	30,193	37,331	39,409	42,866	34,595
Argentina	9,892	10,258	10,348	10,826	9,362	8,527	9,604	9,908	8,145	5,915
Paraguay	1,972	1,741	1,933	2,116	1,492	1,970	2,713	2,256	2,108	1,267
Uruguay	1,258	1,359	1,755	1,606	1,295	1,114	1,588	1,384	1,616	1,217

Source: UNComtrade

East Asian Imports (USD million)

Exporters	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
China	155,942	177,579	198,362	212,493	218,284	224,861	253,956	292,244	305,036	298,809
Japan	128,293	136,534	118,203	110,361	100,005	104,756	113,112	123,511	116,033	101,661
Korea, Republic of	71,034	75,951	82,191	80,086	74,992	78,750	97,453	102,119	96,975	96,012
United States of America	93,643	92,175	92,237	90,543	85,252	80,847	92,536	105,847	111,266	97,401
Germany	30,217	32,340	34,278	33,430	30,000	28,616	31,009	34,149	33,431	28,400
Netherlands	11,145	12,576	10,609	10,202	9,375	8,489	8,763	9,767	7,774	6,516
Thailand	48,622	48,115	48,966	49,427	47,766	50,716	55,735	63,582	58,683	51,295
Singapore	72,760	74,460	72,664	75,791	61,857	52,288	61,777	70,416	62,511	50,993
Indonesia	43,983	44,455	42,657	41,593	35,897	35,958	43,306	46,698	46,953	41,736
Viet Nam	11,567	15,540	17,393	18,099	18,679	19,411	22,175	24,447	25,294	23,895
Philippines	12,155	12,119	10,989	10,596	10,191	10,938	13,169	15,870	15,045	14,457
Lao People's Democratic Republic	1,593	1,703	2,049	2,288	2,095	2,280	2,639	3,117	3,094	3,699
Myanmar	3,765	4,140	4,633	4,520	4,085	2,903	3,119	3,879	4,310	3,700
Brunei Darussalam	1,591	1,715	2,184	1,913	1,175	1,047	1,697	1,930	1,808	2,184
Cambodia	904	1,515	1,267	1,713	1,967	3,203	2,466	2,122	5,607	5,178
Malaysia	69,802	73,090	75,502	72,137	62,396	60,548	71,158	78,434	76,801	71,896
Paraguay	154	138	211	415	124	195	116	154	122	129
Uruguay	212	225	242	287	284	253	189	153	187	163
Brazil	9,081	9,499	9,183	10,769	10,431	10,011	10,344	10,554	11,067	13,425
Argentina	4,581	4,865	5,881	5,914	5,500	6,064	5,826	6,101	7,346	7,329

Source: UNComtrade

East Asian Exports (USD million)

Importers	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
United States of America	105,686	108,961	114,808	122,847	126,803	132,068	142,666	162,553	184,972	212,173
Japan	128,172	127,982	123,317	120,406	101,866	95,848	104,992	114,452	110,012	102,218
China	142,854	142,570	153,923	153,743	141,291	141,874	185,806	199,990	202,227	218,665
Korea, Republic of	54,196	55,482	53,313	51,749	45,497	45,717	54,846	60,427	59,333	58,173
Netherlands	27,646	26,106	26,599	28,946	26,744	27,752	32,969	34,724	32,730	32,912
Germany	25,239	24,354	25,788	26,754	26,740	27,593	30,376	32,592	30,140	28,585
Thailand	39,883	43,767	45,325	44,709	41,400	38,903	46,454	51,303	49,781	44,735
Viet Nam	24,709	24,439	25,831	28,052	29,708	31,130	35,963	40,388	41,671	38,313
Indonesia	66,070	68,833	68,939	62,091	47,278	43,929	48,551	55,339	48,266	39,654
Singapore	66,192	66,937	67,747	68,831	56,911	54,360	60,692	65,378	63,314	65,565
Philippines	20,264	20,255	20,358	22,721	21,734	23,733	27,596	30,379	30,625	26,389
Cambodia	9,643	9,440	14,333	11,618	8,930	8,332	11,840	17,137	14,981	12,806
Myanmar	5,075	5,711	7,568	8,375	8,385	8,470	9,347	9,665	9,828	8,904
Lao People's Democratic Republic	3,135	4,112	4,238	4,581	4,805	4,524	4,518	4,758	4,613	3,940
Malaysia	78,869	81,403	82,753	78,452	60,782	56,707	65,102	72,780	66,914	56,021
Brunei Darussalam	2,361	2,224	2,292	2,050	1,700	1,485	1,473	1,628	1,973	1,726
Paraguay	108	106	118	108	107	85	114	111	125	106
Uruguay	262	277	244	250	196	168	206	183	179	159
Brazil	7,285	7,067	9,005	7,685	6,204	5,643	6,799	6,931	7,073	6,314
Argentina	1,728	1,949	2,015	1,701	1,665	2,015	2,309	2,230	2,115	1,961

Source: UNComtrade

Distance between countries

PARAGUAY	ARGENTINA	1051.13
PARAGUAY	BRAZIL	1134.649
PARAGUAY	BRUNEI	17639.75
PARAGUAY	CHINA	18311.35
PARAGUAY	GERMANY	10607.28
PARAGUAY	INDONESIA	16155.02
PARAGUAY	JAPAN	18005.33
PARAGUAY	CAMBODIA	17652.21
PARAGUAY	KOREA, REPUBLIC	18600.7
PARAGUAY	LAOS	17844.04
PARAGUAY	MYANMAR	17162.89
PARAGUAY	MALAYSIA	16726.44
PARAGUAY	NETHERLANDS	10548.14
PARAGUAY	PHILIPINES	18841.8
PARAGUAY	SINGAPORE	16709.1
PARAGUAY	THAILAND	17414.88
PARAGUAY	URUGUAY	1085.501
PARAGUAY	UNITED STATES	7537.521
PARAGUAY	VIETNAM	18285.31

ARGENTINA	BRAZIL	1691.067
ARGENTINA	BRUNEI	16656.76
ARGENTINA	CHINA	19297.47
ARGENTINA	GERMANY	11512.14
ARGENTINA	INDONESIA	15235.78
ARGENTINA	JAPAN	18372.04
ARGENTINA	CAMBODIA	16965
ARGENTINA	KOREA, REPUBLIC	19447.35
ARGENTINA	LAOS	17399.46
ARGENTINA	MYANMAR	16823.83
ARGENTINA	MALAYSIA	15970.66
ARGENTINA	NETHERLANDS	11466.75
ARGENTINA	PHILIPINES	17801.66
ARGENTINA	PARAGUAY	1051.13
ARGENTINA	SINGAPORE	15891.11
ARGENTINA	THAILAND	16890.18
ARGENTINA	URUGUAY	215.0746
ARGENTINA	UNITED STATES	8542.694
ARGENTINA	VIETNAM	17877.15

URUGUAY	ARGENTINA	215.0746
URUGUAY	BRAZIL	1567.878
URUGUAY	BRUNEI	16574.19
URUGUAY	CHINA	19175.59
URUGUAY	GERMANY	11412.01
URUGUAY	INDONESIA	15125.91
URUGUAY	JAPAN	18587.08
URUGUAY	CAMBODIA	16808.96
URUGUAY	KOREA, REPUBLIC	19629.5
URUGUAY	LAOS	17214.69
URUGUAY	MYANMAR	16626
URUGUAY	MALAYSIA	15822.13
URUGUAY	NETHERLANDS	11371.8
URUGUAY	PHILIPINES	17756.3
URUGUAY	PARAGUAY	1085.501
URUGUAY	SINGAPORE	15755.33
URUGUAY	THAILAND	16710.97
URUGUAY	UNITED STATES	8617.354
URUGUAY	VIETNAM	17693.2

FROM	TO	DISTANCE
BRAZIL	ARGENTINA	1691.067
BRAZIL	BRUNEI	17173.37
BRAZIL	CHINA	17614.3
BRAZIL	GERMANY	9847.663
BRAZIL	INDONESIA	15644.48
BRAZIL	JAPAN	18549.61
BRAZIL	CAMBODIA	16743.93
BRAZIL	KOREA, REPUBLIC	18364.51
BRAZIL	LAOS	16782.53
BRAZIL	MYANMAR	16086.29
BRAZIL	MALAYSIA	15940.63
BRAZIL	NETHERLANDS	9810.82
BRAZIL	PHILIPINES	18396.48
BRAZIL	PARAGUAY	1134.649
BRAZIL	SINGAPORE	16000.61
BRAZIL	THAILAND	16409.97
BRAZIL	URUGUAY	1567.878
BRAZIL	UNITED STATES	7694.307
BRAZIL	VIETNAM	17191.68

FROM	TO	DISTANCE
KOREA, REPUBLI	ARGENTINA	19447.35
KOREA, REPUBLI	BRAZIL	18364.51
KOREA, REPUBLI	BRUNEI	3825.485
KOREA, REPUBLI	CHINA	955.6511
KOREA, REPUBLI	GERMANY	8543.784
KOREA, REPUBLI	INDONESIA	5291.684
KOREA, REPUBLI	JAPAN	1156.67
KOREA, REPUBLI	CAMBODIA	3628.807
KOREA, REPUBLI	URUGUAY	19629.5
KOREA, REPUBLI	LAOS	3218.349
KOREA, REPUBLI	MYANMAR	3796.143
KOREA, REPUBLI	MALAYSIA	4614.067
KOREA, REPUBLI	NETHERLANDS	8573.183
KOREA, REPUBLI	PHILIPINES	2615.751
KOREA, REPUBLI	PARAGUAY	18600.7
KOREA, REPUBLI	SINGAPORE	4676.683
KOREA, REPUBLI	THAILAND	3724.624
KOREA, REPUBLI	UNITED STATES	11065.7
KOREA, REPUBLI	VIETNAM	2740.135

FROM	TO	DISTANCE
JAPAN	ARGENTINA	18372.04
JAPAN	BRAZIL	18549.61
JAPAN	BRUNEI	4260.378
JAPAN	CHINA	2098.111
JAPAN	GERMANY	9298.341
JAPAN	INDONESIA	5791.627
JAPAN	KOREA	1156.67
JAPAN	CAMBODIA	4409.127
JAPAN	URUGUAY	18587.08
JAPAN	LAOS	4143.801
JAPAN	MYANMAR	4781.767
JAPAN	MALAYSIA	5329.095
JAPAN	NETHERLANDS	9303.377
JAPAN	PHILIPINES	2999.541
JAPAN	PARAGUAY	18005.33
JAPAN	SINGAPORE	5326.388
JAPAN	THAILAND	4612.997
JAPAN	UNITED STATES	10855.59
JAPAN	VIETNAM	3672.564

FROM	TO	DISTANCE
CHINA	ARGENTINA	19297.47
CHINA	BRAZIL	17614.3
CHINA	BRUNEI	3896.4
CHINA	KOREA	955.6511
CHINA	GERMANY	7785.342
CHINA	INDONESIA	5220.879
CHINA	JAPAN	2098.111
CHINA	CAMBODIA	3351.089
CHINA	URUGUAY	19175.59
CHINA	LAOS	2778.652
CHINA	MYANMAR	3234.079
CHINA	MALAYSIA	4355.047
CHINA	NETHERLANDS	7831.141
CHINA	PHILIPINES	2850.319
CHINA	PARAGUAY	18311.35
CHINA	SINGAPORE	4484.657
CHINA	THAILAND	3303.891
CHINA	UNITED STATES	10993.68
CHINA	VIETNAM	2330.799

FROM	TO	DISTANCE
GERMANY	ARGENTINA	11512.14
GERMANY	BRAZIL	9847.663
GERMANY	BRUNEI	10811.99
GERMANY	KOREA	8543.784
GERMANY	CHINA	7785.342
GERMANY	INDONESIA	11227.22
GERMANY	JAPAN	9298.341
GERMANY	CAMBODIA	9552.044
GERMANY	URUGUAY	11412.01
GERMANY	LAOS	8842.204
GERMANY	MYANMAR	8508.293
GERMANY	MALAYSIA	10070.46
GERMANY	NETHERLANDS	173.5239
GERMANY	PHILIPINES	10320.74
GERMANY	PARAGUAY	10607.28
GERMANY	SINGAPORE	10380.27
GERMANY	THAILAND	9065.879
GERMANY	UNITED STATES	6035.334
GERMANY	VIETNAM	8793.074

FROM	TO	DISTANCE
NETHERLANDS	ARGENTINA	11466.75
NETHERLANDS	BRAZIL	9810.82
NETHERLANDS	BRUNEI	10917.29
NETHERLANDS	KOREA	8573.183
NETHERLANDS	GERMANY	173.5239
NETHERLANDS	INDONESIA	11361.64
NETHERLANDS	JAPAN	9303.377
NETHERLANDS	CAMBODIA	9666.672
NETHERLANDS	URUGUAY	11371.8
NETHERLANDS	LAOS	8951.699
NETHERLANDS	MYANMAR	8630.553
NETHERLANDS	MALAYSIA	10201.5
NETHERLANDS	CHINA	7831.141
NETHERLANDS	PHILIPINES	10399.29
NETHERLANDS	PARAGUAY	10548.14
NETHERLANDS	SINGAPORE	10510.19
NETHERLANDS	THAILAND	9185.165
NETHERLANDS	UNITED STATES	5866.046
NETHERLANDS	VIETNAM	8892.063

FROM	TO	DISTANCE
UNITED STATES	ARGENTINA	8542.694
UNITED STATES	BRAZIL	7694.307
UNITED STATES	BRUNEI	14867.64
UNITED STATES	KOREA	11065.7
UNITED STATES	GERMANY	6035.334
UNITED STATES	INDONESIA	16180.32
UNITED STATES	JAPAN	10855.59
UNITED STATES	CAMBODIA	14208.13
UNITED STATES	URUGUAY	8617.354
UNITED STATES	LAOS	13487.61
UNITED STATES	MYANMAR	13550.22
UNITED STATES	MALAYSIA	15130.12
UNITED STATES	NETHERLANDS	5866.046
UNITED STATES	PHILIPINES	13680.8
UNITED STATES	PARAGUAY	7537.521
UNITED STATES	SINGAPORE	15350.5
UNITED STATES	THAILAND	13943.4
UNITED STATES	CHINA	10993.68
UNITED STATES	VIETNAM	13159.26

FROM	TO	DISTANCE
EAST ASIAN	ARGENTINA	15817.92
EAST ASIAN	BRAZIL	14441.49
EAST ASIAN	EAST ASIAN	4773.091
EAST ASIAN	CHINA	3785.013
EAST ASIAN	GERMANY	6229.637
EAST ASIAN	JAPAN	5847.71
EAST ASIAN	KOREA, REPUBLIC	4692.672
EAST ASIAN	NETHERLANDS	6363.421
EAST ASIAN	PARAGUAY	15567.39
EAST ASIAN	UNITED STATES	11761.81
EAST ASIAN	URUGUAY	15606.99

Source: Centre d'Etude Perspectives et d'Information International

Gross Domestic Product

GDP (current USD)

Country Name	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Argentina	530,163,281,575	545,982,375,701	552,025,140,252	526,319,673,732	594,749,285,413	557,531,376,218	643,628,665,302	524,819,742,919	451,932,356,086	389,288,056,265
Brazil	2,616,156,606,667	2,465,228,293,894	2,472,819,362,217	2,456,043,766,029	1,802,211,999,539	1,795,693,265,810	2,063,514,688,762	1,916,933,708,382	1,877,824,273,721	1,444,733,258,972
Brunei Darussalam	18,525,319,978	19,047,940,301	18,093,829,923	17,098,342,541	12,930,394,938	11,400,854,268	12,128,104,859	13,567,351,175	13,469,422,959	12,005,825,770
China	7,551,500,124,197	8,532,229,986,994	9,570,406,235,660	10,475,682,920,598	11,061,553,079,872	11,233,276,536,745	12,310,409,370,894	13,894,817,549,380	14,279,937,467,431	14,722,730,697,890
Germany	3,744,408,602,684	3,527,344,944,140	3,732,743,446,219	3,883,920,155,292	3,356,235,704,120	3,467,498,002,104	3,681,732,583,769	3,975,347,237,443	3,888,326,788,627	3,846,413,928,654
Indonesia	892,969,107,923	917,869,910,106	912,524,136,718	890,814,755,233	860,854,235,065	931,877,364,178	1,015,618,742,566	1,042,271,531,012	1,119,091,259,075	1,058,423,838,345
Japan	6,233,147,172,341	6,272,362,996,105	5,212,328,181,166	4,896,994,405,353	4,444,930,651,964	5,003,677,627,544	4,930,837,369,151	5,036,891,740,656	5,148,781,948,478	5,057,758,958,707
Cambodia	12,829,541,141	14,054,443,213	15,227,991,395	16,702,610,842	18,049,954,289	20,016,747,754	22,177,200,512	24,571,753,583	27,089,389,787	25,808,561,551
Korea, Rep.	1,253,223,044,719	1,278,427,634,343	1,370,795,199,976	1,484,318,219,634	1,465,773,245,547	1,500,111,596,236	1,623,901,496,836	1,724,845,615,629	1,651,422,932,448	1,637,895,802,793
Lao PDR	8,750,107,402	10,192,848,926	11,983,252,611	13,279,248,479	14,426,381,187	15,912,495,369	17,071,162,084	18,141,651,381	18,897,252,233	19,132,635,712
Myanmar	54,118,601,975	58,318,677,645	60,572,254,371	63,264,891,867	63,045,306,514	60,291,738,935	61,449,391,917	67,144,726,168	68,697,761,477	79,852,046,611
Malaysia	297,951,960,784	314,443,149,443	323,277,158,907	338,061,963,396	301,354,803,994	301,255,380,276	319,112,136,545	358,791,603,678	365,276,282,438	337,006,066,373
Netherlands	904,085,980,796	838,971,306,991	876,923,518,850	890,981,311,078	765,264,949,781	783,528,181,705	831,809,944,961	913,597,086,063	910,194,347,569	913,865,395,790
Philippines	234,216,930,369	261,920,509,950	283,902,728,260	297,483,247,101	306,446,140,628	318,626,761,492	328,480,867,143	346,842,094,175	376,823,278,561	361,489,325,231
Paraguay	33,756,238,767	33,296,438,306	38,651,334,288	40,377,987,209	36,211,372,703	36,089,550,659	38,997,129,474	40,225,448,341	37,906,944,075	35,670,301,496
Singapore	279,351,168,707	295,087,220,933	307,576,360,585	314,851,156,183	308,004,146,058	318,763,807,456	343,337,750,742	375,981,539,146	374,386,306,993	339,998,477,930
Thailand	370,819,140,947	397,558,222,957	420,333,203,150	407,339,454,061	401,296,437,425	413,366,150,656	456,356,961,443	506,611,070,188	544,263,840,039	501,643,653,515
Uruguay	47,962,439,304	51,264,390,116	57,531,233,351	57,236,013,086	53,274,304,222	57,236,652,490	64,233,966,861	64,515,038,268	61,231,149,881	53,628,827,440
United States	15,542,581,104,000	16,197,007,349,000	16,784,849,196,000	17,527,163,695,000	18,238,300,569,000	18,745,075,687,000	19,542,979,183,000	20,611,860,934,000	21,433,224,697,000	20,953,030,000,000
Vietnam	135,539,438,560	155,820,001,920	171,222,025,117	186,204,652,922	193,241,108,710	205,276,172,135	223,779,865,815	245,213,686,369	261,921,244,843	271,158,442,449

Source: World Bank Indicators

Population

Population (total)

Country Name	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Argentina	41,261,490	41,733,271	42,202,935	42,669,500	43,131,966	43,590,368	44,044,811	44,494,502	44,938,712	45376763
Brazil	197,514,541	199,287,292	201,035,904	202,763,744	204,471,759	206,163,056	207,833,825	209,469,320	211,049,519	212559409
Brunei Darussalam	393,687	398,997	404,414	409,778	414,914	419,791	424,481	428,960	433,296	437483
China	1,345,035,000	1,354,190,000	1,363,240,000	1,371,860,000	1,379,860,000	1,387,790,000	1,396,215,000	1,402,760,000	1,407,745,000	1410929362
Germany	80,274,983	80,425,823	80,645,605	80,982,500	81,686,611	82,348,669	82,657,002	82,905,782	83,092,962	83240525
Indonesia	245,115,988	248,451,714	251,805,314	255,128,076	258,383,257	261,556,386	264,650,969	267,670,549	270,625,567	273523621
Japan	127,833,000	127,629,000	127,445,000	127,276,000	127,141,000	126,994,511	126,785,797	126,529,100	126,264,931	125836021
Cambodia	14,541,421	14,780,454	15,026,330	15,274,506	15,521,435	15,766,290	16,009,413	16,249,795	16,486,542	16718971
Korea, Rep.	49,936,638	50,199,853	50,428,893	50,746,659	51,014,947	51,217,803	51,361,911	51,606,633	51,709,098	51780579
Lao PDR	6,347,564	6,444,527	6,541,302	6,639,763	6,741,160	6,845,848	6,953,031	7,061,498	7,169,456	7275556
Myanmar	50,990,612	51,413,703	51,852,464	52,280,816	52,680,724	53,045,199	53,382,521	53,708,318	54,045,422	54409794
Malaysia	28,650,962	29,068,189	29,468,923	29,866,606	30,270,965	30,684,652	31,104,655	31,528,033	31,949,789	32365998
Netherlands	16,693,074	16,754,962	16,804,432	16,865,008	16,939,923	17,030,314	17,131,296	17,231,624	17,344,874	17441139
Philippines	95,570,049	97,212,639	98,871,558	100,513,137	102,113,206	103,663,812	105,172,921	106,651,394	108,116,622	109581085
Paraguay	6,333,981	6,421,510	6,510,273	6,599,524	6,688,746	6,777,878	6,867,058	6,956,069	7,044,639	7132530
Singapore	5,183,688	5,312,437	5,399,162	5,469,724	5,535,002	5,607,283	5,612,253	5,638,676	5,703,569	5685807
Thailand	67,518,379	67,835,969	68,144,519	68,438,748	68,714,519	68,971,313	69,209,817	69,428,454	69,625,581	69799978
Uruguay	3,368,926	3,378,975	3,389,436	3,400,439	3,412,013	3,424,139	3,436,645	3,449,290	3,461,731	3473727
United States	311,583,481	313,877,662	316,059,947	318,386,329	320,738,994	323,071,755	325,122,128	326,838,199	328,329,953	329484123
Vietnam	88,871,384	89,801,926	90,752,593	91,713,850	92,677,082	93,640,435	94,600,643	95,545,959	96,462,108	97338583

Source: World Bank Indicators

Foreign Direct Investment Flows by Country

PARAGUAY FOREIGN DIRECT INVESTMENT INFLOW - USD MILLION

PARTNER COUNTRY	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Argentina	17.45	37.09	38.52	17.81	2.40	39.53	67.77	-26.49	-37.94	-7.28
Brazil	57.70	167.55	123.61	161.95	89.23	-43.69	116.95	49.33	82.72	75.76
China	1.59	3.64	0.75	0.36	3.53	1.26	1.76	0.77	2.16	1.60
Korea, Republic	-0.36	0.10	0.48	-0.81	0.19	1.81	2.61	0.55	0.30	0.79
United States	144.78	154.18	-10.22	-31.02	46.44	-29.75	-11.92	104.07	136.93	3.51
Philipines	0.00	0.00	0.00	0.00	1.80	-0.85	-0.29	0.14	-0.04	-0.04
Netherlands	-58.95	55.75	2.90	-56.24	117.92	66.56	31.22	93.08	95.72	7.13
Japan	-22.47	5.30	44.61	27.67	-28.07	27.88	27.87	-31.46	6.38	3.21
Uruguay	11.33	11.99	31.49	113.63	-116.99	-12.83	27.04	18.37	19.56	-1.01
Alemania	11.87	11.51	-6.73	-2.83	-2.65	-6.53	0.90	17.84	43.63	5.44
Brunei darussalam	0	0	0	0	0	0	0	0	0	0
Cambodia	0	0	0	0	0	0	0	0	0	0
Indonesia	0	0	0	0	0	0	0	0	0	0
Laos	0	0	0	0	0	0	0	0	0	0
Malaysia	0	0	0	0	0	0	0	0	0	0
Myanmar	0	0	0	0	0	0	0	0	0	0
Singapore	0	0	0	0	0	0	0	0	0	0
Thailand	0	0	0	0	0	0	0	0	0	0
Vietnam	0	0	0	0	0	0	0	0	0	0

Source: Central Bank of Paraguay

BRAZIL FOREIGN DIRECT INVESTMENT INFLOW - USD MILLION

PARTNER COUNTRY	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Argentina	97	262	82	76	39	108	92	105	103	16
Brunei	20	18	16	14	16	19	19	-	-	0
Cambodia	0	0	0	0	0	0	0	0	-	0
China	179	185	110	840	232	425	643	349	105	143
Germany	1 125	826	1 011	1 574	3 453	1 826	3 221	3 793	1 440	851
Indonesia	11	34	58	67	41	45	34	14	106	0
Japan	7 536	1 471	2 516	3 780	2 878	1 412	537	1 124	1 958	2 011
Korea, Republic	1 169	979	544	467	767	742	460	394	222	272
Laos	0	0	0	0	0	0	0	0	0	0
Malasya	35	67	67	0	58	53	34	25	1 747	1,459
Myanmar	0	0	0	0	0	0	0	-	-	0
Netherlands	17 582	12 213	10 511	8 791	11 573	10 540	10 894	9 232	6 213	5 401
Paraguay	36	34	66	45	19	67	157	68	203	205
Philipines	25	22	20	17	16	21	21	0	0	0
Singapore	252	999	271	219	267	227	199	535	161	782
Thailand	12	37	45	6	30	55	60	44	76	94
United States	8 909	12 310	9 024	8 580	6 866	6 545	11 069	7 287	10 287	7 532
Uruguay	301	567	130	183	318	292	218	66	82	411
Vietnam	0	0	0	0.31	0	-2	0	0	0	0

Source: Central Bank of Brazil

ARGENTINA FOREIGN DIRECT INVESTMENT INFLOW - USD MILLION

Partner Country	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Brazil	1 756	621	367	584	5 349	4 536	4 983	4 056	3 894	4 614
Brunei	0	0	0	0	0	0	0	0	0	0
Cambodia	0	0	0	0	0	0	0	0	0	0
China	47	332	110	126	661	618	709	499	773	1 111
Germany	221	525	927	749	2 526	2 218	2 621	2 467	3 467	3 412
Indonesia	0	0	0	0	3	4	3	1	2	4
Japan	37	- 44	191	160	769	500	880	654	681	813
Korea, Republic	15	1	0	0	33	20	21	398	329	380
Laos	0	0	0	0	0	0	0	0	0	0
Malaysia	-42.6	-3.03	-1.83	0.34	25	19	21	0	0	270
Myanmar	0	0	0	0	0	0	0	0	0	0
Netherlands	840	3 170	2 345	2 629	8 821	9 140	9 300	8 065	6 949	9 997
Paraguay	-83.3	9.6	9.2	41.09	103	84	921	46	40	72
Philipines	0	0	0	0	1	2	3	3	4	6
Singapore	41	- 6	78	- 27	137	149	177	265	404	370
Thailand	0	0	0	0	27	22	27	0	0	0
United States	2 167	2 221	2 310	4 200	18 873	16 993	17 713	19 634	17 210	0
Uruguay	- 8	450	1 249	722	3 317	3 582	3 710	3 179	3 030	3 657
Vietnam	0	0	0	0	0	0	1	0	1	0

Source: Central Bank of Argentina, Investment Map ITC

URUGUAY FOREIGN DIRECT INVESTMENT INFLOW - USD MILLION

Partner Country	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
United States	755	857	341	- 189	- 2 467	3 920	- 984	1 281	1 366	- 1 251
Singapore	0	58.2	104.26	-79.2	240.11	105.7	539.46	371.82	110.14	215.9
Paraguay	189	241.8	286.91	177.61	114.49	155.29	-69.3	-31.65	-53	-3.7
Germany	104	135	51	- 71	169	- 92	68	- 46	- 53	336
Japan	76	87	- 33	241	97	- 24	- 87	- 175	329	- 103
Argentina	3756	4710	292.62	-261.68	46.51	234.84	193	- 364	94	-375.7
Netherlands	651	744	- 156	- 1 443	56	- 193	- 177	- 980	129	2 008
Brazil	1 098	1 288	514.69	-249.17	541	- 844	187	- 1 142	455	- 1 666
China	0.36	47.5	27.2	-32.7	-9.6	-113.2	-7.2	-34.8	-19.4	-11
Korea, Republic	9	9	1	1	3	0	-	0	0	0
Philipines	0	0	0	0	0.07	0	0	0.01	0.02	0
Brunei	-	-	-	-	-	-	-	-	-	-
Cambodia	0	0	0	0	0	0	0	0	0	0
Indonesia	0	0	0	0	0	0	-	0	0	0
Laos	-	-	-	-	-	-	-	-	-	-
Malasya	0	0	0	0	0	0	-	0	0	0
Myanmar	-	-	-	-	-	-	-	-	-	0
Vietnam	-	-	-	-	-	-	-	-	-	-
Thailand	0	0	0	0	0	0	0	0	0	0

Source: Central Bank of Uruguay

URUGUAY FOREIGN DIRECT INVESTMENT INFLOW - USD MILLION

Partner Country	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
United States	755	857	341	- 189	- 2 467	3 920	- 984	1 281	1 366	- 1 251
Singapore	0	58.2	104.26	-79.2	240.11	105.7	539.46	371.82	110.14	215.9
Paraguay	189	241.8	286.91	177.61	114.49	155.29	-69.3	-31.65	-53	-3.7
Germany	104	135	51	- 71	169	- 92	68	- 46	- 53	336
Japan	76	87	- 33	241	97	- 24	- 87	- 175	329	- 103
Argentina	3756	4710	292.62	-261.68	46.51	234.84	193	- 364	94	-375.7
Netherlands	651	744	- 156	- 1 443	56	- 193	- 177	- 980	129	2 008
Brazil	1 098	1 288	514.69	-249.17	541	- 844	187	- 1 142	455	- 1 666
China	0.36	47.5	27.2	-32.7	-9.6	-113.2	-7.2	-34.8	-19.4	-11
Korea, Republic	9	9	1	1	3	0	-	0	0	0
Philipines	0	0	0	0	0.07	0	0	0.01	0.02	0
Brunei	-	-	-	-	-	-	-	-	-	-
Cambodia	0	0	0	0	0	0	0	0	0	0
Indonesia	0	0	0	0	0	0	-	0	0	0
Laos	-	-	-	-	-	-	-	-	-	-
Malasya	0	0	0	0	0	0	-	0	0	0
Myanmar	-	-	-	-	-	-	-	-	-	0
Vietnam	-	-	-	-	-	-	-	-	-	-
Thailand	0	0	0	0	0	0	0	0	0	0

Source: Central Bank of Uruguay

UNITED STATES FOREIGN DIRECT INVESTMENT INFLOW - USD MILLION

Partner Country	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Germany	213601	197438	213256	251009	281295	277209	298208	320457	351283	411308
Netherlands	222465	244147	237734	258177	298782	313649	376413	448285	467373	483991
Japan	0	0	0	0	0	0	0	0	0	0
Brazil	5077	3562	1891	1444	142	1020	487	3350	5912	6857
China	3598	7076	7855	10071	14714	31871	36447	35437	39643	37995
Malaysia	274283	301183	350395	371874	401835	427229	487997	514234	634160	647718
Philippines	911	1012	986	1154	1278	1121	1345	1021	778	863
Singapore	0	0	0	0	0	0	0	0	0	0
South Korea	16819	18701	17082	20665	21585	21661	24503	24598	26248	27257
Thailand	0	0	0	0	0	0	0	0	0	0
Viet Nam	0	0	0	0	0	0	0	0	0	0
Lao People's Democratic Republic	0	0	0	0	0	0	0	0	0	0
Indonesia	0	0	0	0	0	0	0	0	0	0
Brunei Darussalam	0	0	0	0	0	0	0	0	0	0
Argentina	0	0	0	0	0	0	0	0	0	0
Uruguay	0	0	0	0	0	0	0	0	0	0
Paraguay	0	0	0	0	0	0	0	0	0	0
Myanmar	0	0	0	0	0	0	0	0	0	0
Cambodia	0	0	0	0	0	0	0	0	0	0

Source: U.S. Bureau of Economic

NETHERLANDS FOREIGN DIRECT INVESTMENT INFLOW - USD MILLION

Partner Country	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Germany	129642.6702	185251.5445	16285.38	27193.08	17427.12	-8524.26	-911.65	32049.92	36940.08	332292.5445
Singapore	18899.95331	11659.40586	1961.63	4697.58	3731.29	3506.67	47436.44	-6090.18	33427.51	108524.724
China	1780.185143	3836.55132	292.19	3205.67	1630.98	2313.43	4287.14	564.5	5995.91	20462
Philippines	1388.543609	0	110.23	9.3	218.57	16.6	-202.21	9.45	415.77	1406.2566
Uruguay	287.1772233	0	382.5	-437.08	0	120.65	1104.83	-2.36	369.99	-71.1718
Thailand	62.2314144	0	265.62	103.62	0	1.11	-86.99	-24.8	78.7	3132.7863
Cambodia	0	0	1.33	1.33	0	0	0	-1.18	0	0
Myanmar	0	0	0	0	0	0	0	-3.54	-1.34	0
Lao People's Democratic Republic	0	0	0	0	0	0	0	0	-3.02	0
Brunei Darussalam	0	0	-5.31	1.33	0	0	0	48.42	-29.78	0
Paraguay	0	0	-1.33	5.31	0	0	0	16.53	-63.92	3.6813
Viet Nam	0	0	-5.31	41.18	0	-17.71	-1.13	1.18	-100.19	-687.176
Indonesia	-4114.301815	-4210.46928	-722.5	1741.66	693.45	799.18	-172.84	-49.6	-115.42	1363.3081
Argentina	786.2396289	0	-3.98	95.65	-414.96	128.4	-126.52	243.28	-288.94	69
Korea, Republic of	785.9368563	1012.90338	463.51	964.49	123.16	-135.04	-271.12	55.5	-486.52	0
Malaysia	1606.273338	5574.86082	7214.34	948.55	-5.55	280.05	-931.99	-524.34	-1764.07	14354.6158
Brazil	25042.9881	27042	-698.59	2385.99	538.11	1370.35	8661.27	-11403.3	-9348.17	0
Japan	71813.98604	71761.5063	2709.36	426.45	12358.86	14215.96	7061.64	-3010.25	-9477.36	116616.2214
United States of America	839525.5181	803074.1843	24449.32	-65077.94	155967.56	0	-105375.53	-287188.06	-47194.36	1190180.242

Source: Investment Map/ITC; Direct Investment Coordinated Survey IMF

GERMANY FOREIGN DIRECT INVESTMENT INFLOW - USD MILLION

Partner Country	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
United States of America	90210	99617.9985	11431.11	4297.7	1792.97	-83.02	10939.83	-3940.85	10729.04	115320.4038
Japan	21031.56816	26348	3034.75	542.03	2475.32	1904.98	2326.01	2111.55	4893.22	33134.1542
China	1601.8482	2239	2549.99	2021.98	103.18	327.64	-222.55	15.35	1446.36	5726.8757
Korea, Republic of	5556.78294	6318	1108.98	1227.53	161.99	718.38	152.51	-8.27	1110.52	0
Viet Nam	0	0	9.3	-2.66	3.33	4.43	7.91	-16.53	2.24	0
Myanmar	0	0	0	0	0	0	0	0	0	0
Cambodia	0	0	19.92	-19.93	1.11	-1.11	0	1.18	0	0
Lao People's Democratic Republic	0	0	0	0	0	0	0	0	0	0
Paraguay	0	0	0	6.64	0	8.86	1.13	-2.36	0	-12.271
Philippines	0	0	207.19	-14.61	-5.55	4.43	2.26	-11.81	0	-3.6813
Brunei Darussalam	0	0	3.98	2.66	9.99	-4.43	-4.52	-2.36	-3.36	0
Uruguay	48.13308	53.30376	-5.31	18.6	-8.88	-11.07	1.13	-7.09	-3.36	0
Argentina	0	0	324.06	-51.81	-65.46	43.17	40.67	-23.62	-6.72	0
Indonesia	0	0	245.7	15.94	25.52	23.24	-33.89	14.17	-17.91	0
Brazil	0	305	1101.01	-147.46	43.27	-34.31	48.58	-115.73	-21.27	0
Malaysia	734.15886	713	236.41	98.31	130.92	67.52	-201.08	-12.99	-41.42	743.6226
Thailand	165.36042	188.27838	146.09	-10.63	-27.74	-109.58	-11.3	80.3	-71.65	-29.4504
Singapore	1252.62459	1380.22434	444.92	49.15	-219.68	147.22	-498.19	-4.72	-410.85	3227.273
Netherlands	232245.087	248562.1618	-15793.98	-32538.97	10580.31	3408.15	11074.26	37115.04	-10243.19	206592.1018

Source: Investment Map/ITC; Direct Investment Coordinated Survey IMF

CHINA FOREIGN DIRECT INVESTMENT INFLOW - USD MILLION

Partner Country	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Singapore	6096.81	6305.08	7228.72	5826.68	6904.07	6046.68	4763.18	5210.21	102458.3283	1690.642389
Korea, Republic of	2551.07	3038	3054.21	3965.64	4034.01	4751.12	3672.53	4666.88	64006.28606	
Japan	6329.63	7351.56	7058.17	4325.3	3194.96	3095.85	3261	3797.8	147881.111	714.5873534
Germany	0	0	0	0	0	0	0	3674.28	67879.3532	0
United States of America	2369.32	2598.09	2819.87	2370.74	2088.89	2386.01	2649.05	2689.31	67473.89388	4145.005238
Netherlands	0	0	0	0	0	0	0	1272.68	29546.37634	6475.28826
Malaysia	0	0	0	0	0	0	0	211.62	5761.128168	101
Philippines	0	0	0	0	0	0	0	49.86	1064.370171	1
Thailand	0	0	0	0	0	0	0	45.74	2595.932277	148720.745
Indonesia	0	0	0	0	0	0	0	32.46	563	86683.71364
Argentina	0	0	0	0	0	0	0	0	7	0
Brazil	0	0	0	0	0	0	0	0	161	0
Brunei	0	0	0	0	0	0	0	0	1600	0
Cambodia	0	0	0	0	0	0	0	0	267	9.57109
Lao	0	0	0	0	0	0	0	0	9.952273	193337.5724
Vietnam	0	0	0	0	0	0	0	0	94	3
Uruguay	0	0	0	0	0	0	0	0	0	86907
Paraguay	0	0	0	0	0	0	0	0	0	40919.72021
Myanmar	0	0	0	0	0	0	0	0	52.973579	0

Source: Investment Map/ITC; Direct Investment Coordinated Survey IMF

SOUTH KOREA FOREIGN DIRECT INVESTMENT INFLOW - USD MILLION

Partner Country	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Argentina	0	0	0	0.56	0	0	0	0	0	5
Brazil	3	0	3.62	-0.81	0	0	1.06	0	0	0
Brunei Darussalam	5	5.104734819	0	3.73	0	0	0	0	0	0
Myanmar	0.547399748	0.561436494	0	-0.36	0	0	0.09	0	0.09	0
Cambodia	1	2.062616476	0	-1.73	0	0	0.18	0.19	0.63	12
China	1473.569563	1995.777895	194.62	310.39	106.91	347	148.33	758.36	132.92	8608.59366
Germany	6460.88147	6707.859726	-52.53	143.93	496.83	105.01	704.72	-255.13	227.36	10575.20811
Indonesia	6.862856339	65.31204448	1.21	6.38	0.63	2	4.13	0.48	76.63	35.02287378
Japan	34147.76549	41845.10423	2402.82	483.56	651.94	1073	1353.7	1054.62	1384.89	57792.43014
Lao People's Democratic Republic	0	0	0	-2.41	0	0	0	0	0	0
Malaysia	1520.302141	2212.802891	-201.08	-412.29	-76.01	-67	142.7	15.17	51.29	2287.263275
Netherlands	14894.84097	18403.35483	480.21	-338.76	-344.76	619	1093.19	133.05	2306.67	17753.29178
Paraguay	6.215219023	6.374593327	0	-0.98	0	0	0	0.1	0	0
Philippines	23.32290032	20.72591132	-1.09	1.35	-55.66	-16	3.25	0.36	1.01	304.532655
Singapore	4115.432548	5655.508349	182.17	1633.3	353.64	412	1008.22	1431.06	861.85	18651.66316
Viet Nam	4.208274444	9	0.08	-7.03	0	0	1.13	1.85	19.27	-42.68906064
Thailand	0	22.29464514	-18.6	-3.39	0	0	5.3	3.06	7.19	337.5167106
United States of	29785.56319	29818.23806	76.15	983.9	825.66	1055	1245.12	2009.03	1472.96	35053.02235
Uruguay	0	2	0	2.6	0	0	0	0	0	0

Source: Investment Map/ITC; Direct Investment Coordinated Survey IMF

JAPAN FOREIGN DIRECT INVESTMENT INFLOW - USD MILLION

Partner Country	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
United States of America	70771	0	52437	6850.28	4047.84	3966.26	4116.33	4705.75	58187	62748
Korea, Republic of	2220	0	2080	766.94	911.13	582.9	937.07	1890.12	72490	0
China	559	0	576	332.39	88.43	279.05	600.88	447.35	2037	2515
Malaysia	550	0	481	20.86	46.27	15.61	36.6	19.96	674	634
Philippines	71	0	61	15.14	12.43	-4.65	17.85	12.64	138	163
Brazil	41	0	51	0	44.6	0	-2.71	8.15	41	0
Cambodia	0	0	0	0	0	0.89	0	1.77	0	0
Myanmar	0	507	0	0	-1.66	0	0	0.94	0	0
Viet Nam	0	0	0	-0.93	0	1.88	0	0.94	4	7
Brunei Darussalam	0	0	0	0	0	0.89	0	0	0	0
Indonesia	62	8364	44	6.64	20.64	38.63	196.11	-2.72	142	154
Argentina	0	0	0	45.43	8.21	-19.37	-17.85	-18.07	0	0
Netherlands	39859	0	27683	-1183.56	-1013.65	-942.97	-184.59	-441.91	19471	20886
Germany	9632	550	6442	-355.11	-4323.77	582.9	-1006.55	-1132.06	2888	1689
Singapore	16000	65	13369	1329.3	1794.3	2455.11	526.88	-3679.62	29248	35629
Thailand	111	15342	111	5.71	42.94	102.17	73.09	47.12	275	326
Lao People's Democratic Republic	0	2843	0	0	0	0	0	0	0	0
Uruguay	0	61592	0	0	0	0	0	0	0	0
Paraguay	0	31524	0	0	0	0	0	0	0	0

Source: Investment Map/ITC; Direct Investment Coordinated Survey IMF

BRUNEI FOREIGN DIRECT INVESTMENT INFLOW - USD MILLION

Partner Country	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Japan	55.41	55.54	15.83	26.6	-36.51	-3.55	-11.95	62.64	-21.18	135.33
Singapore	2.07	26.25	-11.83	48.93	50.33	-70.87	57.64	51.52	-14.07	19.34
United States	18.44	32.09	-5.36	-38.83	-7.06	2.24	-1.01	0.22	0.37	0.83
Germany	0	-16.09	15.35	8.13	5.16	-4.13	4.06	-1.78	-1.25	-0.25
Malaysia	3.5	5.2	3.44	92.18	38.4	6.44	488.6	21.57	-4.25	-13.66
Netherlands	0.72	212.63	114.37	53.75	25.31	127.7	-24.4	26.91	-72.64	-61.96
China	0	0	0	0	0	0	0	0	0	0
Korea, Republic of	0	0	0	0	0	0	0	0	0	0
Thailand	0	0	0	0	0	0	0	0	0	0
Viet Nam	0	0	0	0	0	0	0	0	0	0
Philippines	0	0	0	0	0	0	0	0	0	0
Lao People's Democratic Republic	0	0	0	0	0	0	0	0	0	0
Indonesia	0	0	0	0	0	0	0	0	0	0
Argentina	0	0	0	0	0	0	0	0	0	0
Brazil	0	0	0	0	0	0	0	0	0	0
Uruguay	0	0	0	0	0	0	0	0	0	0
Paraguay	0	0	0	0	0	0	0	0	0	0
Myanmar	0	0	0	0	0	0	0	0	0	0
Cambodia	0	0	0	0	0	0	0	0	0	0

Source: Investment Map

INDONESIA FOREIGN DIRECT INVESTMENT INFLOW - USD MILLION

Partner Country	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Singapore	8514	7972	10722.98	12090.08	8847.1	8406.93	9413.41	10334.31	6315.98	4617.03
Thailand	102	117	130.76	231.28	46.83	612.52	-231.8	164.31	1137.21	3211.8
Korea, Republic of	725	692	865.91	952.8	227.56	199.45	15.73	109.17	1052.5	1568.24
China	215	335	66.62	1068.21	323.54	354.77	1993.77	3398.37	811.29	809.77
United States of America	-438	830	740.83	-1098.14	603.02	-335.03	-2457.82	-3935.67	1246.92	614.47
Malaysia	-293	-508	-281.05	754.91	329.62	869.02	976.04	620.7	-607.92	239.32
Viet Nam	2	3	4.95	9.05	6.3	11.28	20.25	21.31	23.22	126.17
Brazil	0	0	2.88	-0.71	23.08	17.39	14.93	16.95	9.8	3.18
Cambodia	0	0	0.02	0	0	0	0.03	1.06	0.26	2.01
Philippines	10	5	7.74	1.38	1.69	10.37	14.12	17.14	14.84	1.02
Myanmar	0	0	0	0	0.07	0.34	0.62	1.07	-0.46	0.5
Argentina	0	0	0	0.04	0.61	-0.38	0.54	-0.22	-0.06	0.04
Brunei Darussalam	0	0	-2.98	-2.98	-2.99	-2.97	-2.96	-2.87	-2.65	-0.04
Germany	-965	-1300	-1292.14	-354.2	-479.1	108.56	560.63	565.04	383.07	-48.07
Netherlands	-616	-829	-767.04	-555.13	-57.24	-573.99	4059.06	522.05	288.84	-72.63
Japan	0	0	0	0	0	0	0	0	0	0
Lao People's Democratic Republic	0	0	0	0	0	0	0	0	0	0
Uruguay	0	0	0	0	0	0	0	0	0	0
Paraguay	0	0	0	0	0	0	0	0	0	0

Source: Investment Map

MALAYSIA FOREIGN DIRECT INVESTMENT INFLOW - USD MILLION

Partner Country	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Singapore	2074.2	1731.95	1751.69	2165.37	2135.5	1724.47	1475.71	-202.21	853.7	1345.85
Thailand	374.7	-55.95	242.44	122.29	335.78	395.87	204.35	61.08	-23.92	760.59
China	8.22	31.13	102.93	297.82	336.77	1422.79	1601.33	139.22	118.97	621.16
Japan	3224.73	1900.99	2544.25	678.45	2430.93	874.37	1176.46	1229.04	2542.14	523.96
Indonesia	46.5	124.11	53.15	-22.59	440.34	35.03	393.77	250.71	228.43	254.26
United States of America	1092.08	-442.21	184.1	-531.11	1383.3	1190.17	-1135.96	1754.66	616.92	224.55
Viet Nam	79.73	118.76	145.14	34.2	18.31	-53.24	74.04	29.37	161.9	137.47
Netherlands	1160.88	633.06	1504.97	2087.55	799.12	527.06	160.26	499.18	818.22	87.89
Korea, Republic of	140.34	-225.64	-166.72	-255.05	147.19	362.75	218.46	-13.12	223.56	35.67
Philippines	6.49	719.51	-36.51	-17.63	52.95	1.44	53.49	208.11	190.59	29.52
Cambodia	31.75	0.48	-2.5	-0.48	3.87	-17.06	3.93	0.39	0.6	4.54
Brazil	-3.05	13.42	-1.28	1.3	-2.12	-5.13	-0.07	6.99	7.87	1.96
Myanmar	-2.19	-0.55	-0.5	1.05	-0.8	1.7	-0.95	-4.14	2.63	-3.98
Brunei Darussalam	80.09	21.05	2.29	-5.62	-5.64	18.12	0.03	-96.15	3.58	-24.25
Germany	1005.66	556.94	-7.52	333.97	-276.11	149.42	862.13	517.21	-168.98	-257.95
Lao People's Democratic Republic	0	0	0	0	0	0	0	0	0	0
Argentina	0	0	0	0	0	0	0	0	0	0
Uruguay	0	0	0	0	0	0	0	0	0	0
Paraguay	0	0	0	0	0	0	0	0	0	0

Source: Investment Map

PHILIPINES FOREIGN DIRECT INVESTMENT INFLOW - USD MILLION

Partner Country	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Japan	367.26	146.11	437.51	117.5	394.06	1088.39	72.13	85.55	304.74	698.72
Netherlands	-291.12	258.85	26.66	-2.89	361	88.16	1656.42	120.48	265.1	245.39
United States of America	224.92	553.5	-653.23	968.89	633.72	84.01	472.86	184.63	295.99	161.61
Singapore	24.34	-35.17	-138.04	33.6	159.75	231.11	687.43	1011.02	545.1	71.14
China	0.79	0.06	6	41.38	0.57	10.77	28.79	199.38	276.35	52.15
Malaysia	33.64	-34.98	99.78	0	-5.27	3.34	17.95	-16.66	43.37	21.24
Germany	13.47	8.26	21.51	49.36	68.39	109.74	57.46	58.68	41.95	12.95
Korea, Republic of	20.73	4.09	2.36	4.74	107.82	100.84	13.02	60.17	175.08	10.92
Indonesia	0.05	0.4	0.1	0	1.19	6.5	4.8	3.57	1.63	3.25
Thailand	-14.87	8.04	-3.55	45.04	10.1	26.82	14.11	69.84	68.9	1.03
Viet Nam	0.07	0	0	0	0.05	0.81	0.43	2.3	3.21	0.69
Cambodia	0	0	-0.02	0	0.03	0.57	0.03	0.19	0.01	0.33
Argentina	0	0	0	0	0	0	0	0.07	0.15	0.24
Brunei Darussalam	0	0.02	0.02	0.01	0.02	0.29	0.75	-0.06	0	0.22
Myanmar	0	0	0	0	0	0	0.01	0	0	0.06
Brazil	0	0.13	0	0	0	-0.11	0.2	0.01	0	0
Lao People's Democratic Republic	0	0	0	0	0.01	0	0	0.03	0	0
Paraguay	0	0	0	0	0	0	0	0.04	0	0
Uruguay	0	0	0	0	0.07	0	0	0.01	0.02	0

Source: Investment Map

VIETNAM FOREIGN DIRECT INVESTMENT INFLOW - USD MILLION

Partner Country	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Singapore	2306.4	1938.09	4769.04	2892.82	2082.47	2414.74	5894.86	5249.95	4421.21	9494.97
Korea, Republic of	1550.18	1285.29	4466.01	7704.99	6983.16	7965.24	8719.96	7320.51	8344.38	4214.14
Japan	2622.1	5593.16	5875.48	2298.99	1803.42	3035.89	9204.65	8944.47	4169.2	2983.56
China	767.27	371.25	2338.58	497.1	744.11	2136.66	2137.56	2531.75	4115.23	2613.29
Thailand	212.45	199.41	204.71	232.78	337.35	732	624.9	762.91	927.12	1806.01
Netherlands	394.21	119.07	398.71	204.51	430.46	92.14	822.53	396.44	839.31	907.57
United States of America	299.92	160.4	130.43	309.64	224.42	430.41	874.39	555.4	476.86	386.78
Philippines	13.5	21.92	0.57	13.27	5.45	54.95	30.03	53.13	9.54	307.91
Malaysia	458.3	238.49	147.78	388.43	2478.79	939.56	297.66	438.11	220.52	285.88
Germany	56.34	188.77	121.96	173.8	74.26	80.24	413.86	397.67	152.02	275.5
Indonesia	15.5	57.9	39.92	53.09	21.64	26.91	45.78	102.43	44.65	36.95
Cambodia	2.22	0.66	1	2	0	15.52	6.44	82.15	5.66	22.99
Brazil	0	0	0	0.1	0	0	0.06	0	0.11	2.33
Lao People's Democratic Republic	0.75	0	0	0	2.5	14.27	0.42	1.02	1.14	2.26
Brunei Darussalam	79.5	10.15	82.65	87.42	197.56	354.81	55.53	12.06	69.61	1.86
Argentina	0	0	0	0.15	0	0.03	2.38	3.48	0	0.02
Myanmar	0	0	0	0	0	0	0.01	0.1	0.13	0
Uruguay	0	0	0	0	0	0	0	0	0	0
Paraguay	0	0	0	0	0	0	0	0	0	0

Source: Investment Map

SINGAPORE FOREIGN DIRECT INVESTMENT INFLOW - USD MILLION

Partner Country	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
United States of America	6465.7	13784.5	9923	18287.9	17783.4	10876.5	33656.3	-24577.7	31868.2	33602.4
Netherlands	4399.4	8072	7675.8	-2837.6	5421.8	4126.7	5357	7381.1	3995.8	4133.8
Korea, Republic of	-101.4	-309.5	823.4	356.3	1312.5	1934.9	1807	1808.4	2058.2	2527.6
Japan	-1827	-1718.9	2661.9	3014	1794.1	4332.9	3271.2	10099.7	7937.1	2226.6
China	5467.3	5969.7	2508	4167.9	3991.2	5162.3	10471.1	5334	3269.5	2084.3
Malaysia	3276.7	3623.7	1358.9	806.2	1960	3243.6	2844.9	1435.2	1314.2	1672.3
Germany	-772.7	-482.5	371.1	-514.4	-853.6	-947.9	480.7	-630.9	-60.6	610
Indonesia	1814.4	6016.3	2100.1	1293.4	403.5	2090.1	1422.7	512.5	208.5	325.1
Thailand	-2794.3	1222.5	-47.9	2869.3	-149.4	1332.1	1128.6	635.2	1948.7	238.4
Philippines	-556.6	120.6	-346.1	380.3	839.2	271.1	207.5	1317.5	5.9	52.7
Viet Nam	66.9	99.1	117.2	45.7	-17.7	-29.7	17.9	-2	-8.5	50.4
Myanmar	125.1	82.7	91.7	94.9	29.6	80.7	40.6	-73	-36.8	18.6
Brunei Darussalam	35.5	817.6	188.8	-627.3	-29.9	19.7	6.7	60.1	26.8	0.7
Lao People's Democratic Republic	0	0	0	0	0	0	0	0	0	0
Argentina	0	0	0	0	0	0	0	0	0	0
Brazil	0	0	0	0	0	0	0	0	0	0
Uruguay	0	0	0	0	0	0	0	0	0	0
Paraguay	0	0	0	0	0	0	0	0	0	0
Cambodia	0	0	0	0	0	0	0	0	0	0

Source: Investment Map

THAILAND FOREIGN DIRECT INVESTMENT INFLOW - USD MILLION

Partner Country	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Singapore	1016.48	-1403.09	-132.11	-591.18	466.95	1928.51	1726.71	1650.3	5082.75	1812.21
Japan	-1370.42	3706.7	10927.21	2430.85	3006.26	2986.75	3131.59	5278.49	2338.53	1142.27
China	20.92	598.46	938.86	-221.35	238.12	1071.91	72.87	661.17	879.28	580.39
Germany	456.78	476.62	182.27	-74.68	130.89	114.46	400.25	232.92	183.15	145.67
United States of America	143.41	3966.52	857.17	2023.04	1083.14	438.64	-120.52	810.49	189.94	120.16
Malaysia	16.29	500.52	467.67	-198.1	-4.93	6.57	57.17	17.63	93.44	31.61
Cambodia	0.79	4.75	0.3	1.03	4.29	3.27	13.78	-3.83	11.33	22.89
Philippines	-18.16	8.12	56.97	-35.57	6.79	21.62	-13.14	-16.69	-2.49	13.99
Indonesia	-61.31	121.24	127.09	-131	-44.13	23.49	22.54	-31.6	-3.4	6.97
Lao People's Democratic Republic	0.03	0.07	1.01	1.86	1.19	17.02	5.13	4.7	4.01	4.81
Brunei Darussalam	1.25	1.02	1.59	5.81	2.3	2.61	1.45	2.49	1.59	3.67
Myanmar	-4.39	16.44	4.69	5.2	0.61	1.06	-0.21	2.06	0.76	1.22
Viet Nam	1.24	5.59	0.99	1.24	0.55	-0.77	0.59	1.49	2.92	0.86
Korea, Republic of	97.16	131.07	716.25	247.86	142.56	27.19	168.36	225.05	429.73	-17.36
Netherlands	252.55	784.55	-2300.23	353	250.82	-2227.42	467.58	523.02	-3936.28	-383.9
Argentina	0	0	0	0	0	0	0	0	0	0
Brazil	0	0	0	0	0	0	0	0	0	0
Uruguay	0	0	0	0	0	0	0	0	0	0
Paraguay	0	0	0	0	0	0	0	0	0	0

Source: Investment Map

CAMBODIA FOREIGN DIRECT INVESTMENT INFLOW - USD MILLION

Partner Country	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
China	179.68	367.76	286.75	553.89	537.68	501.54	618.1	798.24	9731.372499	10838.99922
Korea, Republic of	138.55	161.75	178.16	106.33	71.95	139.59	176.95	249.9	3791	0
Singapore	40.32	69.5	83.68	60.83	51.54	168.85	178.09	227.73	2031.504341	2290.238362
Japan	21.9	13.78	38.52	84.91	52.5	198.71	226.56	199.24	2023	2183.753843
Thailand	20.48	52.17	61.81	46.58	80.68	149.09	146.45	183.2	1578	1423.44342
Viet Nam	91.69	211.47	54.31	179.65	168.71	184.48	127.15	165.94	2368	2459.317434
Malaysia	71.33	189.88	97.88	85.21	121.55	124.8	144.95	157.8	1678.386872	1750.821196
United States of America	17.16	16.06	33.87	50.33	40.65	53.39	74.36	59.34	672	749.498368
Philippines	0	0	0	0	0.05	0.21	1.11	29.14	19	19.82266272
Lao People's Democratic Republic	0	0	0	0	0	0.03	1.06	24.44	51	50.58566552
Netherlands	10.11	14.32	-11.57	22.82	26.57	30.37	14.35	16.99	178.8456299	193.6632642
Indonesia	0	0	0	0.21	0.42	0.42	0.69	0.31	33	37
Brunei Darussalam	0	0	1.17	0	2.47	7.91	3.99	0.11	22.23710746	
Argentina	0	0.96	0	0	0	0.08	0	0	1.613263117	4.388233117
Germany	0	0	0	0	0	0	0	0	7	7.889763453
Brazil	0	0	0	0	0	0	0	0	0	0
Uruguay	0	0	0	0	0	0	0	0	0	0
Paraguay	0	0	0	0	0	0	0	0	0	0
Myanmar	0	0	0	0	0	0	0	0	0	0

Source: Investment Map; Direct Investment Coordinated Survey IMF

LAO PEOPLE'S DEMOCRATIC REPUBLIC FOREIGN DIRECT INVESTMENT INFLOW - USD MILLION

Partner Country	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
China	278.32	0	0	614.26	665.09	709.98	1313.62	1044.92	0	0
Viet Nam	48.97	0	0	10.82	100.62	21.67	7.74	99.15	0	0
Thailand	23.7	0	0	102.91	69.3	157.8	148.62	82.58	0	0
Japan	12.13	0	0	2.1	75.81	44.21	70.3	47.65	0	0
Korea, Republic of	2.04	0	0	12.55	45.69	77.27	102.42	24.88	0	0
Malaysia	0.3	0	0	3.74	12.36	11.66	12.38	18.05	0	0
Cambodia	0	0	0	18.98	39.11	0.04	0	2.35	0	0
Netherlands	0	0	0	47.78	3.12	0.75	0	2.27	0	0
Philippines	0	0	0	0	0	0.75	1	0.25	0	0
Singapore	2.04	0	0	1.49	0.14	4.63	1.41	0.1	0	0
Argentina	0	0	0	0	0	2.4	0	0	0	0
Germany	0	0	0	0	0.02	0	0	0	0	0
Indonesia	0	0	0	0	0.3	0.08	0	0	0	0
United States of America	0.05	0	0	0.21	8.93	3.24	0.2	0	0	0
Brunei Darussalam	0	0	0	0	0	0	0	0	0	0
Brazil	0	0	0	0	0	0	0	0	0	0
Uruguay	0	0	0	0	0	0	0	0	0	0
Paraguay	0	0	0	0	0	0	0	0	0	0
Myanmar	0	0	0	0	0	0	0	0	0	0

Source: Investment Map; Direct Investment Coordinated Survey IMF

MYANMAR FOREIGN DIRECT INVESTMENT INFLOW - USD MILLION

Partner Country	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
China	670.6	482.2	792.6	70.54	52.44	205.48	554.37	467.35	7118.590973	0
Thailand	3.5	24	494.5	82.35	537.78	70.07	540.71	274.35	3602.487994	0
Viet Nam	0	7.1	16.4	22.75	117.95	8.94	159.91	225.86	542.6658538	0
Korea, Republic of	0	0	0	11.1	36.97	35.34	-189.22	168.21	937.0510171	0
Japan	2.2	31.1	36	37.72	95.05	16.03	207.72	122.63	3142.270636	0
Malaysia	1.1	0.1	4	0	3.88	46.17	17.59	22.84	521.568064	0
Indonesia	79.8	0	16.4	0	0.24	0.06	2.28	10.96	51.38883065	0
Netherlands	0	0	24.4	0	5.35	15.01	291.51	10.05	458.0868467	0
United States of America	103.2	0	0	0	0	43.3	21.59	5.2	194	0
Brunei Darussalam	0	0	0.7	0	8.2	16.48	10.02	3.45	26	0
Philippines	0	0	0	0	0	0	0	0.87	34.24	0
Cambodia	0	0	0	0	0	0	0.07	0.34	46	0
Singapore	0.2	120	654.8	578.52	1562.6	1541.18	1859.86	1572.54	8487.467198	0
Germany	0.4	0	0	0	4.07	0.32	0.78	0.02	16.9388487	0
Lao People's Democratic Republic	0	0	0	0	0	0	0	0	0	0
Argentina	0	0	0	0	0	0	0	0	0	0
Brazil	0	0	0	0	0	0	0	0	0	0
Uruguay	0	0	0	0	0	0	0	0	0	0
Paraguay	0	0	0	0	0	0	0	0	0	0

Source: Investment Map; Direct Investment Coordinated Survey IMF

Trade Agreements and Trade Preferences between countries

BETWEEN		TRADE AGREEMENT OR PREFERENCE
PARAGUAY	ARGENTINA	1
PARAGUAY	BRAZIL	1
PARAGUAY	BRUNEI	0
PARAGUAY	CHINA	0
PARAGUAY	GERMANY	0
PARAGUAY	INDONESIA	0
PARAGUAY	JAPAN	1
PARAGUAY	CAMBODIA	0
PARAGUAY	KOREA, REPUBLIC	0
PARAGUAY	LAOS	0
PARAGUAY	MYANMAR	0
PARAGUAY	MALAYSIA	0
PARAGUAY	NETHERLANDS	0
PARAGUAY	PHILIPINES	0
PARAGUAY	SINGAPORE	0
PARAGUAY	THAILAND	0
PARAGUAY	URUGUAY	1
PARAGUAY	UNITED STATES	1
PARAGUAY	VIETNAM	0

BETWEEN		TRADE AGREEMENT OR PREFERENCE
BRAZIL	ARGENTINA	1
BRAZIL	BRUNEI	0
BRAZIL	CHINA	0
BRAZIL	GERMANY	0
BRAZIL	INDONESIA	0
BRAZIL	JAPAN	1
BRAZIL	CAMBODIA	0
BRAZIL	KOREA, REPUBLIC	0
BRAZIL	LAOS	0
BRAZIL	MYANMAR	0
BRAZIL	MALAYSIA	0
BRAZIL	NETHERLANDS	0
BRAZIL	PHILIPINES	0
BRAZIL	PARAGUAY	0
BRAZIL	SINGAPORE	0
BRAZIL	THAILAND	0
BRAZIL	URUGUAY	1
BRAZIL	UNITED STATES	1
BRAZIL	VIETNAM	0

BETWEEN		TRADE AGREEMENT OR PREFERENCE
ARGENTINA	BRAZIL	1
ARGENTINA	BRUNEI	0
ARGENTINA	CHINA	0
ARGENTINA	GERMANY	0
ARGENTINA	INDONESIA	0
ARGENTINA	JAPAN	1
ARGENTINA	CAMBODIA	0
ARGENTINA	KOREA, REPUBLIC	0
ARGENTINA	LAOS	0
ARGENTINA	MYANMAR	0
ARGENTINA	MALAYSIA	0
ARGENTINA	NETHERLANDS	0
ARGENTINA	PHILIPINES	0
ARGENTINA	PARAGUAY	1
ARGENTINA	SINGAPORE	0
ARGENTINA	THAILAND	0
ARGENTINA	URUGUAY	1
ARGENTINA	UNITED STATES	0
ARGENTINA	VIETNAM	0

BETWEEN		TRADE AGREEMENT OR PREFERENCE
URUGUAY	ARGENTINA	1
URUGUAY	BRAZIL	1
URUGUAY	BRUNEI	0
URUGUAY	CHINA	0
URUGUAY	GERMANY	0
URUGUAY	INDONESIA	0
URUGUAY	JAPAN	1
URUGUAY	CAMBODIA	0
URUGUAY	KOREA, REPUBLIC	0
URUGUAY	LAOS	0
URUGUAY	MYANMAR	0
URUGUAY	MALAYSIA	0
URUGUAY	NETHERLANDS	0
URUGUAY	PHILIPINES	0
URUGUAY	PARAGUAY	1
URUGUAY	SINGAPORE	0
URUGUAY	THAILAND	0
URUGUAY	UNITED STATES	1
URUGUAY	VIETNAM	0

BETWEEN		TRADE AGREEMENT OR PREFERENCE
EAST ASIAN	ARGENTINA	0
EAST ASIAN	BRAZIL	0
EAST ASIAN	BRUNEI	1
EAST ASIAN	CHINA	1
EAST ASIAN	GERMANY	0
EAST ASIAN	INDONESIA	1
EAST ASIAN	JAPAN	1
EAST ASIAN	CAMBODIA	1
EAST ASIAN	KOREA, REPUBLIC	1
EAST ASIAN	LAOS	1
EAST ASIAN	MYANMAR	1
EAST ASIAN	MALAYSIA	1
EAST ASIAN	NETHERLANDS	0
EAST ASIAN	PHILIPINES	1
EAST ASIAN	PARAGUAY	0
EAST ASIAN	SINGAPORE	1
EAST ASIAN	THAILAND	1
EAST ASIAN	UNITED STATES	1
EAST ASIAN	VIETNAM	1
EAST ASIAN	URUGUAY	0

BETWEEN		TRADE AGREEMENT OR PREFERENCE
S. KOREA	ARGENTINA	0
S. KOREA	BRAZIL	0
S. KOREA	BRUNEI	1
S. KOREA	CHINA	1
S. KOREA	GERMANY	1
S. KOREA	INDONESIA	1
S. KOREA	JAPAN	1
S. KOREA	CAMBODIA	1
S. KOREA	URUGUAY	0
S. KOREA	LAOS	1
S. KOREA	MYANMAR	1
S. KOREA	MALAYSIA	1
S. KOREA	NETHERLANDS	1
S. KOREA	PHILIPINES	1
S. KOREA	PARAGUAY	0
S. KOREA	SINGAPORE	1
S. KOREA	THAILAND	1
S. KOREA	UNITED STATES	1
S. KOREA	VIETNAM	1

BETWEEN		TRADE AGREEMENT OR PREFERENCE
JAPAN	ARGENTINA	1
JAPAN	BRAZIL	1
JAPAN	BRUNEI	1
JAPAN	CHINA	1
JAPAN	GERMANY	1
JAPAN	INDONESIA	1
JAPAN	KOREA	1
JAPAN	CAMBODIA	1
JAPAN	URUGUAY	0
JAPAN	LAOS	1
JAPAN	MYANMAR	1
JAPAN	MALAYSIA	1
JAPAN	NETHERLANDS	1
JAPAN	PHILIPINES	1
JAPAN	PARAGUAY	0
JAPAN	SINGAPORE	1
JAPAN	THAILAND	1
JAPAN	UNITED STATES	1
JAPAN	VIETNAM	1

BETWEEN		TRADE AGREEMENT OR PREFERENCE
CHINA	ARGENTINA	0
CHINA	BRAZIL	0
CHINA	BRUNEI	1
CHINA	KOREA	1
CHINA	GERMANY	0
CHINA	INDONESIA	1
CHINA	JAPAN	1
CHINA	CAMBODIA	1
CHINA	URUGUAY	0
CHINA	LAOS	1
CHINA	MYANMAR	1
CHINA	MALAYSIA	1
CHINA	NETHERLANDS	0
CHINA	PHILIPINES	1
CHINA	PARAGUAY	0
CHINA	SINGAPORE	1
CHINA	THAILAND	1
CHINA	UNITED STATES	1
CHINA	VIETNAM	1

BETWEEN		TRADE AGREEMENT OR PREFERENCE
GERMANY	ARGENTINA	0
GERMANY	BRAZIL	0
GERMANY	BRUNEI	1
GERMANY	KOREA	1
GERMANY	CHINA	1
GERMANY	INDONESIA	0
GERMANY	JAPAN	1
GERMANY	CAMBODIA	0
GERMANY	URUGUAY	0
GERMANY	LAOS	0
GERMANY	MYANMAR	0
GERMANY	MALAYSIA	0
GERMANY	NETHERLANDS	1
GERMANY	PHILIPINES	0
GERMANY	PARAGUAY	0
GERMANY	SINGAPORE	1
GERMANY	THAILAND	0
GERMANY	UNITED STATES	0
GERMANY	VIETNAM	1

BETWEEN		TRADE AGREEMENT OR PREFERENCE
USA	ARGENTINA	0
USA	BRAZIL	0
USA	BRUNEI	0
USA	KOREA	1
USA	GERMANY	0
USA	INDONESIA	0
USA	JAPAN	0
USA	CAMBODIA	0
USA	URUGUAY	0
USA	LAOS	0
USA	MYANMAR	0
USA	MALAYSIA	0
USA	NETHERLANDS	0
USA	PHILIPINES	0
USA	PARAGUAY	1
USA	SINGAPORE	1
USA	THAILAND	0
USA	CHINA	1
USA	VIETNAM	0

BETWEEN		TRADE AGREEMENT OR PREFERENCE
NETHERLANDS	ARGENTINA	0
NETHERLANDS	BRAZIL	0
NETHERLANDS	BRUNEI	1
NETHERLANDS	KOREA	1
NETHERLANDS	GERMANY	1
NETHERLANDS	INDONESIA	0
NETHERLANDS	JAPAN	1
NETHERLANDS	CAMBODIA	0
NETHERLANDS	URUGUAY	0
NETHERLANDS	LAOS	0
NETHERLANDS	MYANMAR	0
NETHERLANDS	MALAYSIA	0
NETHERLANDS	CHINA	1
NETHERLANDS	PHILIPINES	0
NETHERLANDS	PARAGUAY	0
NETHERLANDS	SINGAPORE	1
NETHERLANDS	THAILAND	0
NETHERLANDS	UNITED STATES	0
NETHERLANDS	VIETNAM	1

Sources: US International Trade Administration, Foreign Trade Information Systems-UN, ASEAN, MERCOSUR, European Union

Landlock

COUNTRY	LANDLOCKED
PARAGUAY	1
ARGENTINA	0
BRAZIL	0
BRUNEI	0
CHINA	0
GERMANY	0
INDONESIA	0
JAPAN	0
CAMBODIA	0
KOREA, REPUBLIC	0
LAOS	1
MYANMAR	0
MALAYSIA	0
NETHERLANDS	0
PHILIPINES	0
SINGAPORE	0
THAILAND	0
URUGUAY	0
UNITED STATES	0
VIETNAM	0

Source: List of Landlocked Developing Countries, UNCTAD

국문초록

주요 무역 상대국 및 아시아 국가들과의 MERCOSUR 무역 패턴 결정요인

- 다국적 중력모델 분석 -

Maria Emilia Alvarez Lezcano

서울대학교 행정대학원

글로벌행정전공

본 연구는 스페인어로 된 약자인 메르코수르(MERCOSUR), 남부 공동시장 회원국 간의 다국적 중력 분석에 초점을 맞췄으며 주요 교역 상대국인 파라과이, 브라질, 아르헨티나, 우루과이는 물론 동남아국가연합(ASEAN아세안)의 10개 회원국과 한국, 일본, 중국 등 아시아 국가들 간의 무역 흐름의 결정요인과 무역 잠재력을 연구하고자 한다.

논문의 첫 두 장에는 배경, 연구의 목적, 연구의 중요성에 대한 정보가 포함되어 있으며, 연구 대상 국가들의 무역 성과에 대한 이론적 틀과 개요를 제공한다. 끄마지막 두 장은 다중력 모델을 통한 방법론과 적용된 경험적 분석에 중점을 둔다.

2011년부터 2020년까지 10년 동안 총 20개 선택된 국가의 패널 데이터를 사용하여 SAS의 학술 소프트웨어 온 디맨드 모델을 적용했다. 마지막 장에서는 연구 결과와 결론을 요약하였다.

주요 키워드: 국제 무역, MERCOSUR, 중력 모델, 아시아 국가, 라틴 아메리카

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