

Socioeconomic Impacts of the EU-Mercosur Agreement's Export Effects: Evidence from Gravity Estimates and a Socially Extended Miyazawa Input-Output Analysis for Portugal

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The EU-Mercosur Agreement

31

Countries

World's largest
free trade area

~20%

of Global GDP

Covered by
the agreement

91%

Tariff Elimination

EU goods exported
to Mercosur

**1 May
2026**

In Force

Provisional
application

Key Agreement Provisions

✓ Trade in Goods & Services

✓ Technical Barriers to Trade

✓ Public Procurement

✓ Investment Rules

✓ Labour Standards

✓ Environmental Protection

European Commission projects a 39% increase in EU annual exports to Mercosur by 2040 (motor vehicles +200%, chemicals +50%, machinery +35%)

Portugal & Mercosur: Trade Relations

Portugal's Competitive Advantage

- Geographical proximity to Mercosur
- Cultural & linguistic ties (Portuguese language)
- Historical trade connections

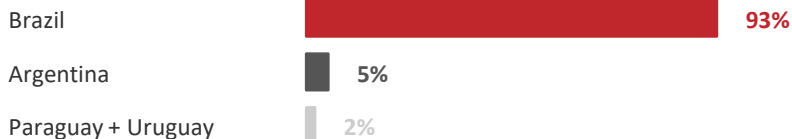
€1 226 M

Goods exports to Mercosur
(2024)

1.55%

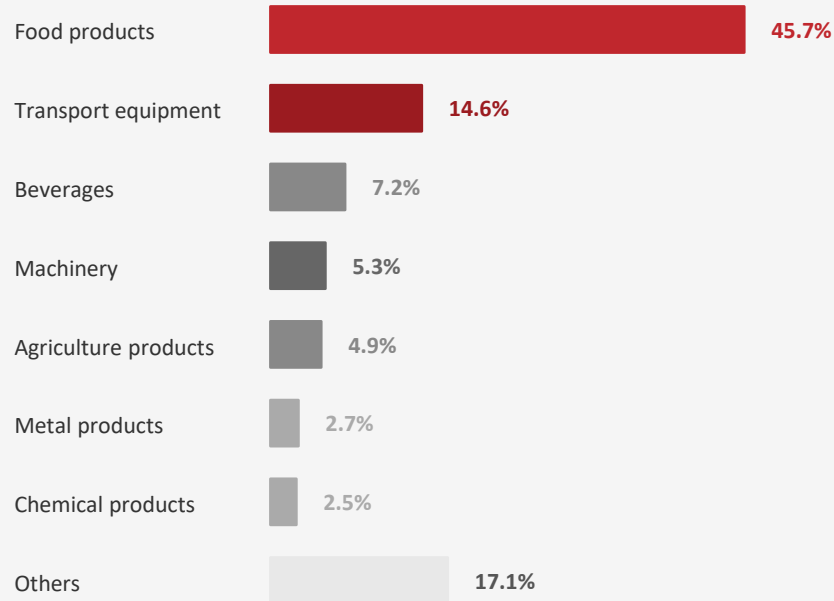
Share of total Portuguese
exports

Destination Breakdown (2024)



Significant market with considerable growth potential - but until now maintained high levels of trade protection, limiting trade opportunities

Product Category Mix (2024)



Examples of sectors expected to see significant gains from the agreement (source: sector experts)

Wine & olive oil · Metalworking & metallurgy

Research Gap & Objectives

Research Gap

Despite the significant export potential associated with the EU-Mercosur agreement, to the best of our knowledge, no quantitative analysis of its impact on Portuguese exports at the sectoral level has been conducted

This Paper Aims To

01

Quantify Sectoral Export Effects

Estimate the impact of the EU-Mercosur agreement on Portuguese goods exports at the sectoral level using a gravity econometric model

02

Assess Economic Multiplier Effects

Capture direct, indirect, and induced effects throughout the Portuguese economy via a Miyazawa Input-Output model

03

Analyse Social Impacts

Quantify social indicators (gender equality, labour skills, occupational safety) and income distribution across household groups

Methodological Framework

Step 1

Gravity Model

- The effect of the EU–Mercosur agreement is estimated by considering the historical effects of trade agreements already in force that contain provisions similar to those of the EU–Mercosur agreement (following Timini & Viani, 2020)
- Sector-by-sector estimation (CPA)
- Dataset: 2002–2019 (COMEXT + CEPII)

Step 2

Miyazawa IO Model

- Extension of standard closed model
- Enables the calculation of more realistic induced effects by disaggregating households into income groups
- Allows for income distribution analysis
- Calibrated using FIGARO 2023 input–output tables, Household Budget Survey microdata, and labour force statistics
- Indicators: output, gross value added and wages

Step 3

Social Extension

- Enables a more comprehensive analysis, complementing economic indicators
- Social indicator categories:
 - Gender equality indicators
 - Labour skills composition
 - Occupational safety metrics

Gravity Model: Key Specification Choices

Final Specification (PPML, sector-by-sector):

$$X_{ij,t} = \exp [\beta_1 RTA_mercosur_proxy_{ij,t} + \beta_2 EU_{ij,t} + \beta_3 RTA_oth_{ij,t} + \beta_4 WTO_{ij,t} + \beta_5 \ln_GDP_{j,t} + \phi_t + \psi_j] + \varepsilon_{ij,t}$$

PPML

Poisson Pseudo-Maximum Likelihood

Addresses heteroskedasticity and accommodates zero trade flows
— critical for sector-level data

FE

Fixed Effects Strategy

Best practices in line with the literature:

- Importer & exporter time FE → control for multilateral resistance; Pair FE → address RTA endogeneity

Specification adopted in this paper

- Exporter-time FE → year FE (single exporter); Pair FE → importer FE (single destination per pair); Importer-time FE dropped → model overidentified; Importer GDP added to capture time-varying import demand

RTA

RTA Proxy Identification

EU-Central America (2013), EU-Colombia & Peru (2013), EU-South Korea (2011) — agreements with provisions similar to EU-Mercosur (Timini & Viani, 2020)

SEC

Sector-by-Sector Estimation

Gravity model is separable at industry level (Yotov et al., 2016); estimates produced product by product (CPA classification)

Preliminary Gravity Results: Aggregate Effects

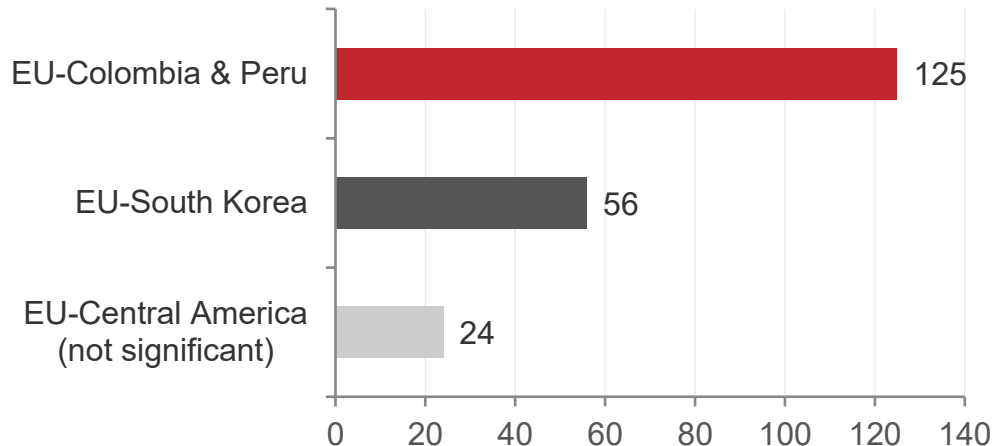
+65%

average increase in total
Portuguese exports
to RTA proxy destinations

coefficient: 0.503*** (p < 0.01)

*Consistent with Timini & Viani (2020):
~60% increase in North-to-South exports*

Heterogeneous Effects by Agreement (%)

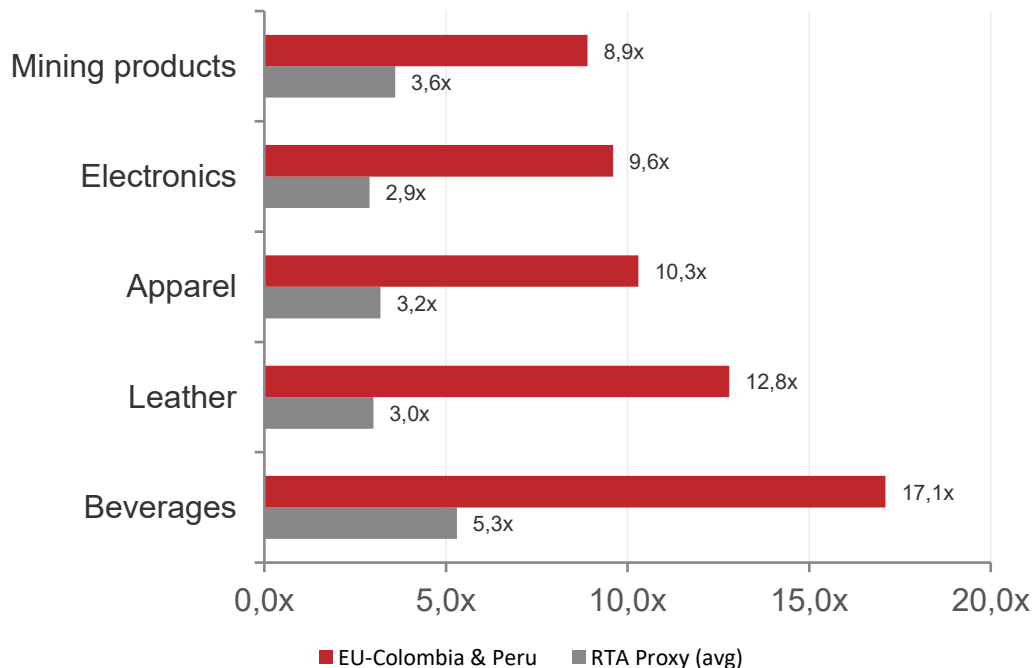


Interpretation Notes

- Colombia & Peru (+125%): most similar to Mercosur → preferred reference
- South Korea (+56%): statistically significant (p < 0.01)
- Central America (+24%): not statistically significant

Preliminary Gravity Results: Sectoral Export Effects

Top Sectors — Estimated export multiplier (agreement vs. no agreement)

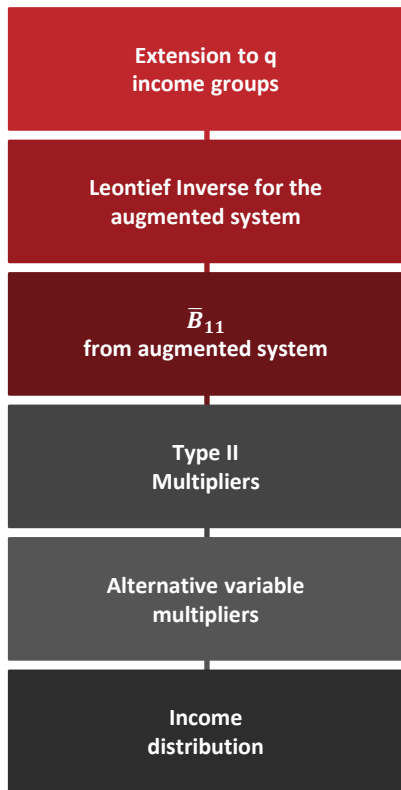


Also positive & significant (both proxies)

- ✓ Textiles
- ✓ Petroleum products
- ✓ Chemical products
- ✓ Basic metals
- ✓ Other manufactures

Note: Multiplier = 1 + (estimated % increase / 100). Results shown where both proxies indicate positive and statistically significant effects.

Miyazawa Input-Output Model



$$\bar{A} = \begin{bmatrix} A_{(n*n)} & C_{(n*q)} \\ V_{(q*n)} & 0_{(q*q)} \end{bmatrix}$$

$$(I - \bar{A})^{-1} = \bar{B} = \begin{bmatrix} \bar{B}_{11} & \bar{B}_{12} \\ \bar{B}_{21} & \bar{B}_{22} \end{bmatrix} = \begin{bmatrix} B(I - CVB)^{-1} & BCK \\ KVB & K \end{bmatrix}$$

$$B(I - CVB)^{-1}$$

$$M_j^{II*} = \sum_{i=1}^n \alpha_{i,j}^{II}$$

$$M_j^{II} = \sum_{i=1}^n \alpha_{i,j}^{II} * \frac{o_i}{x_i}$$

$$y = KVBf *$$

Augmented coefficient matrix with household consumption (C) and Wage coefficients (V) by income group

Full inverse, where:
 $B = (I - A)^{-1}$; $VBC = L$;
 $K = (I - L)^{-1}$

Output effects block of $\bar{B}$:
 direct + indirect + induced effects on production

Sum of column j of $B(I - CVB)^{-1}$
 Captures direct + indirect + induced effects

Multipliers for GVA, wages, employment, social indicators (linear relationship assumed)

Income received by each household group g from export shock f^*

Outputs

- Production
- GVA & wages
- Employment
- Social indicators
- Income by household group

Preliminary Results: Applying the Miyazawa Model

€544 M

Estimated total export gain

+0.7% of total Portuguese exports
(applying RTA proxy average sectoral effects to 2023 data)

2.14×

Output multiplier (new Mercosur exports)

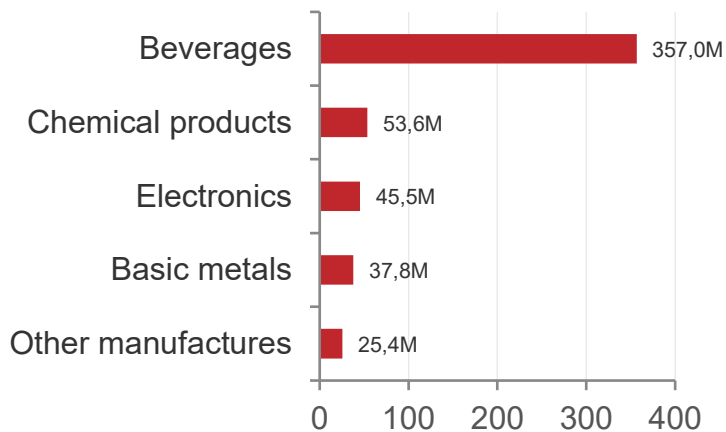
vs. 1.90× for total
Portuguese exports

**Lowest income group
+3 p.p.**

Income distribution effect

Lowest income group gains
24.9% vs. 21.9% (total exports)

Estimated export gain by sector (€M)



Structure: new Mercosur exports vs. total (%)

Sector	New Mercosur	Total
Beverages	66%	2%
Chemical prod.	10%	5%
Electronics	8%	7%
Basic metals	7%	4%
Other manuf.	5%	1%
Textiles	3%	3%
Apparel	1%	4%
Leather	1%	3%

Income distribution — new Mercosur exports

Group	New Mercosur
1 (lowest income)	24.9%
2	13.8%
3	16.5%
4	18.5%
5	13.6%
6	6.6%
7	2.5%
8 (highest income)	3.5%

Group 1
gains +3
p.p. vs.
total
exports

Conclusions & Next Steps

Key Findings

- RTAs with characteristics similar to EU-Mercosur are associated with a +65% increase in total Portuguese exports (significant at 1%). Result broadly consistent with Timini & Viani (2020) benchmark
- Strong heterogeneity across agreements: Colombia & Peru (+125%) > South Korea (+56%) > Central America (+24%, not significant)
- Applying the estimates to 2023 data gives a total export gain of €544M (+0.7% of total exports), dominated by Beverages
- New Mercosur exports show a higher output multiplier (2.14×) than total Portuguese exports (1.90×)
- Largest sectoral gains: Beverages, Leather, Apparel, Electronics, Mining products

Next Steps

- 1 Gravity model: test inclusion of domestic trade flows (Yotov, 2022)
- 2 Explore ex-ante gravity approach to quantify the deep impact of trade liberalisation (Larch et al., 2021)
- 3 Obtain results from the Miyazawa model for the remaining indicators and simulate comparisons with other export structures (e.g. exports to the European Union)
- 4 Apply social extension: gender equality, labour skills and occupational safety

Thank you

Questions & Comments

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