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A Computable General Equilibrium Model (CGE) assessment of the short and long-run impact on Brazil of the European Union – Mercosur Trade Agreement

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MERCOSUR

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1. Introduction

- On June 2019, the European Union (EU) and Mercosur (Argentina, Brazil, Paraguay and Uruguay) signed a strategic partnership agreement after 20 years of negotiations.

- The EU undertakes to liberalize 92% of imports from Mercosur over a period of up to 10 years.

- Mercosur undertakes to liberalize 91% of imports from the EU over a period of up to 15 years.

- This analysis will focus exclusively on the impact of the agreement on Brazil. This represents approximately ¾ of Mercosur's GDP, so the impact on this member state would largely affect the rest of the trade block.

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2. Model and data

- Computable General Equilibrium (CGE)
- Static and Recursive dynamic setting of the Global Trade Analysis Project (GTAP).
- GTAP 10 Data base (36 sectors, 9 regiones, 4 factors)
- 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.
- The tariff reduction was estimated in accordance with the supply of goods (Annex I of the FTA).
- Updated trade data from ITC-Trademap and Most Favored Nation (MFN) tariffs from ITC-Macmap were used to estimate the tariff reduction.
- The information on the supply of goods was negotiated in the Harmonized System nomenclature and were converted to the sectors in the GTAP database, using the correspondence files provided by the GTAP website (2020).
- Regarding “non-tariff measures”.
  - For the “goods sectors”, we have used the information estimated by the World Bank (2019).
  - For the "services measures", estimates by OECD researchers (Benz and Jaax, 2020) and (Fontagné et al., 2016) were used.
- Regarding public procurement, a drop in the non-tariff measure of 4% was estimated as negotiated in the agreement.

3. Data presentation

3.1. Outcomes on the Short-Term (Static Model)

Total

Regions	GDP	Private Expenditure	Aggregated Exports	Aggregated Imports	Wages	Capital remuneration	CPI
EU 27	0,054	0,122	0,269	0,494	0,461	0,457	-0,009
Brazil	0,343	0,433	5,551	10,623	0,424	0,482	1,214
Argentina	0,52	0,649	1,575	5,352			0,606
Uruguay	1,413	2,763	-6,807	9,262			4,456
Paraguay	0,59	1,184	-0,982	2,463			0,112
Canada	-0,003	-0,021	0,102	-0,097			-0,076
United States	-0,001	-0,017	0,158	-0,255	-0,148	-0,137	-0,106
China	-0,017	-0,044	0,085	-0,316			-0,098
Row	-0,002	-0,026	0,032	-0,174			-0,073

- The benefits of the agreement for both parties are clear.
- Variables such as GDP, aggregate exports and imports will have a greater impact on Brazil.
- Private expenditure, which is a measure of the welfare of the population, has a positive impact on both sides, especially in Brazil.
- Wages and capital reumeration have a similar positive impact in Brazil and EU 27.

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3. Data presentation

3.1. Outcomes on the Short-Term (Static Model)

Table 11. Impact on production, exports and imports by sector in the EU 27 and Brazil under the Static Model (percentage change)

			Production		Exports		Imports	
No.	Sector Code	Sector Description	EU 27	Brazil	EU 27	Brazil	EU 27	Brazil
1	CER	Cereals	-2,403	2,184	-2,647	1,958	-0,090	2,206
2	V_F	Vegetables, fruits, nuts	-0,433	1,065	-0,402	12,891	-0,018	6,855
3	SGR	Sugar	-0,676	-0,161	-1,069	0,022	0,153	17,695
4	OCR	Plant & animal fiber, others	-0,674	1,446	-0,779	4,676	0,211	5,595
5	CMT	Bovine and other ruminant meats	-4,314	4,674	-11,426	28,926	7,193	1,947
6	OAP	Other animal products	-1,107	4,326	-0,667	-3,947	-1,162	5,781
7	MIL	Dairy products	-0,097	-0,564	-0,067	4,149	0,099	32,200
8	FRS	Forestry	-0,136	-0,294	-0,501	-0,036	0,255	9,358
9	GAS	Gas, coal, oil extraction or distribution	-0,536	0,327	-1,122	1,662	0,027	1,136
10	OMT	Live animals, meat and animal products	-1,660	7,953	-3,280	20,293	3,248	119,054
11	VOL	Vegetable oils and fats	-3,759	5,227	-3,963	24,951	1,592	39,703
12	OFD	Food products nec	-0,404	1,831	-0,385	26,586	0,421	12,977
13	B_T	Beverages and tobacco products	0,006	0,030	0,041	4,889	0,276	22,232
14	TEX	Textiles	2,165	-7,633	4,694	-9,510	0,997	27,873
15	WAP	Wearing apparel	0,994	-4,098	1,664	15,293	0,449	46,663
16	LEA	Leather products	-1,830	3,258	-2,034	14,841	0,064	3,604
17	L_P	Wood products	-0,119	-0,918	-0,150	1,336	0,253	25,925

3. Data presentation

3.2. Outcomes on the Long-Term

Table 12. Macroeconomic Results under the Dynamic Model

Regions	GDP	Private Expenditure	Aggregated Exports	Aggregated Imports	Wages	Capital Remuneration	CPI
EU 27	0.04	-0.06	0.67	0.37	-0.35	-0.30	-0.47
Brazil	1.28	1.81	5.32	11.02	6.73	4.83	4.57
Argentina	1.28	1.84	3.43	9.76	6.99	5.33	4.98
Uruguay	5.56	7.76	-7.04	17.33	16.99	11.63	9.47
Paraguay	1.32	3.09	-1.94	4.35	8.35	5.48	4.01
Canada	-0.01	-0.01	0.11	-0.05	-0.23	-0.17	-0.20
United States	-0.01	0.01	0.00	-0.03	-0.18	-0.13	-0.17
China	-0.08	-0.11	0.04	-0.32	-0.38	-0.24	-0.23
Row	-0.06	-0.06	0.00	-0.17	-0.30	-0.21	-0.21

Source: Authors' estimation

3. Data presentation

3.2. Outcomes on the Long-Term

Table 13. Impact on production, aggregated exports, and imports by sector in the EU and Brazil with the Dynamic Model (percentage change)

No.	Code	Sector Description	Production		Exports		Imports	
			EU 27	Brazil	EU 27	Brazil	EU 27	Brazil
1	CER	Cereals	-4.07	-3.42	-3.35	-9.87	-4.31	7.22
2	V_F	Vegetables, fruits, nuts	-0.51	2.30	-0.27	33.52	-0.16	6.00
3	SGR	Sugar	-1.26	-3.09	-0.79	-14.43	-0.45	16.27
4	OCR	Plant & animal fiber, others	-3.56	13.56	-4.54	39.85	3.29	20.45
5	CMT	Bovine and other rumiant meats	-0.40	-1.69	1.24	-18.39	-0.80	20.62
6	OAP	Other animal products	-2.17	4.37	-0.60	-8.26	-2.46	8.92
7	MIL	Dairy products	0.39	0.32	1.69	-5.01	0.29	28.10
8	FRS	Forestry	-0.12	1.51	0.23	-9.57	-0.30	16.95
9	GAS	Gas, coal, oil extraction or distribution	0.33	-4.71	0.92	-6.83	0.70	7.65
10	OMT	Live animals, meat and animal products	-3.63	7.97	-5.35	20.71	4.24	85.46
11	VOL	Vegetable oils and fats	-12.27	14.22	-13.27	59.68	8.87	32.54
12	OFD	Food products nec	-0.08	2.54	0.74	40.27	0.30	14.22
13	B_T	Beverages and tobaccco products	-0.01	2.39	0.19	27.40	1.32	10.29
14	TEX	Textiles	-0.14	2.78	0.44	234.21	0.92	17.55

4. Conclusions

- \- For Mercosur, the agreement represents a great opportunity to achieve international and European standards in the trade of goods and services besides the positive impact in terms of GDP and sectoral production.

- \- For the EU 27, although the FTA does not provide as significant a benefit as it does for Mercosur members. This agreement consolidates the EU as the largest promoter of free trade in the world.

- \- In Brazil, sectors such as live animals, meat and animal products, and vegetable oils and fats will be benefited from the trade agreement.

- Results form the recursive dynamic model are preliminary.

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Thank you