



The impact of COVID-19 on exports related jobs in the EU*

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*The opinions expressed in this presentation are the authors' own and do not necessarily reflect the views and opinions of the European Commission.

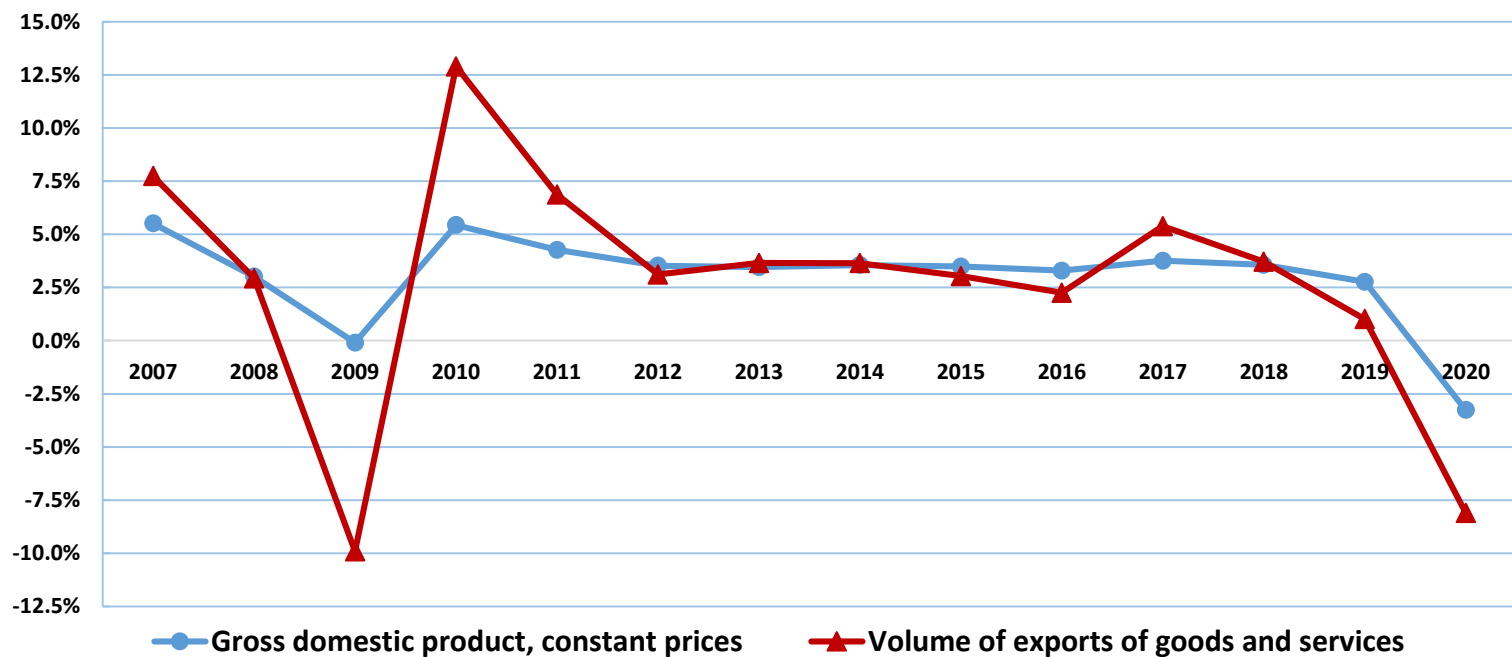
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The impact of Covid-19 on the world economy

- The COVID-19 related slowdown in demand for goods and services lead to a drastic decrease in real world GDP of 3.3% and a reduction in global world trade volumes of 8.5%.
- The pandemic disrupted the sourcing of foreign value-added along global supply chains and altered companies' decisions in respect to their preferred choice of optimal intermediate inputs mix.
- This trend applies worldwide although some regions were harder hit than others.
- In response to the pandemic EU countries implemented large exceptional support measures to prevent 'real' job losses.

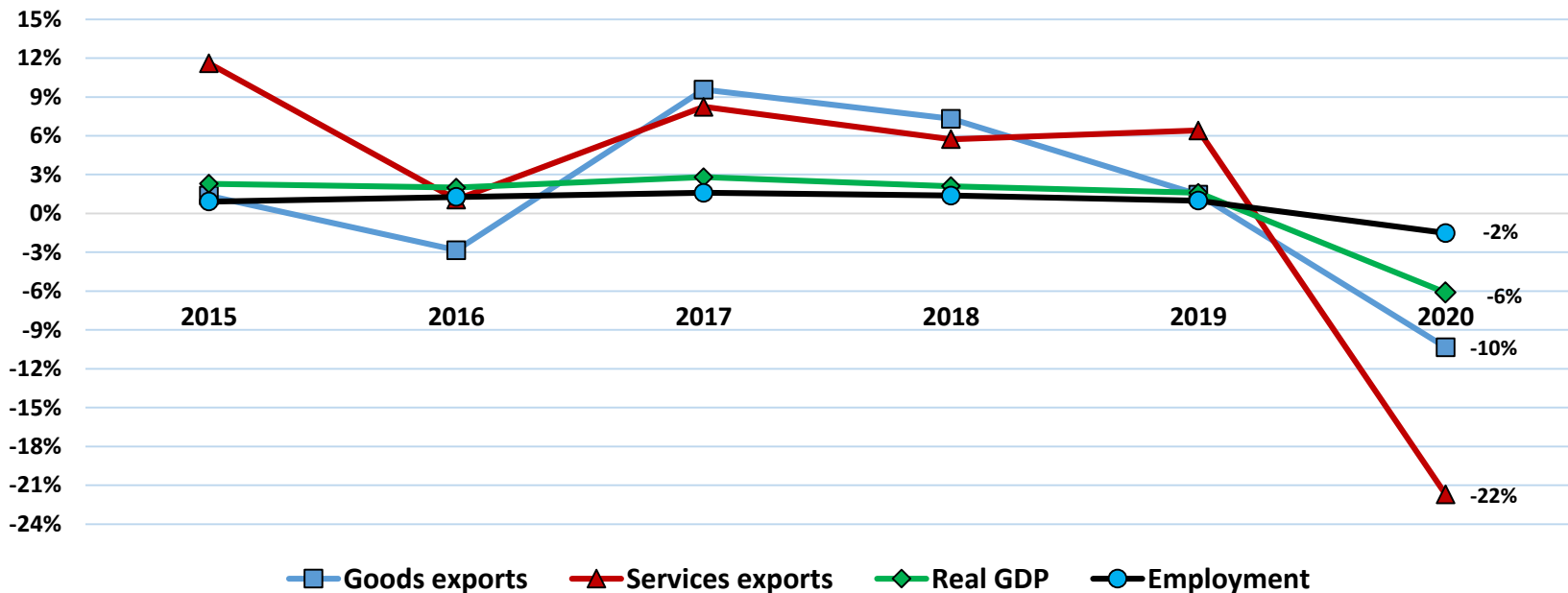
The impact of COVID-19 on world GDP and trade



Source: IMF World Economic Outlook, April 2021

The impact of COVID-19 on EU exports, GDP and employment

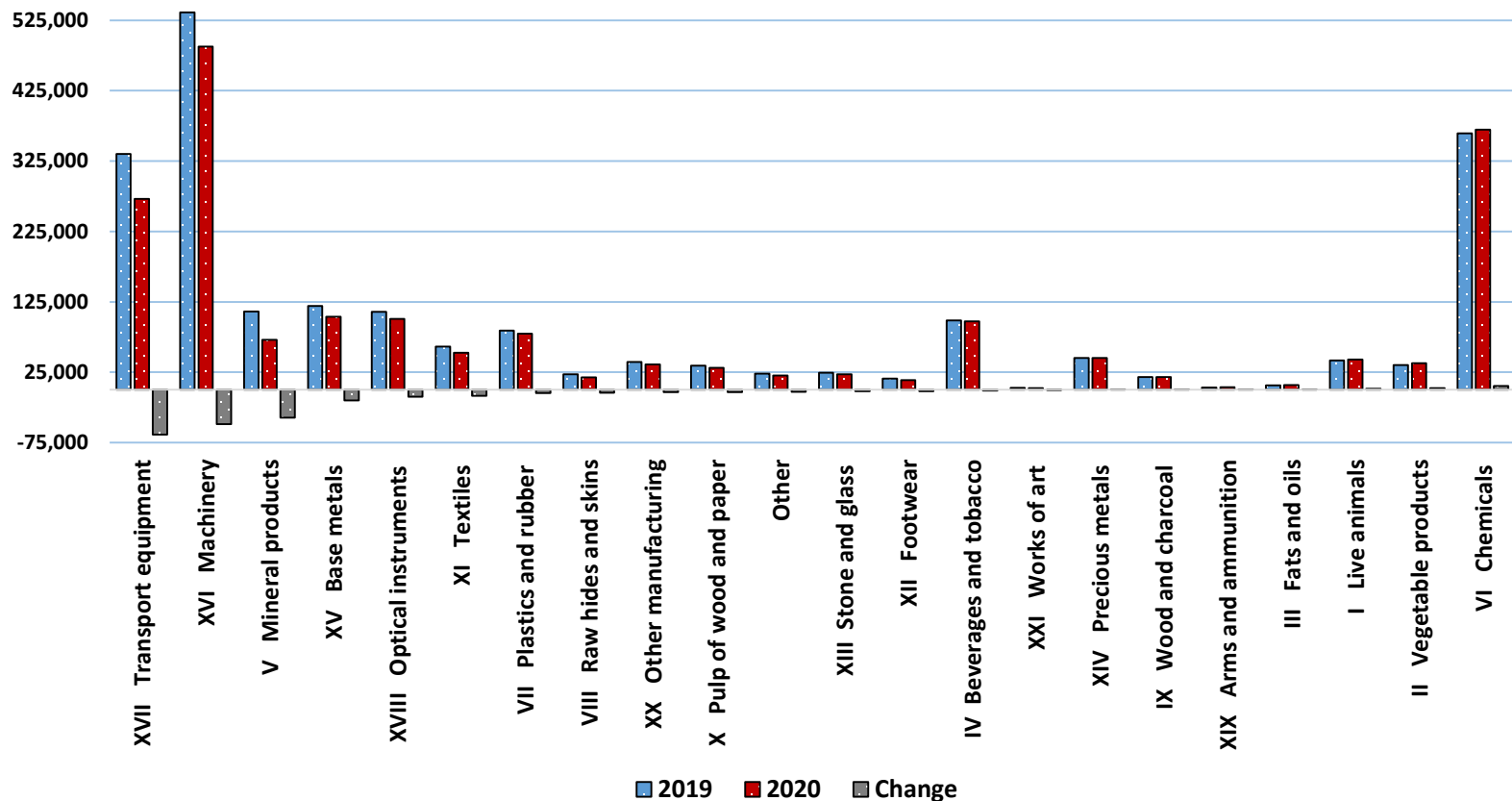
EU GDP, trade and employment developments



Source: Eurostat

The COVID-19 impact on goods trade

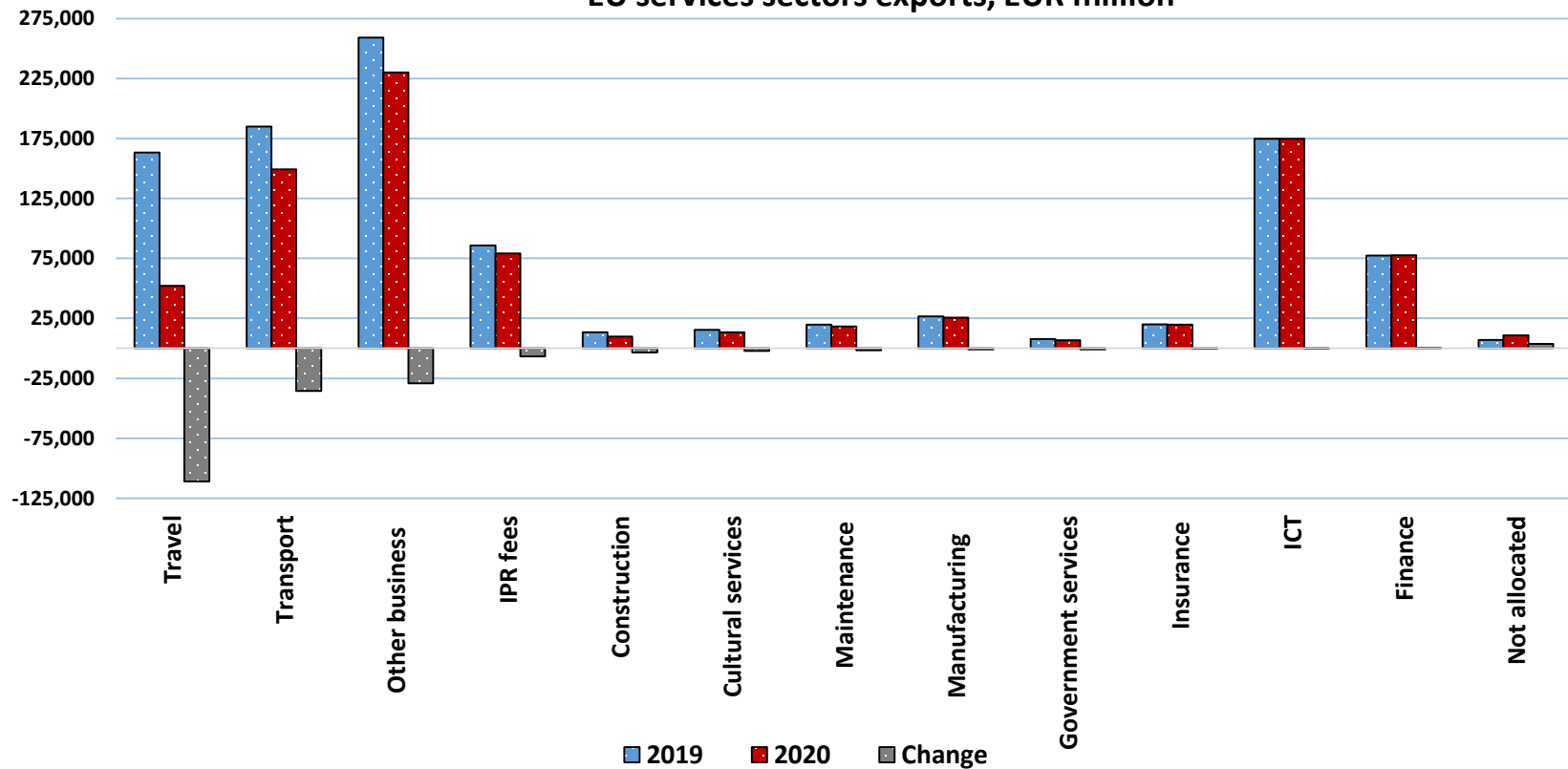
EU merchandise exports per HS section, EUR mn



Source: Eurostat, statistical regime 4

The impact of COVID-19 on services trade

EU services sectors exports, EUR million



Source: Eurostat, BoP

Estimating the COVID-19 related potential exports job losses: methodological approach

- Use newly released FIGARO framework depicting EU economies and trading partners in 2019 to calculate the number of jobs dependent on extra-EU exports following Kutlina-Dimitrova (2018).
- Construct a hypothetical no-COVID counterfactual trade scenario by forecasting 2019 trade flows to their 'trend levels' in 2020 by using published exports projections.
- Use as a benchmark the actual COVID-19 affected trade data in 2020 as a baseline scenario.
- The difference between the number of jobs in scenario 1 and scenario 2 represents 'potential' exports related job losses.

FIGARO framework

- The FIGARO tables are a new statistical product of integrated global accounts for economic modelling with balanced trade flows and represent the first multi-regional input-output (MRIO) framework developed by EU institutions.
- The FIGARO tables comprise of a full set of national tables for all EU Member States, United Kingdom and United States at a detailed level of 64 industries and 64 products. The remaining countries and the aggregate ROW come from the the OECD TiVA database.
- The FIGARO tables are available as a time series starting in 2010 up to 2019.
- The FIGARO tables were released on 26 May 2021.

Calculating the number of jobs linked to Extra-EU exports (1)

World
MRIO

$$Z = \begin{bmatrix} \begin{matrix} Z^{11} & Z^{12} \\ Z^{21} & Z^{22} \end{matrix} & \begin{matrix} Z^{13} & Z^{14} \\ Z^{23} & Z^{24} \end{matrix} \\ \begin{matrix} Z^{31} & Z^{32} \\ Z^{41} & Z^{42} \end{matrix} & \begin{matrix} Z^{33} & Z^{34} \\ Z^{43} & Z^{44} \end{matrix} \end{bmatrix}$$

Intermediate use

$$f = \begin{bmatrix} \begin{matrix} f^{11} + f^{12} \\ f^{21} + f^{22} \end{matrix} & \begin{matrix} f^{13} + f^{14} \\ f^{23} + f^{24} \end{matrix} \\ \begin{matrix} f^{31} + f^{32} \\ f^{41} + f^{42} \end{matrix} & \begin{matrix} f^{33} + f^{34} \\ f^{43} + f^{44} \end{matrix} \end{bmatrix}$$

Final use/demand

EU = Countries 1,2
Non-EU: Countries 3,4

Z = intermediate matrix
with n industries and n
products

f^i = column vector of
domestic final demand
of n products

f^j = column vector of
exports of n final
products

EU
MRIO

$$Z^{EU} = \begin{bmatrix} Z^{11} & Z^{12} \\ Z^{21} & Z^{22} \end{bmatrix}$$

EU intermediate use

$$f^{EU} = \begin{bmatrix} \underbrace{f^{11} + f^{12}}_{\text{EU domestic final use}} + \underbrace{e^{13} + e^{14}}_{\text{EU Exports}} \\ \underbrace{f^{21} + f^{22}}_{\text{EU domestic final use}} + \underbrace{e^{23} + e^{24}}_{\text{EU Exports}} \end{bmatrix}$$

$$x^{EU} = \begin{bmatrix} x^1 \\ x^2 \end{bmatrix}$$

EU output

$$w^{EU} = \begin{bmatrix} w^1 \\ w^2 \end{bmatrix}$$

EU employment

x^i = column
vector of region's i
total output

e^i = column
vector of region
 i 's employment



Calculating the number of jobs linked to Extra-EU exports (2)

$$V_{exeu}^{EU} = \underbrace{\hat{W}^{EU}}_{\text{Employment coefficient}} \underbrace{(\hat{X}^{EU})^{-1} [I - Z^{EU} (\hat{X}^{EU})^{-1}]^{-1}}_{\text{Leontief inverse of a matrix of technical coefficients}} \underbrace{\hat{e}^{EU}}_{\text{EU exports}}$$

Jobs supported by EU exports

exp_20_projected

Scenario 1_noCOVID: emp_coef_19*L_19*exp_19*g_exp20*corrNA

Scenario 2_COVID: emp_coef_19*L_19*exp_20*corrNA

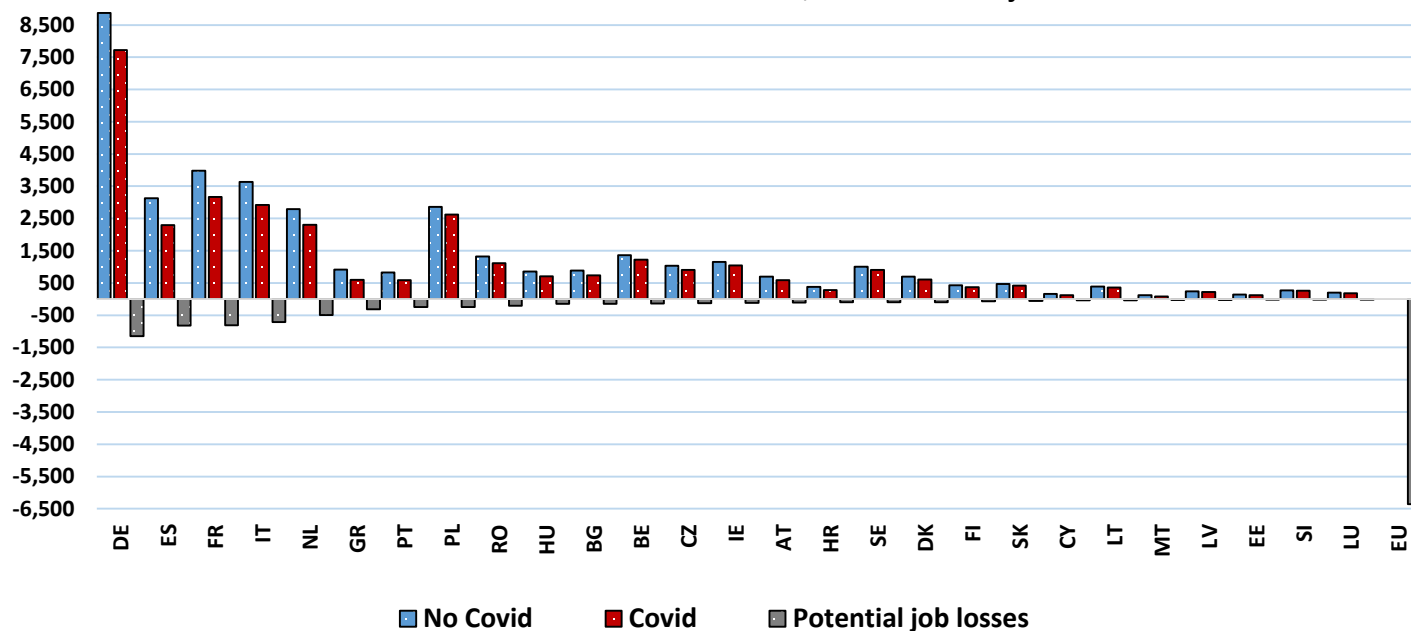
g_exp20 = projected growth rate of exports in pre-COVID19 times

Scenario 1 – Scenario 2 = Impact of COVID19 on jobs

Note: For counterfactual comparative analysis, we assume same price evolution and same correction for National Accounts – lower bounds

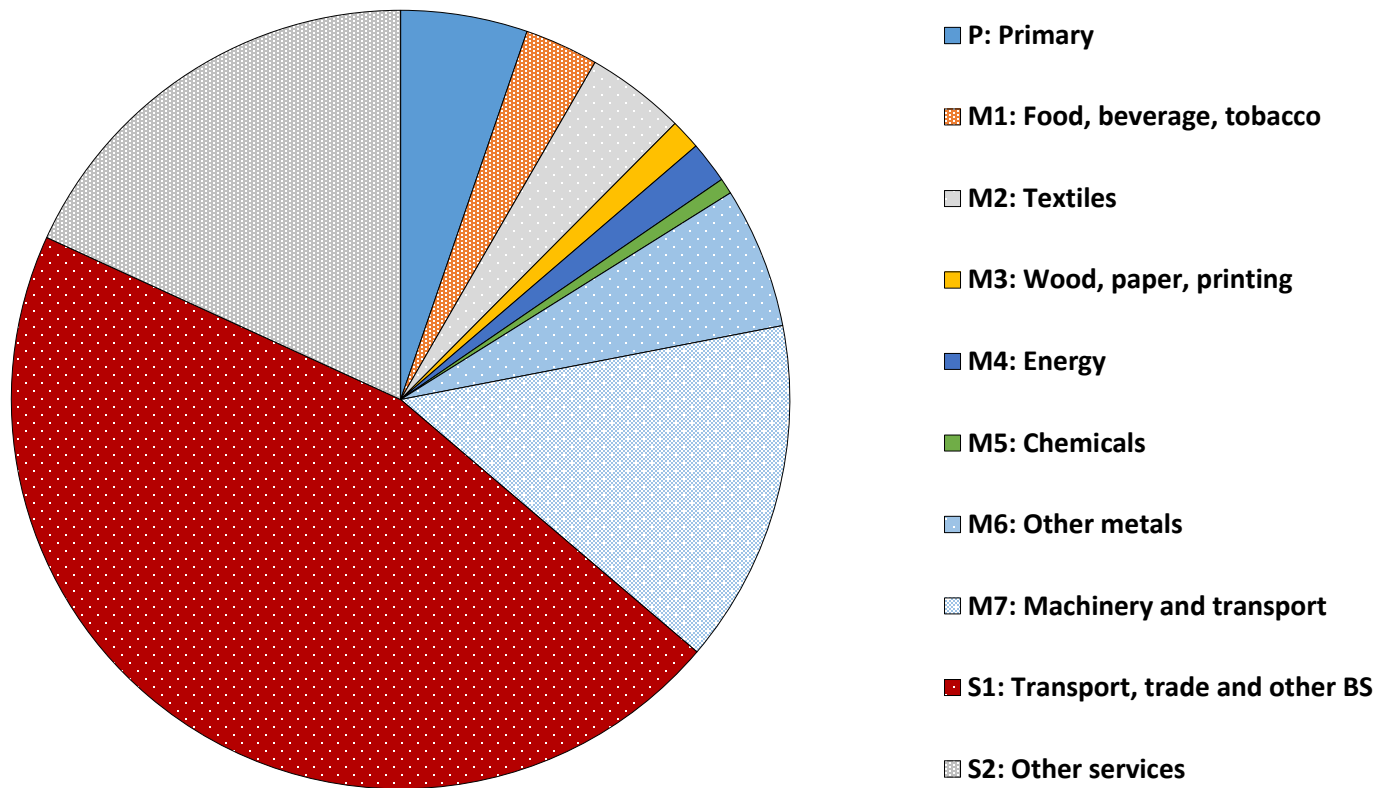
Assessing the impact of COVID-19 on exports related jobs in the EU (1)

COVID-19 simulated scenarios, in thousand jobs



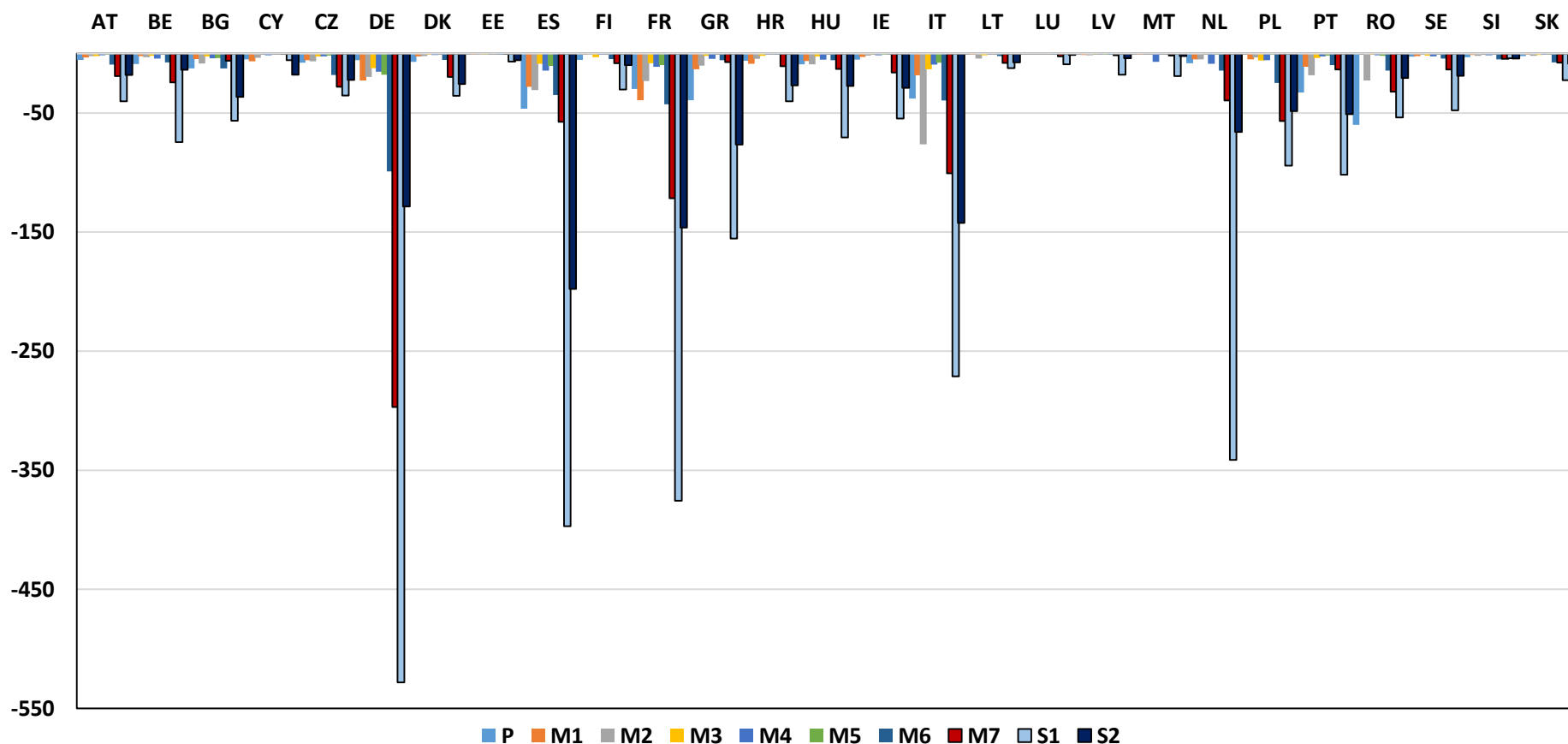
Source: Authors' calculations based on Eurostat FIGARO tables

Assessing the impact of COVID-19 on exports related jobs in the EU (2)



Source: Authors' calculations based on Eurostat FIGARO tables

Assessing the impact of COVID-19 on exports related jobs in the EU (3)



Source: Authors' calculations based on Eurostat FIGARO tables

Summary and conclusions

- The potential exports related jobs losses linked to COVID-19 are significant and amount to more than 6 million jobs in the EU27.
- These potential jobs losses vary across sectors with the transport, trade and other business services accounting for 46% of the COVID-19 related losses, followed by other services sectors 18% and machinery and transport 14%.
- At country level the jobs losses are the highest in Germany (18%), followed by France (13%), Spain (13%) and Italy (11%). Some countries such as Latvia, Estonia, Slovenia and Luxembourg experience only negligible potential job losses.
- ! Word of caution should be expressed in respect to the interpretation of these results as these are 'potential' jobs losses as in all countries under consideration social security schemes were activated that prevented in many cases a 'real' job loss.



Thank you for your attention!

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