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A comprehensive short and long-run assessment on the impact of the EU-Mercosur agreement on Brazil

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Abstract

After 20 years of negotiations, the European Union (EU27) and Mercosur (made up of Argentina, Brazil, Paraguay, and Uruguay) signed an "Association Agreement" that not only liberalizes trade in goods and services, but also expands into other aspects such as sustainability and respect for human rights. Thanks to its scope and the market size of its member economies, it is one of the largest trade agreements in the world.

As far as trade in goods is concerned, the EU27 undertakes to liberalize 92% of imports coming from Mercosur over a period of up to 10 years. Concerning Mercosur members, they commit themselves to liberalize 91% of imports coming from the EU over a period of up to 15 years. Regarding services, the agreement comprises all modes of supply, including the liberalization of investment (establishment) both in the services sector and in other sectors. It also embodies the elimination of unnecessary technical barriers to trade (TBTs). The latter leads to creating a framework within which technical regulations and standards can converge.

The EU27 (without the UK) is the second largest economy in the world. It contributed 18% of the world's GDP in 2019, while Mercosur accounted for 3% of the world's GDP in the same year. Within Mercosur, Brazil represents approximately 77% of the economic bloc's entire GDP, and its contribution to world GDP is 2.1% in 2019 (The World Bank, 2020), therefore, the impact of the agreement on this country may help to understand how Mercosur will react.

Previous work that was published within a very short time frame has addressed the impact of the agreement using general equilibrium models LSE (2018, 2020) and Carrico et al., (2020), and gravity equations Timini and Viani (2020) and Sinabell, Grübler and Reiter (2020).

This work differs from those previously mentioned because the information used to extract the data corresponds to the agreement signed by both economic blocs, in line with the analyses of Latorre et al. (2021a, 2021b) and Suárez and Latorre (2021). Thus, the data to be used for this model come from different sources, the most important of which corresponds to the trade flows of the 8-digits Harmonized Systems (HS) codes. Tariff reductions (i.e., as stated in the Annex on goods of the trade agreement) have been negotiated using this nomenclature. This offer, which was originally negotiated in a version of the HS in 2012 (H4), has been brought up to the 2017 version (H5) currently in force, considering the different years of adoption in each region.

Our CGE model has 36 sectors (26 goods and 10 services sectors), which are bases on the 65 sectors of GTAP 10. The latter have been grouped and renamed to simplify the results. We were merged related sectors, as well as sectors with little trade flows.

Some primary products of the European Union and Mercosur supply are considered sensitive, such as: corn, rice, sugar, beef, poultry, honey, powdered milk, cheese, vehicles, etc. Thus, the agreement establishes quotas on them with a certain level of tariff liberation and in a certain period, and once these quantities are exceeded, the most favored nation tariffs in force at the time of import are applied.

In line with the above, the tariff reduction of these sensitive products was estimated considering not only the quantities fixed in the agreement, but also those fixed much earlier by the European Union itself in the case of imports coming from Mercosur, which in turn are part of the quotas authorized within the framework of the World Trade Organization.

We have included data on non-tariff measures for goods and services, which are crucial to grasp the impact of trade agreements. For the goods sectors, we have used the latest available information on "non-tariff measures" estimated by the World Bank (2019), which are presented in the form of an Ad Valorem Equivalent (AVE). For the "services measures", estimates by OECD researchers (Benz and Jaax, 2020) have been taken for the GTAP sectors of communication, business services, financial services, insurance, and transport, both for Brazil and the European Union. For the hotels and restaurants sector, estimates are taken from (Fontagné et al., 2016) since they were not covered by Benz and Jaax (2020).

We employ a Computable General Equilibrium (CGE) methodology, namely, the static and dynamic setting of the Global Trade Analysis Project (GTAP) (Hertel and Tsigas, 1997; Corong et al., 2017; Aguiar et al., 2019a), using GEMPACK (General Equilibrium Modelling Package) software. The combination of both the static and the dynamic model allows to estimate the effect of the agreement in the short and long run. It also offers a way to explore the potential effects of capital flows related to the agreement (Ortiz-Valverde and Latorre, 2020). Moreover, it allows to better estimate the subsequent reduction in tariffs and the evolution of quotas, which are further liberalized as the years pass by. Dynamic estimations also constitute a novelty in the analysis of this agreement since most studies have focused on the outcomes after the agreement is fully implemented.

Our model has 9 regions (EU, Argentina, Brazil, Paraguay, Uruguay, US, Canada, China, Row) and 4 factors of production (land, labor, capital and natural resources).We provide a very detailed and updated view of the impact of the trade agreement, since many of the data used for our simulations have been obtained from the texts of the agreement itself, particularly the ones related to tariff reductions and quotas sensitive products for both economic blocs. However, we also pay attention to other aspects of the agreement that has received little attention in the literature, such as, the impact of public procurement openness that has been negotiated.

Introduction

On 28 June 2019, the European Union (EU) and Mercosur (Argentina, Brazil, Paraguay and Uruguay) signed a strategic partnership agreement after 20 years of negotiations. This agreement, which includes commitments on trade in goods, services, public procurement, facilitation, investment, cooperation, political and economic dialogue, among others, covers a market of approximately 800 million consumers who will be able to opt for better goods and services.

The European Union has exclusive competence for trade policy for the 27 member states, which allows it to assume a unique position and manage trade agreements with third countries in which the values of the EU are impregnated, which go far beyond aspects related to trade. In this way, aspects such as the protection of human rights and the environment play an important role within these agreements, which seek to increase the welfare of the citizens of both blocs. Thus, the trade agreement reached with the Mercosur countries (Argentina, Brazil, Paraguay and Uruguay) is one of the so-called "Association Agreements", which have a much broader commercial and political scope than traditional trade agreements.

For Mercosur, this agreement represents the biggest event in terms of trade, sustainability, food security, intellectual property, opening of the internal market, etc., that it has achieved in the 30 years of the bloc's history. Brazil, for its part, is the member state with the greatest weight in terms of GDP, population, territory and goods and services industries. According to a study conducted in pre-Covid-19 times by the firm (Price Water house Coopers, 2017), in 2030 Brazil will rank 8th in terms of GDP measured by Purchasing Power Parity (PPP) and will reach 5th place in 2050 on the same indicator. This is because Brazil is undergoing constant improvements in its institutional framework, which would allow technological progress to take off in the long term, as well as attract foreign direct investment (FDI) from advanced economies. Thus, analyzing the impact of the agreement in Brazil is a complex task due to the country's intrinsic characteristics, but the results would reflect a gain or loss for the Mercosur bloc.

This document will be structured as follows. A literature review in which we will cite previous studies like the one proposed and their results for comparison; the most relevant points of the trade agreement reached; a static and a dynamic model, as well as a detail of the meticulous work that has been done with the data; the interpretation of the results of the static and dynamic model and the role they play in the overall economy of Brazil.

1. Literature review

This paper has taken as a basis for analysis the studies of four studies by several authors in a very close time period. Two of them correspond to computable general equilibrium models and the other two to gravity equation models.

LSE (2018, 2020) was the first of its kind to analyze comprehensively through a dynamic recursive CGE model before its signature on June 28, 2019, therefore, this study does not include the tariff lines of goods negotiated in the agreement (Annex I of the

FTA) as it was approved after the first version of this 2018 study and does not appear to have been updated in the 2020 version.

Carrico et al. (2020) also uses a CGE model with a single scenario, in which they have considered the outcomes of the negotiation of the agreement (Annex I of the FTA).

Timini and Viani (2020) use a gravity equation that is part of the so-called New Quantitative Trade Models (NQTMs). They run a single general scenario that does not show sectoral details, and whose elaboration does not consider the detail of the goods negotiated in the agreement, but rather past agreements and events that affected trade.

Sinabell, Grübler and Reiter (2020) use a one-scenario gravity equation model, which shows information at the macroeconomic level, and not at the sectoral level, and does not show updated information on the products negotiated in the agreement.

2. On the agreement in principle

The main benefit of the trade agreement is the complete and linear elimination (except for passenger vehicles and some agricultural products) of customs duties on goods.

In Mercosur, the liberalization of tariffs on EU imports of automobiles and their parts, machinery, chemical products, pharmacological products, clothing, footwear, among others, represents an opportunity for EU companies that will benefit from access to a previously restricted market.

The EU will liberalize 82% of agricultural imports, while the remainder will be subject to partial liberalization commitments including quotas for sensitive products, offering opportunities for Mercosur farmers to trade raw materials such as soybeans and ethanol to EU industries. For its part, Mercosur will liberalize products of interest to EU exporters such as wine, spirits, olive oil, malt, frozen potatoes, chocolates, among others.

In Mercosur countries, 355 traditional EU products, including foodstuffs, wines and spirits, will be protected against imitation through geographical indications (GIs), thus protecting the use of trade names that are not original, as well as the misleading use of images that suggest a wrong geographical origin. Similarly, the EU will protect 220 Mercosur geographical indications (GIs).

Customs procedures will be simplified in order to be modern and automated, reinforcing collaboration on standards and technical regulations. In this regard, it was agreed that Technical Barriers to Trade (TBT), which are largely part of border customs control, will go beyond WTO rules on the use of international standards on which national technical regulations should be based, thus creating a framework for regulatory convergence in the future.

In Services and Establishments, the agreement extends to the four modes of services: Mode 1 - Cross Border Trade; Mode 2 - Consumption Abroad; Mode 3 - Commercial Presence and Mode 4 - Presence of Natural Persons, covering as noted the liberalization of investment (establishment) or Mode 3, in both the goods and services sectors. Thus, the trade agreement provides opportunities especially for EU companies to be able to

compete on equal terms with Mercosur's own service providers, emphasizing that this possibility to compete is only available to the EU thanks to the trade agreement reached.

Public procurement is one of the most important milestones that has been reached in the trade agreement. It will open this previously completely closed market available only to local suppliers. EU companies will be allowed to bid for and win public contracts in both the goods and services sectors, including construction, at central or federal or sub-central level. In the case of Brazil, entities at the central or federal level include government and federal agencies such as ministries, the judiciary and the legislature, while sub-central entities include state, provincial or municipal entities. According to the agreement, the objective is to open the sub-central entities two years after entry into force, so that EU companies can participate in these tenders.

For its part, the EU will reciprocate with Mercosur companies by allowing them to bid for public contracts at central and sub-central levels in EU states.

The agreement recognizes the difference between SMEs and large companies. For the agreement to be used by a greater number of companies, it is necessary to recognize the difference in resources between the two and the difficulty that the former would have in reaching an international market in a better way, mainly due to the lack of information. Thus, the agreement provides for the parties to make available to all company's relevant information on market access through a website for consulting tariffs, rates, rules of origin and import requirements for each product.

3. Model and data

We use a Computable General Equilibrium (CGE) methodology, which simulates the macroeconomic behavior of an economy through the interaction of the microeconomic activities. With a CGE model, we can estimate the overall effect of a shock for one or many variables in the real economy. Our model has 36 sectors, 9 regions (EU, Brazil, Argentina,Uruguay,Paraguay, US, Canada, China, Row) and 4 factors of production (land, labor, capital, natural resources).

The 36 sectors mentioned are composed of 26 goods sectors and 10 services sectors, and are based on the 65 sectors of GTAP 10, which have been grouped and renamed in order to simplify the results. We here merged related sectors, as well as sectors with little trade flow, see Table 1.

In this paper, we use both the static and dynamic setting of the Global Trade Analysis Project (GTAP) (Hertel and Tsigas, 1997; Corong at al., 2017; Aguiar et al., 2019a), based on GEMPACK (General Equilibrium Modelling Package) software. The use of both the static and the dynamic model allows to estimate the effect of the agreement in the short and long run.

The static model reflects how each economy's equilibrium moves from one equilibrium point to another. It is suitable to estimate the impact of a shock in the short run. By contrast, the dynamic setting allows simulating the impact of the agreement on a year-by-year basis, once the agreement comes into force. Hence, with the dynamic model we simulate the influence of the progressive tariff relief on trade.

To estimate the impact in the long-term of the FTA between Mercosur and the EU27 in Brazil, we simulate each scenario against a baseline scenario in which this FTA is not in force. The baseline projection is obtained by simulating the model forward from the 2014 base year of the dataset to 2038. It includes updates in GDP, GDP per capita, population, and labor force. These updates correspond to the second path of socioeconomic development (SSP2)[1] derived from the Shared Socioeconomic Pathways Database developed by the International Institute for Applied Systems Analysis (IIASA).

We also update the values of tariffs from the GTAP database, using the latest data available for the year 2019 from International Trade Centre (ITC) source.

The data to be used for this model come from different sources, the most important of which corresponds to the trade flows of the 8-digits Harmonized Systems (HS) codes. Tariff reductions (i.e., as stated in the Annex on goods of the trade agreement) have been negotiated using this nomenclature. This offer, which was originally negotiated in a version of the HS in 2012 (H4), has been brought up to the 2017 version (H5) currently in force, considering the different years of adoption in each region, so that the HS codes are related to the trade and tariff information associated with them.

For the correlation between versions of the European Union offer, the website of Eurostat (2020) was consulted and, for Brazil, the website of the Brazilian Ministry of Economy (2020), where the respective tables of correponden were found.

The trade flows (value and tons) were extracted from ITC-Trademap (2020) in the period 2017 – 2019 from the point of view of the importer of each party. The data expressed in monetary units were downloaded at the 8-digits level of the HS and the tones at the 6-digits level of the HS. The latter information was necessary for estimating quotas for goods of a sensitive nature. For tariff information, the *Ad-Valorem Equivalent* (AVE) expressed as a percentage was taken, which corresponds to the Most Favored Nation (MFN) tariff applied in countries where there is no trade agreement. (…)

The information in Harmonized System codes were converted to the sectors in the GTAP database (Aguiar et al., 2019b), using the correspondence files provided by the GTAP website (2020). This conversion groups several HS codes together, so that the MFN tariff applied to each GTAP sector corresponds to those goods that have a greater weight in total trade within that sector. With this information and knowing the tariff regime that was negotiated, it was possible to estimate the reduction in percentages for each year after the entry into force of the agreement. The European Union negotiated to eliminate a large part of its tariffs over a maximum period of 10 years and Mercosur over a maximum period of 15 years.

Regarding ***"non-tariff measures"***, The WTO (2012) report indicates that they are all policy measures other than tariffs that can affect trade in goods.

The UNCTAD (2017a) report notes that "non-tariff measures" can be of two kinds: I) non-tariff barriers (NTBs) such as quotas, price controls, non-automatic licensing, intellectual property, rules of origin, among others, the objective of this agreement is

[1] According to IIASA (2018) the SSP2 assumes an extension of the current trends in urbanization in all parts of the world, along with similar middle of the road assumptions about population growth, technological change, and economic growth.

reduce or eliminate “non-technical measures”, and II) sanitary and phytosanitary measures (SPS) and technical barriers to trade (TBT) related to the protection of human, animal, plant and environmental health, also known as "technical measures". SPS measure cannot be eliminated but can instead converge to a common regulation that reduces the costs and time of these measures.

Although these measures are currently intended to comply with legitimate public policy objectives, it is also true that there are gaps and mystery in their creation and subsequent administration. Thus, they can also create adverse effects on trade, such as increasing the price of a good or service that would prevent access to a market. Hence transparency and regulatory convergence mainly in the so-called SPS/TBT "technical measures" becomes important in the global trade scenario.

The "Agreement in Principle", a document summarizing the results of the negotiation of the Association Agreement between the European Union (EU) and Mercosur, details commitments made to apply modern procedures to facilitate trade, many of them related to the reduction of "non-tariff measures" and "services measures", a simplification of administrative procedures for European exporters in the SPS, a convergence on international technical regulations and standards (TBT) for Mercosur countries, which go beyond WTO rules. This showed will produce a decrease in adaptation costs, According to Disdier et al., (2013) and Piertamini and Budetta. (2009), who recognize that the adoption of international standards has beneficial trade effects.

On the other hand, for "non-technical measures", non-automatic import or export licenses are prohibited, except for those necessary to implement certain measures of the agreement, and certification of the exporter's origin is introduced. About services, the provisions of the WTO's General Agreement on Trade in Services (GATS) concerning "national treatment" are incorporated, which implies equal treatment for the trading partner. The four modes of services are opened (with certain exceptions) in some sectors such as postal services, telecommunications, financial services, electronic commerce and maritime services, making it possible to eliminate discriminatory and unnecessary barriers in both the services and manufacturing sectors.

How do we estimate NTMs in the proposed model? For the goods sectors, we have used the latest available information on "non-tariff measures" estimated by the World Bank (2019)- These are presented in the form of an Ad Valorem Equivalent (AVE), which, when expressed in percentages, has an interpretation equal to a tariff measure. Based on the commitments made in the agreement, which also include the so-called "dialogue forums" that seek to strengthen mutual trust and cooperation between the parties, it is expected that there will be political will to make progress in the reduction of TBT and convergence of the SPS. For all these reasons, the simulations have incorporated reductions of non-tariff measures of the "non-technical" (…). On the EU side, "non-technical" measures could be reduced (…)

For the "services measures", estimates by OECD researchers (Benz and Jaax, 2020) have been taken for the GTAP sectors of communication, business services, financial services, insurance and transport, both for Brazil and the European Union. For the hotels and restaurants sector, estimates are taken from (Fontagné et al., 2016). It can be observed that "services measures" are higher than "non-tariff measures" for goods, this is due to the little progress in services liberalization at the global level. These reduction

percentages respond to a reference consulted in the work of Benz and Jaax (2020, p. 25) in which they compare the average AVE of the "services measures" of the countries that form the European Economic Area (EEA) with the average AVE of the same measures of countries that do not have an agreement on trade in services. The difference between these two groups is approximately 80% and 90%, however, to be conservative in our analysis we have assumed approximately (…) of this reduction. It should be noted that the simulated reductions are derived from the chapters containing the services supply side of the agreement, i.e., Mode 1 - Cross Border Trade.

With regard to ***"public procurement"***, the "Agreement in Principle" foresees making it easier for European companies to submit bids and win contracts. In the first instance with Brazil's federal agencies including ministries, the judiciary and the legislature, and will eventually be extended to contracts with sub-central entities made up of state, provincial and municipal bodies. This marks a historic milestone in this field, as it is the first time that Mercosur countries, especially Brazil, have opened their domestic market to foreign companies. On the part of Brazilian companies in the European Union market, the commitment made is the same: access to competition will first be allowed in the central bodies of the EU and central governments of each member state and will eventually be extended to a sub-central level.

It is important to point out that both the services and public procurement offers detailed in this document have a certain complexity in their interpretation, which is not as intuitive as it is for goods. Positive lists mention sectors and sub-sectors in which the trading partner assumes certain commitments, while negative lists mention exceptions to the opening of sectors and sub-sectors, so that everything that is not included in these lists is considered open (European Commission, n.d.). Positive lists have been used for the supply of services, and for public procurement a combination of positive and negative lists.

The next step was to map what was negotiated in these lists to the GTAP codes. For this task, correspondence files were used to map the codes of the lists in the Central Products Classification (CPC) and International Standard Industrial Classification (ISIC) to the activities of the GTAP service sectors (2019). A preliminary step to this task was to update the CPC and ISIC codes to the most recent version (United Nations, 2015).

The possibility of opening this market to national governments and, after a while, to state, local and municipal governments, has led to the need to consider a reduction and simulation in two stages for the dynamic model.

That is, between years 1 and 5 of the entry into force of the agreement, a reduction of "non-tariff measures" related to public procurement of (…) for Brazil and (…) for years 11 and 16 of the agreement will be considered. For the European Union, a (…) reduction has been considered for years 1 and 5 of the entry into force of the agreement and (…) for years 11 and 16.

The static model will consider (…) for both parties.

4. Results

4.1.Short-Term

4.1.1. Macroeconomics results

We place this impact in the year 16, that is, after 15 years of application of the Trade Agreement. This year coincides with the total liberalization of tariffs negotiated on the Mercosur side, specifically Brazil in our analysis. This trade liberalization corresponds to trade in goods, services, and the opening of public procurement, the latter of which was closed to foreign companies (outside Mercosur).

The results are shown for macroeconomic variables such as GDP, private consumption, aggregate imports and exports, wages, return on capital and the consumer price index (CPI). The variables are expressed in "real terms". And their variations are produced by the force alone that the trade agreement would generate when it enters into force (ceteris paribus).

The results of the static and dynamic modelling contain all the components of the final agreement reached, i.e., the information on which the tariff and non-tariff reductions in goods and services have been calculated are based on the chapter listings of the agreement signed on 28 June 2019 (European Commission, 2019). Thus, this exercise will focus on the impact of three elements: 1) tariffs and quotas (referred to as "tariffs"), 2) non-tariff measures on trade in goods and services (referred to as "NTMs"), and 3) public procurement (referred to as "PP").

4.1.2. Sectoral results

(…)

4.2.Long-Term

With the dynamic model, we simulate a gradual reduction in barriers to trade over 10 years in the EU and 16 years in the Mercosur countries. As we mentioned, the EU has negotiated to eliminate a large part of its tariffs over a maximum period of 10 years, while Mercosur agreed to reduce its tariffs over a maximum period of 16 years. Results from the dynamic model in this section will show the cumulative impact of the FTA, i.e., the difference with the BAU in 2038.

4.2.1. Macroeconomic results

(...)

4.2.2. Sectoral results

(...)

5. Conclusions

(...)

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Tables

Table (…). Clusters of GTAP sectors used in the model

Sectors	No.	Code	Description	GTAP 10 - Sectors
Goods	1	CER	Cereals	1, 2, 3, 5, 23
	2	V_F	Vegetables, fruits, nuts	4
	3	SGR	Sugar	6, 24
	4	OCR	Plant & animal fiber, others	7, 8, 12, 14
	5	CMT	Bovine and other rumiant meats	9, 19
	6	OAP	Other animal products	10
	7	MIL	Dairy products	11, 22
	8	FRS	Forestry	13
	9	GAS	Gas, coal, oil extraction or distribution	15, 16, 17, 18, 47
	10	OMT	Live animals, meat and animal products	20
	11	VOL	Vegetable oils and fats	21
	12	OFD	Food products nec	25
	13	B_T	Beverages and tobacco products	26
	14	TEX	Textiles	27
	15	WAP	Wearing apparel	28
	16	LEA	Leather products	29
	17	L_P	Wood products	30, 31
	18	PCH	Petroleum, coal and other chemical products	32, 33
	19	BPH	Pharmaceutical products	34
	20	RPP	Rubber and plastic products	35
	21	MMP	Metals and metal products	37, 38, 39
	22	ELQ	Electronic products	40
	23	OMA	Other machinery	41, 42
	24	MVH	Motor vehicles and parts	43
	25	OTN	Transport equipment	44
	26	OMF	Other manufactures	36, 45
Services	27	CNS	Construction	49
	28	WTP	Maritime transport	53
	29	ATP	Air transport	54
	30	CMN	Communication	56
	31	OFI	Banking	57
	32	INS	Insurance	58
	33	AFS	Hotels and restaurants	51
	34	OBR	Business Services	59, 60
	35	ROS	Personal services	61
	36	OSE	Other services	48, 50, 52, 55, 62, 63, 64, 65

Source: GTAP 10
Elaboration: by the authors
Sector “46 ELY – Electricity” of GTAP 10 not shown because data not available