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The Impact of Trade Liberalization between the European Union and Mercosur on the EU Sugar Sector

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Abstract:

Purpose: *The aim of this article is to examine the potential impact of this quota on the EU sugar market. To characterize the supply-demand and price situation, the study used the variability index and coefficient of variation, while price relationships were analyzed using Pearson's r correlation and linear regression with the OLS method.*
Methodology: *The study covers the period 2018–2024. In the case of supply–demand relations, the analysis was conducted using the marketing year (season) specific to the sugar market (October/September). The analysis of supply–demand and price relations was carried out using a volatility index. This approach enables a comparative identification of dominant tendencies and the indication of key differentiations.*
Results: *The criteria of self-sufficiency and export propensity were also applied. The study showed that although both the EU and Mercosur generated production surpluses, the sugar sector exhibited different trends during the period under review. The EU sector experienced a decline in production, while Mercosur saw dynamic growth in production and exports.*
Practical significance: *In trade liberalization agreements, sugar is often classified as a sensitive product, highlighting its significance. The EU–Mercosur agreement provides for a small duty-free import quota for sugar from Mercosur, which raises concerns among EU sugar producers.*
Originality: *The relatively small import quota for Mercosur is unlikely to affect the supply-demand and price situation in the EU; however, given the EU sector's self-sufficiency, even small quantities of imports can have a significant impact (as illustrated by the case of Ukraine).*

Keywords: *UE-Mercosur trade deal, sugar, trade liberalization.*

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1. Introduction

After the Second World War, the dominant tendency in international trade relations was liberalization. The reduction of various types of barriers, such as tariffs and quotas, was intended to stimulate production and economic growth, as well as to improve consumer access to goods at lower prices. These benefits were expected to offset potential risks, such as increased dependence on imports or rising unemployment in industries that were globally uncompetitive.

In practice, however, many products were granted the status of sensitive goods and were excluded from liberalization, either permanently or temporarily. One such product is sugar. The trade liberalization agreement between the EU and Mercosur has provoked considerable debate and has been widely criticized by the majority of European agricultural and sectoral organizations.

Within this framework, sugar is subject to special treatment as a so-called sensitive product. This commodity is of strategic importance for both blocs, as both the EU and Mercosur (primarily Brazil) are major producers and exporters. Nevertheless, the structural characteristics of the sugar sector differ substantially between the two blocs. In this context, it becomes particularly relevant from a research perspective to investigate the impact of trade liberalization in the sugar sector between the EU and Mercosur.

The findings will have both theoretical value, by broadening the understanding of the sectoral effects of trade liberalization, and practical implications, enabling policymakers to assess potential outcomes and facilitate the adjustment of the industry to the new market conditions.

2. Literature Review

Trade policy, understood as the totality of a country's actions regarding trade relations with other states, generally assumes either a liberal (free-market) or protectionist form. An exception to this dichotomy is autarky, which, in the pursuit of full economic self-sufficiency, entails forgoing international trade—a goal that is very difficult to achieve in practice (Milner and Yoffie, 1989; Acocella, 2005; Anderson and Marcouiller, 2005; Gandolfo and Trionfetti, 2014; Helleiner, 2021).

Research suggests that both developed and emerging economies tend to become increasingly trade-liberal over time (Nam, 2018). Since the late 1940s, a global trend toward economic liberalization has been observed, manifested, among other things, in the signing of the General Agreement on Tariffs and Trade (GATT), the establishment of the World Trade Organization (WTO), and supranational agreements such as the European Economic Community, the North American Free Trade Agreement, the European Union, and Mercosur. Nevertheless, many countries (or their unions) continue to employ protectionist mechanisms.

A case in point is the EU sugar market. Its reform began in 2006, aimed at liberalizing regulations. As a result, various support measures were abolished, including sugar production quotas, minimum beet prices, and export subsidies (Brüntrup, 2005; Elbehri *et al.,* 2008; Szajner, 2021; EC, 2017; Szajner and Hryszko, 2024b). However, the market was not fully liberalized, and following the formal conclusion of the EU sugar sector reform in October 2017, measures such as prohibitive import tariffs and preferential import quotas remain in force (Maitah *et al.,* 2024).

Research on global trade and the economy shows that between 1967 and 2008, world trade grew faster than global GDP, and countries pursuing free trade policies benefited more than those implementing restrictions. Nevertheless, various trade limitations continued to exist, often introduced under pressure from specific industrial sectors or for political reasons (Abboushi, 2010). Studies on protectionism highlight the asymmetric behavior of policymakers, who favor support for domestic sectors competing with imports—through measures like import quotas—while neglecting support for competitive, export-oriented domestic sectors (Krueger, 1989).

Bilateral free trade agreements may reduce political support for further multilateral trade liberalization, particularly between countries with similar factor endowments (Levy, 1997). Smaller or lower-cost countries are more likely to conclude bilateral FTAs than larger, higher-cost countries (Goyal and Joshi, 2006). Bilateral liberalization can benefit global free trade if at least four countries are involved (Zhang et al., 2014). It is also important to note that trade liberalization carries various risks, including economic, social, and environmental (Drozdz and Miškinis, 2011; Bühler, 2024).

Import quotas are among the oldest and most widely used restrictions in international trade, aimed at protecting domestic production from price-competitive imports (Corden, 2007; Gandolfo and Trionfetti, 2014; Nagel and Burnete, 2018; WTO). Free trade agreements often include exceptions for "sensitive" sectors or products, allowing mechanisms such as quantitative limits or phased tariff reductions. Sugar is one such sensitive product (Laborde *et al.,* 2010; Daehee and Jooho, 2014; Deardorff, 2018; Nyamdaa *et al.,* 2024). Studies suggest that politically sensitive products or those that can replace higher-cost domestic production with cheaper imports have a higher likelihood of exclusion from trade liberalization (Lyu *et al.,* 2021).

Sugar is a staple food traded on major exchanges. Excessive consumption has negative health effects, and the World Health Organization recommends that daily caloric intake from sugars should not exceed 10% (WHO, 2015; WCRFI, 2017). Excess sugar intake is linked to obesity, type 2 diabetes, and dental caries, prompting some countries to introduce sugar taxes on sweetened beverages (Malik *et al.,* 2010; McGill, 2014; Sánchez-Romero *et al.,* 2016; WHO, 2019). Between 1990 and 2024,

global sugar prices exhibited strong cyclical volatility, with the business cycle shortening from 5–6 years to 2–3 years (Szajner and Hryszko, 2024a). The supply-demand situation in Brazil plays a dominant role in global sugar trade and price formation (Borrell, 1991; Rocha, 2007; Marin, 2016; Amrouk and Heckelei, 2020).

After the abolition of production quotas, EU sugar sale prices demonstrated a stronger correlation with sugar exchange prices than during the quota period, indicating integrative processes between the EU sugar market and the global market (Chmielewski, 2021). Following quota removal, EU production increased, accompanied by a decline in imports.

Simulations of EU market liberalization suggest that if EU sugar import tariffs were removed, supplies to the EU would be dominated by Brazil, Ukraine, and Serbia (Haß, 2022). Ex ante simulations indicated that the decline in preferential sugar imports would be stronger the higher the global sugar prices (Nolte *et al.,* 2012). Ex post studies by the European Commission showed that EU countries adapted differently to the reform, with production concentration increasing in sugar beets alongside a decrease in operational sugar factories, while the refining sector—reliant on imports—did not experience significant structural changes (European Commission, 2022).

Research also indicates that between 2009 and 2019, the EU trade balance fluctuated with production: during high production periods, the EU was a net exporter; during low production periods, a net importer. The EU tariff and import preference system in the sugar sector is effective, meaning that trade flows from countries enjoying preferences exceed those from countries without them. Between 2009 and 2019, total preferential sugar imports into the EU were 270% higher than non-preferential imports, with this indicator at 400% for raw sugar and 110% for white sugar (Berger *et al.,* 2021).

In December 2024, after 25 years of negotiations, the EU and Mercosur reached a political agreement on free trade. In the agricultural sector, poultry, beef, ethanol, rice, honey, and sugar were excluded as sensitive products. Their imports will be regulated through quantitatively limited import quotas at zero tariffs. The agreement also requires Mercosur products to comply with EU phytosanitary standards and to avoid negative impacts on rainforest ecosystems.

A duty-free sugar quota for refining is set at 180,000 tons annually for Mercosur and 10,000 tons for Paraguay, totaling approximately 1.1% of EU sugar production (European Commission). The agreement has faced sharp criticism from agricultural organizations and industry unions, including the European Association of Sugar Manufacturers (CEFS), International Confederation of European Beet Growers (CIBE), and COPA-COGECA (AVEC *et al.,* 2024; CIBE and CEFS, 2025). Trade agreements liberalizing EU market access are cited as one of the main challenges for the EU sugar sector (Kelly, 2020), and the EU–Mercosur agreement is expected to

increase Mercosur's significance in EU sugar supply (Boyer and Schuschny, 2010; Pawlak and Sapa, 2016; Ferrari *et al.,* 2024).

The agreement may also have adverse environmental and social effects in Mercosur countries (Cesar de Oliveira *et al.,* 2024; Harrison and Paulini, 2024) and may pose challenges for certain EU economies (Szajner *et al.,* 2025). It is worth noting that statistical models may have limited predictive validity in assessing development trends in the EU sugar sector (Budzyńska and Urbanek, 2022).

3. Research Methodology

The study covers the period 2018–2024. In the case of supply–demand relations, the analysis was conducted using the marketing year (season) specific to the sugar market (October/September). Price relations, however, were examined in terms of the calendar year, due to the nature and availability of the data.

The choice of this period is justified by the need to characterize the market in statu nascendi, which is of particular relevance in light of the developmental tendencies of the EU trade policy and their impact on the sugar sector within the Union. The analysis of supply–demand and price relations was carried out using a volatility index, with the coefficient of variation calculated according to the following formula:

$$v = \frac{s}{\bar{x}} \cdot 100\%$$

where V – symbolizes the coefficient of variation, S – means standard deviation, $\bar{x}$ - arithmetic mean of the variables.

This approach enables a comparative identification of dominant tendencies and the indication of key differentiations. For the purpose of assessing the export potential of Mercosur and the EU in the sugar sector, the following criteria were employed: self-sufficiency (measured as the ratio of production to consumption), export propensity (measured as the ratio of exports to production), and the trade balance.

Supply–demand and price co-movements were examined using linear relationships, specifically Pearson's correlation coefficient and ordinary least squares regression. Such an approach makes it possible not only to determine the strength of co-movement, but also the extent to which the interdependence explains the variable, as well as to estimate potential changes in the predicate. With the number of observations N=6 (corresponding to the period analyzed in this article), a significance level of α=0.05, and degrees of freedom N–2, the Pearson correlation coefficient is statistically significant above R=0.729 (Soper *et al.,* 1912; Niño-Zarazúa, 2012).

Additionally, a descriptive analysis of EU legal acts, including the EU–Mercosur free trade agreement, was conducted. This allows for the identification of developmental tendencies in EU imports and for the estimation of potential market impacts. The study draws upon publicly available data from the United States Department of Agriculture (USDA) expressed in million metric tons (Mt), the European Commission expressed in million metric tons (Mt) and US dollars per ton (USD/t), and União da Indústria de Cana-de-Açúcar (UNICA) expressed in million metric tons (Mt) and US dollars per ton (USD/t).

4. Research Results and Discussion

4.1 Supply–Demand Situation

During the period 2018/19–2023/24, sugar production in Mercosur averaged 39.1 million metric tons (median), while in the EU it averaged 16.1 million metric tons (median). Brazil was the world's largest sugar producer in this period (second after India as of the 2022/23 season), while the EU ranked fourth. In 2018/19–2023/24, sugar exports from Mercosur averaged 27.4 million metric tons, compared with 0.8 million metric tons from the EU.

Brazil was the largest sugar exporter globally, while the EU ranked seventh. Over the same period, sugar consumption in the EU averaged 14.6 million metric tons, compared with 11.9 million metric tons in Mercosur. The EU was the world's second-largest sugar consumption center after India, while Mercosur ranked fourth. In 2018/19–2023/24, sugar imports into the EU averaged 1.6 million metric tons, compared with 0.1 million metric tons for Mercosur. The EU was the world's seventh-largest importer, while Mercosur ranked 63rd.

This characterization allows us to conclude that both groupings are at least significant participants in the global sugar market, and that changes in supply–demand regulations between them may affect not only the functioning of their respective markets but may also have global repercussions. It also highlights differences between the EU and Mercosur in the sugar sector, which warrant detailed examination.

During 2018/19–2023/24, sugar production in Mercosur countries accounted for an average of 21.8% of world sugar output, while the EU share was 9.0%. Mercosur's share increased by 9.5 percentage points, while the EU's declined by 1.0 percentage point. In terms of sugar exports, Mercosur's average share of global exports amounted to 44.9%, compared with 1.4% for the EU. Mercosur's share increased by 26.3 percentage points, while the EU's declined slightly by 0.1 percentage point.

Sugar consumption in Mercosur represented an average of 6.9% of the global total, while the EU accounted for 8.4%. Mercosur's share fell by 0.8 percentage points, and the EU's by 2.4 percentage points. In terms of imports, Mercosur accounted for

an average of 0.2%, compared with 2.8% for the EU. Mercosur's share fell marginally by 0.1 percentage point, while the EU's decreased by 1.3 percentage points (Table 1).

These findings suggest that both groupings are relevant actors in the global market; however, Mercosur's significance on the supply side (production and exports) is considerably greater than that of the EU. Moreover, divergent developmental tendencies were observed: Mercosur's role expanded dynamically, whereas the EU's importance declined slightly. Neither bloc plays such a key role on the demand side (consumption and imports) as on the supply side, though the EU's share is visibly larger than that of Mercosur. Both blocs exhibited similar developmental tendencies in terms of declining shares in global production, with the EU showing a steeper rate of decline.

Table. 1 *Mercosur's and the EU's share in global sugar market*

detail	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	Avg. 2018/19-2023/24
Production							
Mercosur	17,7%	19,6%	24,7%	20,9%	22,5%	27,3%	21,8%
EU	9,8%	10,5%	8,1%	9,2%	8,1%	8,9%	9,0%
Exports							
Mercosur	34,3%	36,8%	51,0%	40,3%	46,0%	60,5%	44,9%
EU	2,8%	1,5%	1,3%	1,2%	1,0%	2,7%	1,4%
Consumption							
Mercosur	7,4%	7,4%	7,1%	6,6%	6,6%	6,6%	6,9%
EU	10,1%	9,9%	8,3%	8,7%	7,9%	7,7%	8,4%
Imports							
Mercosur	0,2%	0,2%	0,2%	0,2%	0,2%	0,2%	0,2%
EU	3,6%	3,4%	2,3%	2,5%	4,0%	2,3%	2,8%

Source: *Author's calculations.*

During the period 2018/19–2023/24, sugar production in Mercosur increased by 50.8% to 47.9 million metric tons. The average annual growth rate amounted to 8.6%, and production did not exhibit significant volatility (V=16.4%).

Within the bloc, Brazil was the dominant producer, with a median share of 93.9% over the period. Sugar output in Brazil rose by 54.4% to 45.5 million metric tons, with an average annual growth of 9.1%. Production in Brazil showed no significant volatility (V=17.3%). In the remaining Mercosur countries, production levels were marginal.

By contrast, sugar consumption in Mercosur declined by 9.3% to 11.6 million metric tons during 2018/19–2023/24, decreasing at an average annual rate of 1.9%. Consumption was stable (V=4.9%). Brazil was the largest consumer within the bloc,

with a median share of 82.5%. In Brazil, sugar use declined by 13.4% (−2.8% annually on average) and exhibited stability (V=6.0%).

The supply–demand balance, understood as the difference between current production and current consumption, was in surplus in Mercosur, averaging 27.6 million metric tons. Brazil accounted for nearly the entire surplus, with a median share of 98.8%. The production surplus of sugar expanded by 91.0% to 36.4 million metric tons, with an average annual growth rate of 13.8%, and was characterized by moderate volatility (V=25.1%).

During 2018/19–2023/24, sugar exports from Mercosur rose by 81.6% to 36.3 million metric tons, growing at an average annual rate of 12.7%. Export volumes displayed moderate volatility (V=24.6%). The average share of exports in sugar production in Mercosur was 70.0% (median) during the period, with an upward trend, increasing from 62.8% in 2018/19 to 75.6% in 2023/24.

Brazil was the bloc's leading exporter, with a median share of 98.9%. Brazilian sugar exports increased by 83.5% to 36.0 million metric tons, with an average annual growth of 12.9% and moderately high volatility (V=24.9%).

The average share of exports in sugar production in Brazil was 73.7% (median) and followed an upward trajectory, rising from 66.4% in 2018/19 to 79.0% in 2023/24.

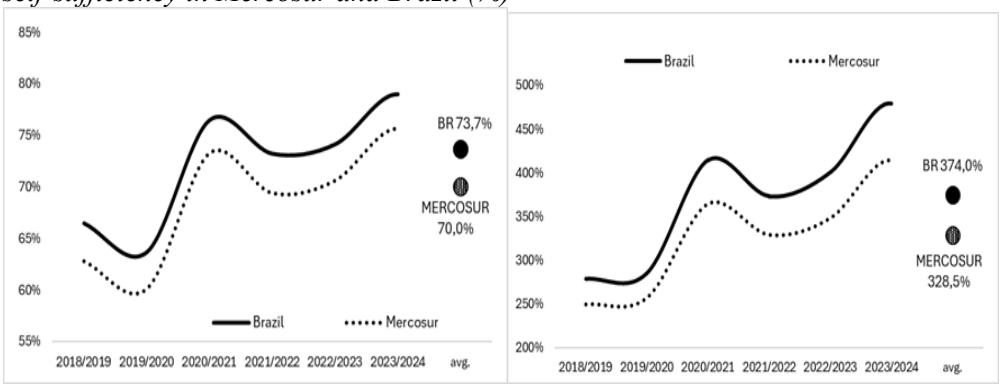
As a result, Mercosur countries were net exporters of sugar (with the exception of Uruguay, where a minor deficit was recorded). The positive trade balance rose by 82.3% to 36.2 million metric tons, while Brazil's surplus increased by 83.5% to 36.0 million metric tons. The average annual growth rate amounted to 12.8% and 12.9%, respectively, with volatility coefficients of 24.7% and 24.9%, both considered moderately high.

Uruguay was the only Mercosur country to import small volumes of sugar during the period, averaging less than 100 thousand metric tons (median), with Brazil as its principal supplier. During the period 2018/19–2023/24, Mercosur was characterized by a very high level of self-sufficiency in the sugar sector, measured as the ratio of production to consumption, which averaged 328.5% (median) and displayed a strong upward trend. Self-sufficiency rose from 249.4% in the 2018/19 season to 414.6% in 2023/24.

The highest production-to-consumption ratio was observed in Brazil, averaging 374.0%, and increasing from 278.3% in 2018/19 to 479.4% in 2023/24.

It is also worth noting that the ratio of sugar exports to consumption in Mercosur averaged 2.3 over the study period, rising from 1.6 in 2018/19 to 3.1 in 2023/24. In the case of Brazil, the average ratio was 2.8, increasing from 1.8 to 3.8 in 2023/24 (Figure 1).

Figure 1. *Left: Mercosur's and Brazil export propensity (%); Right: Sugar market self-sufficiency in Mercosur and Brazil (%)*



Source: *Author's calculations.*

All Mercosur countries, with the exception of Uruguay, recorded a production surplus, a positive trade balance in foreign trade, a self-sufficiency ratio exceeding 100%, as well as a high export propensity during the period under study. Both sugar production and exports increased strongly over the period. The bloc exported more sugar than it consumed. This suggests that the Mercosur sugar sector is expanding and oriented towards export-driven production.

During 2018/19–2023/24, sugar production in the EU declined by 11.8% to 15.6 million metric tons, decreasing at an average annual rate of 2.5%. Production did not display significant volatility (V=8.5%). In the same period, sugar consumption in the EU fell by 21.7% to 13.6 million metric tons, declining at an average annual rate of 4.8%. Consumption did not exhibit significant volatility (V=10.5%).

Over the study period, EU sugar exports increased marginally by 0.8% to 1.6 million metric tons, with an average annual growth rate of 0.2%, though exports were highly volatile (V=42.4%). By contrast, sugar imports fell by 27.4% to 1.4 million metric tons, with a negative average annual rate of 6.2% and moderate volatility (V=24.0%).

The EU foreign trade balance in sugar was negative, averaging −0.5 million metric tons, with a small surplus of 0.2 million metric tons recorded only in the 2023/24 season. The sugar balance, measured as the difference between production and consumption, was positive, with the production surplus rising by 673.9% from 0.3 million metric tons in 2018/19 to 2.6 million metric tons in 2023/24.

During 2018/19–2023/24, the self-sufficiency ratio of the EU sugar sector averaged 110.3% and showed an upward tendency, increasing from 101.4% in 2018/19 to 114.3% in 2023/24. In contrast, the EU's export propensity in the sugar sector remained close to zero, averaging 0.005% over the study period.

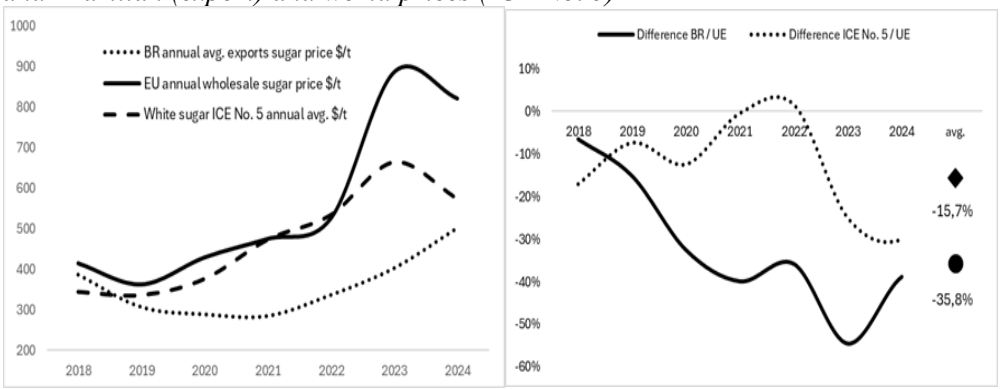
Overall, both sugar production and consumption in the EU declined, with the contraction being more pronounced in consumption than in production. The sugar sector was not only self-sufficient but also generated production surpluses; however, export propensity remained extremely low. This suggests that the EU sugar sector is shrinking and primarily oriented toward self-supply.

4.2 Price Trends

In the period 2018–2024, the average annual sugar selling price in the EU increased by 98.2% to USD 820/t, with an average annual growth rate of 14.7%, and exhibited moderate volatility (V=37.3%). Over the same period, the average annual export price of sugar from Brazil rose by 29.7% to USD 502/t, increasing at an average annual rate of 5.3%, with moderate volatility (V=21.8%). Global sugar prices (white sugar futures contract, London ICE No. 5) increased by 67.1% to USD 573/t during 2018–2024, with an average annual growth rate of 10.8%, and were moderately volatile (V=26.8%) (Figure 2).

During the period under study, sugar selling prices in the EU were higher than Brazilian export prices and global market benchmark prices (except in 2022, when the ICE prices were slightly higher than EU prices). Between 2018 and 2024, EU sugar prices were lower than ICE No. 5 prices by 6.5–38.8%, averaging 35.8%. Over the period, this difference widened. By contrast, EU sugar was cheaper than Brazilian export prices by 0.4–30.2%, averaging 15.7% during the study period. Price differences were variable, with Brazilian export prices exceeding EU selling prices (+1.5%) in 2022; however, over the seven-year period, the price gap generally increased (Figure 2).

Figure 2. *Left: Annual average sugar prices in the EU (wholesale), Brazil (export) and worldwide (ICE No. 5); Right: Percentage difference between EU (wholesale) and Brazilian (export) and world prices (ICE No. 5)*



Source: *Author's calculations.*

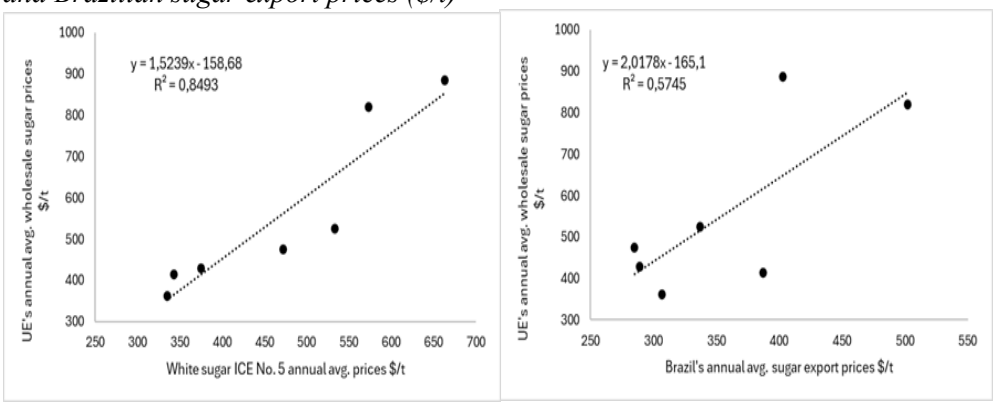
EU sugar prices exhibited a strong relationship with both global and Brazilian prices. During the period under study, a very strong and statistically significant

positive linear relationship was observed between EU sugar selling prices and global prices (ICE No. 5 futures), with a correlation coefficient of R=0.92 and a regression model fit of R^2=0.85. The model was very well fitted, explaining 85% of the co-movement. According to the model, an average increase of 1 USD in white sugar futures prices (ICE No. 5) is associated with an average increase of 1.5 USD in EU sugar selling prices (Figure 3).

A strong and statistically significant positive relationship was also observed between EU sugar prices and Brazilian export prices, with a correlation coefficient of R=0.76 and a regression model fit of R^2=0.57. The model was well fitted, explaining 57% of the co-movement. According to the model, an average increase of 1 USD in Brazilian sugar export prices is associated with an average increase of 2.0 USD in EU sugar selling prices.

It should be noted that the co-movement of EU prices was stronger with global prices than with Brazilian prices. This indicates that the EU market is closely integrated not only with the global market but also with Brazil. This is further supported by the characteristics of the sector, which has been liberalized (subject only to high import tariffs with several exceptions) (Figure 3).

Figure 3. *Left: Relationship between EU sugar wholesale prices and sugar exchange quotations ($/t); Right: Relationship between EU sugar wholesale prices and Brazilian sugar export prices ($/t)*



Source: *Author's calculations.*

4.3 EU Sugar Import Regulations

According to the EU customs tariff, sugar imports are subject to duties of EUR 339/t for raw sugar intended for refining and EUR 419/t for white sugar. However, the sugar sector is characterized by numerous exceptions to these rates. During the period under study, sugar could be imported duty-free under the EPA-EBA agreements (Economic Partnership Agreements and the "Everything But Arms" arrangement with the least developed countries) and under various types of TRQs

(for the Balkans, Ukraine, Moldova, Peru, Colombia, Central America—including sugar confectionery—and from the 2023/24 season, for South Africa, Vietnam, and Ecuador). Imports under EPA-EBA are not subject to quantitative limits, whereas TRQ imports were quota-restricted (averaging 568,000 t during the study period).

Sugar could also be imported at a reduced duty rate of EUR 98/t under the CXL concession (Brazil, Australia, Cuba, India, erga omnes) within a quantitative limit, which averaged 728,300 t. It should be noted that during the period under study, import quotas remained largely stable, with two exceptions: in 2022, when duty-free imports from Ukraine were allowed from mid-year due to the war, and in the 2023/24 season, when duty-free quotas totaling 199,200 t were introduced, including 150,000 t allocated to South Africa.

During the period under study, duty-free sugar imports into the EU averaged 1.1 million metric tons, while imports at the reduced tariff rate averaged 0.1 million metric tons. Quantitative limits were not fully utilized: for duty-free TRQs, the average utilization was 57.3%, and for the CXL concession, 19.0%, corresponding to averages of 321,700 t and 138,400 t, respectively. It is noteworthy that the structure of TRQs changed over time, with duty-free imports gaining importance: in 2018/19, duty-free TRQs accounted for 41.0% and reduced-tariff imports for 59.0%, whereas in 2023/24 the shares were 50.8% and 49.2%, respectively.

Under the EPA-EBA agreements, the EU imported an average of 516,500 t during the study period, with imports exhibiting a strong downward trend, falling from 1,111,000 t in 2018/19 to 366,500 t in 2023/24. This decline is partly attributable to Brexit, as the United Kingdom is a significant sugar importer.

Since June 2022, the duty-free import quota for Ukraine (20,070 t) was abolished, and imports became duty-free and unlimited due to the outbreak of the war. As a result, imports from Ukraine to the EU increased sharply: 400,000 t in 2022/23 and 500,000 t in the following season. At the request of Member States, which considered Ukrainian imports excessive and destabilizing to the EU market, the European Commission introduced a regulatory mechanism, limiting imports from Ukraine to 262,700 t in the second half of 2024 and 109,400 t in the first half of 2025.

Prior to the war, Ukrainian imports accounted for 1.3–2.5% of total EU sugar imports; in 2022/23, this share rose to 33.3% and to 47.1% in the subsequent season. The Ukrainian case illustrates that the EU sugar market is sensitive to sudden supply shocks, with excessive imports leading to a decline in EU sugar prices.

A particular feature of the EU sugar sector is that, despite high sugar beet production covering domestic demand and generally generating surpluses, the Union simultaneously imports sugar. Imports include both refined (white) and raw sugar. During the study period, raw sugar accounted for an average of 61.1% of total sugar

imports, showing moderate volatility (V=36.3%) and a clear downward trend (average annual decrease of −17.5%). The share of raw sugar in total sugar imports fell from 59.8% in 2018/19 to 31.9% in 2023/24. At the same time, imports of white sugar exhibited moderate volatility (V=24.1%), with an average annual growth of 4.0%. It should be noted that until 2021/22, white sugar imports were declining, but they increased in the following two years due to higher imports from Ukraine.

Several EU Member States, such as Spain, Portugal, Romania, and Bulgaria, are traditional importers of raw sugar, which is refined locally. Refineries operate in nine Member States, including countries that generate production surpluses based on local sugar beet cultivation, such as Poland and France. Such refineries require access to high-quality raw material, and in this context, the EU cannot restrict imports (which could be desirable from the perspective of EU sugar beet growers, who must compete not only with other growers but also with imports).

Import capacities, however, should be tailored to the needs of the food industry, which produces for both the domestic and external markets. In this context, there is no need to increase import quotas: the EU sugar sector is self-sufficient, and the existing import limits are underutilized.

4.4 Liberalization of Sugar Trade between the EU and Mercosur

The EU–Mercosur Free Trade Agreement provides for a duty-free import quota of 180,000 t of raw sugar for Brazil and 10,000 t for Paraguay. The total potential import of 190,000 t from Mercosur corresponds to 1.2% of average EU sugar production in the 2018/19–2023/24 seasons, 1.3% of average EU sugar consumption during the same period, and 11.2% of average imports.

Thus, this quantity is not sufficient to have a direct significant impact on the EU sugar market. However, the impact of the Mercosur import quota should be assessed more broadly, taking into account the overall Free Trade Agreement with the bloc, as well as existing conditions for sugar imports into the EU.

It should be noted that 94.7% of the proposed Mercosur quota is allocated to Brazil, which already enjoys preferential (albeit not duty-free) access to the EU sugar market. The Mercosur agreement also sets import quotas for beef, rice, honey, poultry, and ethanol—always for the entire bloc rather than individual countries.

Sugar is the only exception, where Brazil (and Paraguay) are specifically designated. Preferences are therefore granted to the bloc’s main producer, which generates large export surpluses and can utilize the duty-free quota. This regulation eliminates competition for export licenses within Mercosur, which may adversely affect price conditions.

During the study period, Brazil's CXL concession limit averaged 389,200 t (duty EUR 98/t) and showed a downward trend, declining from 412,100 t in 2018/19 to 363,700 t in 2023/24 (−11.7%). Brazil could also export under the erga omnes quota, which averaged 270,300 t (duty EUR 98/t) during the study period, also decreasing from 290,000 t in 2018/19 to 260,400 t in 2023/24 (−10.2%).

Brazil did not fully utilize the available reduced-tariff limit to the EU. Over the 2018/19–2023/24 seasons, average imports from Brazil were 114,400 t, representing 29.4% of the available limit. Under the erga omnes quota, imports averaged 73,900 t, or 27.4% of the available limit. In 2022/23, however, Brazil utilized 99.9% of its quota and erga omnes imports reached 100%.

During the period under study, the volatility of EU imports from Brazil and under erga omnes was very high (V=106.8% and V=118.4%, respectively). This demonstrates Brazil's potential for sudden increases in exports to the EU, with possible total limits reaching 543,000 t (363,000 t under the CXL concession and 180,000 t under Mercosur). Such quantities could disrupt the EU market, similar to the increased Ukrainian imports after the war outbreak, which were eventually restricted.

In addition to duty-free sugar imports, the Mercosur FTA provides for duty-free imports of 450,000 t of ethanol for industrial use and 200,000 t of ethanol for general use at a duty equal to one-third of the standard tariff. Sugar beets, the source of EU sugar production, are also used for ethanol production, primarily for energy purposes (as a biofuel additive to gasoline).

During the study period, bioethanol production accounted for an average of 4.9% of EU sugar use, with an increasing trend from 4.3% in 2018/19 to 5.5% in 2023/24. This is particularly relevant in the context of the energy transition and climate change mitigation. Under RED III, sugar-beet ethanol, depending on the production process, allows for greenhouse gas emission reductions of 47–76% (default values).

The EU is currently negotiating Free Trade Agreements (FTAs) with several third countries, including Australia, India, and Thailand. These countries are major global sugar producers and exporters. Although the details of these agreements are not yet available, it can be assumed that Australia, India, and Thailand will seek to introduce at least duty-free sugar import quotas. At present, these countries can already benefit from preferential imports at a reduced duty of EUR 98/t under the erga omnes quota within the CXL concession (260,400 t in the season), and India additionally has a small "own" quota of 10,000 t per season.

The analysis shows that, although duty-free or preferential import capacities are not fully utilized, significant quantities of imported sugar occasionally enter the EU market, disrupting the supply–demand situation and price levels. Due to the sector's self-sufficiency, which exceeded 100% during the study period, the EU sugar sector

is sensitive to oversupply. This was reflected in the special regulations introduced for duty-free sugar imports from Ukraine. It should be emphasized that during the study period, the importance of duty-free sugar imports increased, with the majority of imports consisting of raw sugar, which is subsequently refined within the EU.

5. Conclusions, Proposals, Recommendations

The study revealed divergent development trends in the sugar sector in the EU and Mercosur during the 2018/19–2023/24 period. Sugar production in Mercosur increased by 50.8%, whereas production in the EU declined by 11.8%. Sugar exports from Mercosur rose by 81.6%, averaging 27.2 million tons, while EU exports remained stable at an average of 1.0 million tons.

Sugar imports into Mercosur were negligible, whereas the EU imported significant quantities (averaging 1.7 million tons), although imports declined by 27.4% over the study period. Sugar consumption in the EU decreased by 21.7%. The study also demonstrated a strong and statistically significant relationship between EU sugar prices and both global and Brazilian prices. Brazilian prices were on average 35.8% lower than EU prices, while global prices were 15.7% lower.

Mercosur's propensity to export sugar averaged 70.0% and exhibited an upward trend, increasing by 12.8 percentage points during the study period. By contrast, the EU sugar sector showed virtually no inclination to export, averaging 0.005% over the same period.

Mercosur's sugar self-sufficiency averaged 328.5%, showing a rising trend of 165.2 percentage points, while EU self-sufficiency averaged 110.3%, with a moderate upward trend of 12.96 percentage points.

Considering these changes and their dynamics, it can be concluded that the EU does not require additional sugar supply sources, particularly since existing import capacities are underutilized and the sector itself generates structural surpluses despite declining consumption.

Meanwhile, given the observed pace of change in the study period, Mercosur may require new export markets in the medium term. However, the quota agreed under the EU–Mercosur trade liberalization is too low to meet these potential needs and is insufficient to pose a real threat to the EU sugar market.

At the same time, however, production and export potential of Mercosur should be considered a real threat to the EU sugar sector, which, however, is effectively protected by high tariffs. Exceptions to this protection, such as duty-free import quotas, may weaken the economic performance of the EU sector. EU sugar must compete with Mercosur sugar not only on global markets but also within the internal EU market.

Trade liberalization between the EU and Mercosur may nevertheless exert indirect effects on the sugar sector. The agreement allows for bioethanol imports, which reduces domestic demand for raw materials for bioethanol production in the EU (sugar beets and maize). The agreement also exerts economic and social pressure on the entire EU agricultural sector by increasing competitiveness, which may reduce profit margins and the viability of agri-food production.

The agreement stipulates that Mercosur products must meet the same phytosanitary standards as EU agriculture but does not specify how this should be achieved, for example, regarding the use of plant protection products. It should be emphasized that the EU sugar market is sensitive even to relatively small increases in imports (as illustrated by the Ukrainian import case), and additional imports from Mercosur, even within the negotiated quota, could have a tangible impact on prices, particularly if EU production increases.

References:

Abboushi, S. 2010. Trade protectionism: reasons and outcomes. Competitiveness Review, Vol. 20. No. 5, pp. 384-394. https://doi.org/10.1108/10595421011080760.

Acocella, N. 2005. Economic Policy in the Age of Globalisation. https://doi.org/10.1017/CBO9780511753947.016.

Amrouk, El.M., Heckelei, Th. 2020. Forecasting International Sugar Prices: A Bayesian Model Average Analysis. Sugar Tech, Volume 22, 552-562. https://doi.org/10.1007/s12355-020-00815-0.

Anderson, J.E., Marcouiller, D. 2005. Anarchy and autarky: Endogenous predation as a barrier to trade. International Economic Review, Volume 46, Issue 1. https://doi.org/10.1111/j.0020-6598.2005.00315.x.

Berger, J., Brümmer, B., Fiankor, D.D., Kopp, T. 2021. Sugar market policies in the EU and international sugar trade. Diskussionsbeitrag, No. 2105, Georg-August-Universität Göttingen. https://hdl.handle.net/10419/235846.

Borrel, B. 1991. How a change in Brazil's sugar policies would affect the world sugar market. Policy Research Working Paper Series, 642. The World Bank.

Boyer, I., Schuschny, A. 2010. Quantitative assessment of a free trade agreement between MERCOSUR and the European Union. CEPAL - Serie estudios estadísticos y prospectivos No 69. RePEc:ecr:col027:4774.

Brüntrup, M. 2005. Between Protectionism, Poverty Orientation, and Market Efficiency: Reform of the EU Sugar Market Organization, Briefing Paper, IDOS.

Budzyńska, A., Urbanek, M. 2022. Forecasting the directions of the EU sugar market development after limiting government intervention. Ekonomia i Prawo. Economics and Law. Vol. 21, no. 2, pp. 297-315. DOI 10.12775/EiP.2022.016.

Bühler, M. 2024. Who Benefits from Free Trade? World Development, Volume 179. https://doi.org/10.1016/j.worlddev.2024.106622.

AVEC, CEFS, CEPM, CIBE, COPA-COGECA, and EUWEP. 2024. https://www.cibe-europe.eu/Data/Files/221-24%20Joint%20Statement-Mercosur-22Oct2024.pdf.

Cesar de Oliveira, S.E.M., Visentin, J.C., Pavani, B.F., Branco, P.D., de Maria, M., Loyola, R. 2024. The European Union-Mercosur Free Trade Agreement as a tool for environmentally sustainable land use governance. Environmental Science and Policy, Volume 161. https://doi.org/10.1016/j.envsci.2024.103875.

CIBE, and CEFS. 2025. https://cefs.org/wp-content/uploads/2025/01/250114_CIBE-CEFS_Mercosur_PositionPaper_final.pdf.

Chmielewski, Ł. 2021. Supply and Demand Situation and Prices ont Global and Polish Sugar Market. Zagadnienia Ekonomiki Rolnej/Problems of Agricultural Economics 4(369), 95-115. DOI:10.30858/zer/142755.

Corden, W.M. 2007. Trade Policy and Economic Welfare. Second Edition, Oxford University Press

Deardorff, A.V. 2018. Sensitive Sectors in Free Trade Agreements. East Asian Economic Review, Vol. 22, no. 4, pp. 403-425. https://doi.org/10.11644/KIEP.EAER.2018.22.4.349.

Daehee, J., Jooho, S. 2014. Selecting Method of Sensitive Agricultural Products in FTA Negotiations Focused on Food Crops, Animal Products, Dairy Products in RCEP Negotiation. Journal of Rural Development/Nongchon-Gyeongje, vol. 37(4). DOI: 10.22004/ag.econ.330648.

Drozdz, J., Miškinis, A. 2011. Benefits and threats of free trade. Ekonomia = Economics, Nr 2(14), s. 40-48.

Elbehri, A., Kelch, D., Umstaetter, J. 2008. The EU Sugar Policy Regime and Implications of Reform. Economic Research Report. Number 59, USDA.

European Commision. https://policy.trade.ec.europa.eu/eu-trade-relationships-country-and-region/countries-and-regions/mercosur/eu-mercosur-agreement/factsheet-eu-mercosur-partnership-agreement-opening-opportunities-european-farmers_en.

European Commission. 2022. Study on the adaptation strategies of the sugar supply chain after the end of the sugar quotas – Final report. https://data.europa.eu/doi/10.2762/44128.

European Commision. 2017. EU sugar quota system comes to an end. https://ec.europa.eu/commission/presscorner/detail/en/ip173487.

Ferrari, E., Elleby, C., De Jong, B., M'barek, R., Perez Dominguez, I. 2024. Cumulative economic impact of upcoming trade agreements on EU agriculture, Publications Office of the European Union, JRC135540. https://data.europa.eu/doi/10.2760/54976.

Gandolfo, G., Trionfetti, F. 2014. International Trade Theory and Policy. Second edition, Springer Heidelberg New York, London. DOI:10.1007/978-3-642-37314-5.

Goyal, S., Joshi, S. 2006. Bilateralism and free trade. International Economic Review, 47, Issue 3, pp. 749-778. https://doi.org/10.1111%2Fj.1468-2354.2006.00395.x.

Harrison, J., Paulini, S. 2024. Reinventing trade, environment and development interlinkages: lessons from the EU–Mercosur Association Agreement. Journal of International Economic Law, Volume 27, Issue 4, Pages 723-740. https://doi.org/10.1093/jiel/jgae044.

Haß, M. 2022. Liberalising the EU sugar market: what are the effects on third countries? Australian Journal of Agricultural and Resource Economics, Volume 66, Issue 3. https://doi.org/10.1111/1467-8489.12475.

Helleiner, E. 2021. The Return of National Self-Sufficiency? Excavating Autarkic Thought in a De-Globalizing Era. International Studies Review, Volume 23, Issue 3. https://doi.org/10.1093/isr/viaa092.

Kelly, P. 2020. The EU Sugar Sector: Policy, Production, and Challenges, EPRS. DOI: 20.500.12592/3vc5ts.

Krugman, P. 2010. Rewolucja rosnących przychodów w handlu i Geografia. Gospodarka Narodowa 11-12, 231-232.

Krueger, A.O. 1989. Asymmetries in Policy between Exportables and Import-Competing Goods. NBER Working Paper No. w2904, Available at SSRN: https://ssrn.com/abstract=459418.

Laborde, D., Jean, S., Martin, W.J. 2010. Formulas and Flexibility in Trade Negotiations: Sensitive Agricultural Products in the World Trade Organization's Doha Agenda. World Bank Economic Review, 24, 500-519. DOI:10.2307/23029703.

Levy, P.I. 1997. A Political-Economic Analysis of Free-Trade Agreements. American Economic Review, Vol. 87, No. 4, pp. 506-519.

Lyu, J., Prehn, S., Zhang, Y., Glauben, T., Zeng, Y. 2021. Trade creation, political sensitivity and product exclusions: the political economy of agriculture protection in China's FTAs. Australian Journal of Agricultural and Resource Economics, Volume 65, Issue 3. https://doi.org/10.1111/1467-8489.12426.

Maitah, M., Procházka, P., Rojík, S. Činčalová, S., Malec, K., Smutka, L., Gebeltová, Z., Koželský, R., Maitah, K., Tomšík, K. 2024. Future Development of Sugar Market in the European Union in the Period 2023–2032. Sugar Tech 26, 295-304. https://doi.org/10.1007/s12355-023-01342-4.

Malik, V.S., Popkin, B.M., Bray, G.A., Despres, J.P., and Hu, F.B. 2010. Sugar-sweetened beverages, obesity, type 2 diabetes mellitus, and cardiovascular disease risk. Circulation, Volume 121, Number 11. doi:10.1161/CIRCULATIONAHA.109.87618.

Marin, F.R. 2016. Understanding sugarcane production, biofuels, and market volatility in Brazil: A research perspective, Outlook on Agriculture, 45(2), 75-77. https://doi.org/10.1177/0030727016649802.

Milner, H.V., Yoffie, D.B. 1989. Between free trade and protectionism: strategic trade policy and a theory of corporate trade demands. International Organization, Volume 43, Issue 2, pp. 239-272. DOI: https://doi.org/10.1017/S0020818300032902.

Nagel, D., Burnete, S. 2018. Free Trade in Theory and Policy: Contemporary Challenges. Human and Social Studies. DOI:10.2478/hssr-2018-0012.

Nam, R.J. 2018. A Multidimensional Approach to Trade Policy Indicators. IMF Working Papers, Volume 2018, Issue 032. doi.org/10.5089/9781484342350.001.

Nino-Zarazua, M. 2012. Quantitative Analysis in Social Sciences: An Brief Introduction for Non-Economists. http://dx.doi.org/10.2139/ssrn.2066058.

Nolte, S., Buysse, J., Van Huylenbroeck, G. 2012. Modelling the effects of an abolition of the EU sugar quota on internal prices, production and imports. European Review of Agricultural Economics, Volume 39, Issue 1, Pages 75-94. https://doi.org/10.1093/erae/jbr043.

Nyamdaa, O., Ulzii-Ochir, N., Lkhamtseren, O. 2024. Tariff Negotiations Under Free Trade Agreements: The Case of Mongolia and the Republic of Korea. World Customs Journal, 18(2), 20-37. https://doi.org/10.55596/001c.123706.

Pawlak, K., Sapa, A. 2016. Potencjalne skutki utworzenia strefy wolnego handlu UE-MERCOSUR dla handlu rolno-żywnościowego UE. Zeszyty Naukowe SGGW W Warszawie - Problemy Rolnictwa Światowego, 16(1), 199-210. https://doi.org/10.22630/PRS.2016.16.1.17.

Rocha, L.B. 2007. Brazil's impact on the world sugar market: An overview and challenges for the industry. International Sugar Journal, 109(1305), 541-559.

Sánchez-Romero, L.M., Penko, J., Coxson, P.G., Fernández, A., Mason, A., Moran, A,E., Ávila-Burgos, L., Odden, M., Barquera, S., Bibbins-Domingo, K. 2016. Projected Impact of Mexico's Sugar-Sweetened Beverage Tax Policy on Diabetes and Cardiovascular Disease: A Modeling Study. PLoS Medicine 13(11). doi: 10.1371/journal.pmed.1002158.

Soper, H.E., Young, A.W., Cave, B.M., Lee, A., Pearson, K. 1917. On the Distribution of the Correlation Coefficient in Small Samples. Appendix I to the Papers of "Student" and R.A. Fisher. A Cooperative Study. https://doi.org/10.1093/biomet/11.4.328.

Szajner, P., Hryszko, K. 2024a. Cyclical Fluctuations on the Global Sugar Market in the Context of the War in Ukraine. European Research Studies Journal, Volume XXVII, Issue 3, 482-498.

Szajner, P., Hryszko, K. 2024b. Oligopol cukrowniczy w Polsce – determinanty przemian i funkcjonowanie. Wieś i Rolnictwo, 4(201), 103-126. doi: 10.53098/wir.2023.4.201/05.

Szajner, P. (Ed.). 2021. Rynek cukru. Stan i perspektywy, Nr. 48, IERiGŻ-PIB.

WTO. History of the multilateral trading system. https://www.wto.org/english/thewto_e/history_e/history_e.htm.

Zhang, J., Cui, Z., Zu, L. 2014. The evolution of free trade networks. Journal of Economic Dynamics and Control, Volume 38, pages 72-86. https://doi.org/10.1016/j.jedc.2013.09.004.